Ontario

The Chair of Management Board of Cabinet

Request for Proposals

For

Electronic Service Delivery (ESD) Consulting Services

Request for Proposal Number: MBS-ESD-01

Issued on: Tuesday November 20, 2001

MERX Reference Number: 51710

Closing Date: Friday December 21, 2001
Closing Time: 10:00 a.m. local Toronto time

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1.0   INTRODUCTION

1.1   General

This Request for Proposals (the "RFP") is an invitation to prospective Proponents to submit Proposals for the provision of Electronic Service Delivery (ESD) consulting services ("Services"), as further described in this RFP, in accordance with the common infrastructure requirements of the Government of Ontario. Information on the Government of Ontario I&IT strategy, including common infrastructure requirements, can be found at http://www.cio.gov.on.ca

This RFP is issued by Her Majesty the Queen in Right of Ontario, as represented by the Chair of the Management Board of Cabinet ("MBS") on behalf of all Ontario Ministries, Agencies classified as Schedules I & IV on February 1, 2000 and advisory, adjudicative, regulatory (excluding those with governing boards) Agencies created after February 1, 2000 (individually called a "Client" and collectively referred to as "Clients"). The listings of Ministries and Schedule I & IV Agencies can be found on the website of Procurement Policy & Information Technology Procurement Branch (PPITPB) of MBS at http://www.ppitpb.gov.on.ca/mbs/psb/psb.nsf/english/bpsdef.html

The vendor of record (VOR) arrangement resulting form this RFP will not include the procurement of hardware or software products. Any ESD-related hardware or software products that Clients may require due to recommendations resulting from the provision of Services under this VOR arrangement, must be obtained through a competitive procurement process, or through an existing MBS or Client VOR arrangement. Information on the Government of Ontario's procurement policies and processes, including hardware and software acquisitions, is available at http://www.ppitpb.gov.on.ca/mbs/psb/psb.nsf/english/procurement.html

This RFP does not contemplate nor provide for outsourcing of any government services or operations to third parties. Clients will be responsible for the implementation, use and operation of the Consultants' deliverables under this VOR arrangement.

MBS intends to select Proponents to enter into a Vendor of Record (VOR) arrangement in accordance with the terms and conditions of this RFP. Successful Proponents will be required to enter into an Agreement with MBS, in form and content substantially similar to Appendix A of this RFP.

Although MBS may consider requests from successful Proponents for changes to Appendix A that are in the nature of clarifications, or corrections of typographical or clerical or similar errors, MBS is under no obligation to enter into any Agreement that is not in form and content substantially similar to Appendix A. Any Proponent that requires changes that would, in the sole discretion of MBS, cause an Agreement not to be in form and content substantially similar to

Appendix A, is subject to disqualification. Without limiting the generality of the foregoing, such changes would include, but are not limited to, any changes that in the sole discretion of MBS may:

> (a)   have a material impact on the Vendor's cost of supplying goods or services pursuant to this RFP;

> (b)   have a material impact on the allocation of risk and benefit between MBS/Clients and the Vendor as provided for in Appendix A;

> (c)   have a material impact on the standard of performance required of the Vendor in respect of the services to be provided pursuant to this RFP;

> (d)   result in unfairness to other Proponents.

By submitting a bid, a Proponent is deemed to confirm that it has prepared its Proposal with reference to all of the provisions of Appendix A, and has factored all of the provisions of Appendix A into its pricing assumptions and calculations and proposed Per Diem Rates.

Proponents must also accept that terms and conditions which may be in place in other contracts with the Government of Ontario are not applicable or relevant to this RFP.

By submitting a bid, a Proponent is agreeing to these requirements.

The term of the Agreement is for two (2) years, with an option in favour of MBS to extend the Agreement on the same terms and conditions for an additional one (1) year period, subject to MBS discretion.   This VOR arrangement will not be re-opened at any point over the possible three (3) year term. New Vendors will not be added to the VOR list during the term of the VOR arrangement resulting from this RFP. There will not be any opportunity to submit revised Per Diem Rates during the term of this VOR arrangement.

This RFP supersedes any previous communication material posted on MERX in reference to this ESD Consulting Services RFP.

Proponents should be aware that the Ontario Government's conflict of interest rules will apply to any subsequent implementation RFPs or Assignments which may result from Assignments undertaken as a result of this RFP. Without limiting the generality of the foregoing, a Vendor that provides services in the Enabled IT Services Stream, i.e., the development and design of an Enabled IT project, will not be permitted to bid on any future contracts pertaining to the implementation of the same Enabled IT project.

1.2   Service Streams

This RFP invites proposals for two ESD Consulting Service Streams:

Stream "A" - Business Process Services; and
Stream "B" - Enabled IT Services.

These two Service Streams are described in Sections 2.1 and 2.2 of this RFP. Proponents may bid on any Role or Roles, in any one or more Geographic Regions, within either Service Stream, or both Service Streams. Proponents are not required to bid on all Roles or both Service Streams, or all Geographic Regions.

1.3   No Guarantee of Volume of Work or of Exclusivity of Agreement

MBS makes no guarantee of the value or volume of work successful Proponents may receive through this VOR arrangement. The value and volume (if any) of Services acquired by Clients will depend on a variety of factors including the Clients' annual budgetary approvals.

The Agreements executed with successful Proponents will not be exclusive contracts for the provision of the described Services. However, the VOR arrangement resulting from this RFP will be for the mandatory use of all Clients, as defined in Section 1.1. Clients that have previously entered into contracts or are already in the process of evaluating bids or awarding contracts for ESD consulting services must use MBS' mandatory-use ESD Consulting Services VOR arrangement created pursuant to this RFP after the expiry of these contracts and for any new ESD consulting service requirements.

1.4   Background

Management Board of Cabinet approved the Ontario Strategy for the Digital Economy in March 2000. One of the pillars of this strategy is for the Government of Ontario to lead by example through electronic government, or e-Government. The e-Government initiative is aimed at using electronic tools to transform service delivery and management. One of the primary components of this initiative is the online delivery of government services (Electronic Service Delivery or ESD). The strategic vision for ESD in Ontario is to:

> *Improve service quality to Ontario's people and businesses by implementing client-focused, integrated, accessible, and cost-effective electronic service delivery by the Government of Ontario.*

The Government of Ontario has committed to increase Ontarians' satisfaction with government

services by becoming a world leader in delivering services on-line by 2003. In this context, Ministries have been developing ESD plans, subject to funding approvals. Ministries may require specialized ESD-focused external resources to take action on such plans. The consulting services offered through the VOR arrangement (resulting from this RFP process) will support Client's needs to analyze and re-engineer existing program delivery and to assist Clients to design/develop client-centred programs and services that will be accessible to the citizens of Ontario through electronic channels. Clients will continue to be responsible for the day-to-day operation and delivery of government programs and services.

The scope of the government's corporate ESD strategy includes:

1. Changing internal program and service delivery processes through the use of information technology;
2. Using a variety of electronic channels to make the delivery of programs and services more seamless, convenient, and customer focused;
3. Transforming government's relationships with partners in the broader public sector, other levels of government and the private sector;
4. Transforming large public sector systems such as health, education, justice, social services, and transportation;
5. Creating new channels for citizen participation in the governing process, e.g., electronic voting.

The specific scope of ESD for Ministries will vary and will depend on the details of each Ministry's business plan. Details of Ministry business plans can be found at the following Government of Ontario website: http://www.gov.on.ca/MBS/english/mbs/businessplans.html

2.0   THE SERVICES

This RFP invites Proponents to offer qualified consultants to perform the duties of each of the Roles for which a Proponent chooses to bid for Business Process Services and/or Enabled IT Services, within 3 defined geographic regions as described in Sections 2.1, 2.2 and 2.3.

Proponents may offer Services for any or all of the **Roles** in either or both Service Streams, within any or all of the **three (3) Geographic Regions.**

Once the VOR arrangement is established, Clients will be able to acquire the Services offered by a Vendor for all or any of the Roles referenced in Sections 2.1 and 2.2 for which the Vendor was selected through this RFP process, according to the Client's specific requirements. This means that as part of the general skill sets identified in the profile of each Role as described in Section 2.1 and 2.2 and also in Appendices L and M, Clients may specify requirements for each individual Assignment. Vendors shall provide Services to Clients in accordance with the specifications stated in the RFP, at the applicable Per Diem Rates (price) set out in the Vendor's Proposal. The use and operation of the Vendor's deliverables will be the sole responsibility of the Client. It is possible that a Vendor could be chosen for an Assignment to deliver Services in both the Business Process Services Stream and the Enabled IT Services Stream for the same Client if that Vendor is listed for both Streams on the VOR arrangement.

The cost of all Services, including any follow-on work, acquired by Clients from Vendors under the VOR arrangement resulting from this RFP must not exceed $500,000 per Assignment. Vendors may be required to provide more than one resource for any particular Assignment. However, the ceiling cost for each Assignment, including any follow-on work, shall not exceed $500,000.

2.1   Stream "A" - Business Process Services Stream

Business Process Services are consulting services required to support Clients in planning and designing the transformation of government program and business services within the context of ESD. Roles in the Business Process Services Stream focus on analyzing and assessing the current state of an organization or system, and making recommendations with respect to business process re-engineering and change management. However, extensive IT knowledge and skills are required for some of the Roles in the Business Process Services Stream. These Roles will help Clients plan and design the transformation of their businesses for ESD.

In total, there are 14 service Roles within the Business Process Services Stream. **Detailed descriptions of each Role, including responsibilities, experience, and competencies required can be found in Appendix L.**

2.2 Stream "B" - Enabled IT Services Stream

Enabled IT Services are technical consulting services required to support the Client's task of transforming the government's business services to a real-time environment through use of the internet, kiosks, Interactive Voice Response (IVR), and other electronic channels. Consultants are expected to propose and design ESD solutions for the Clients.

In total, there are 36 service Roles within the Enabled IT Services Stream. These Roles are divided into five (5) sub-Streams as set out below. **Detailed descriptions of the responsibilities, experience required, and competencies for each Role in the Enabled IT Services Stream are given in Appendix M.**

2.2.1 Technology Management

Based on the analysis and assessment undertaken by the Business Process Services Consultants, the consulting services in this sub-Stream will be engaged to:

1. Help Clients assess and evaluate their current technical environment, relative to what would be required to be in place for the ESD solutions proposed by the Business Process Services Consultants.

2. Propose IT-related ESD solutions to facilitate the Client's implementation of ESD solutions proposed by Business Process Services Consultants, and ensure that such proposed ESD solutions are compliant with the common infrastructure standards of the Government of Ontario.

The Roles required to provide technology management services are: Senior IT Project Manager, ESD; Project Integration Manager; and Technology Coordinator. **(For further details on this sub-Stream, see Appendix M.)**

2.2.2 Web Internet Services

The consulting services in this sub-Stream will be engaged to design and develop information technology solutions to enable Clients to deliver services to the customer through the internet/intranet. The responsibilities of the Consultants will include:

1. Complex website development with online layout and graphical design;
2. Web master support for Clients on an "as-needed" basis;
3. Encryption for Web site security; and
4. Technical writing and documentation.

Consultants will be required to adhere to all web internet standards and encryption standards in place for the Government of Ontario from time to time.

Roles required to provide Web Internet Services are: Project Manager-Web; Web Technology Architect; Web Product Specialist; Web Database Analyst; Web Application Designer; Web Administrator; Multi Media Web Developer; Technical Writer – Web User Interface; Web Security Specialist; Internet Portal Specialist; Business Analyst – Web User Interface. **(For further details on this sub-Stream, see Appendix M.)**

2.2.3   *Electronic-Commerce Services*

The consulting services in this sub-Stream will be engaged to design and develop information technology solutions to enable Clients to conduct e-commerce online. For example, this could allow Client customers to purchase services and products electronically from Clients in a secure manner. The electronic transactions will be processed at a single point and channeled to the appropriate Ministry department. These transactions will be processed in real-time through the internet, IVR, kiosks or other electronic channels. Consultants will be required to adhere to all e-Commerce standards in place for the Government of Ontario from time to time.

The responsibilities of the Consultants will include:

1. Designing systems to provide infrastructure to process transactions electronically for:
    - Requisition and purchasing
    - Electronic marketing

2. Designing systems to provide secure electronic transaction processing using:
    - Firewalls
    - Data encryption for public key and private key
    - Digital signatures
    - Digital certificates

The Roles required to provide e-commerce services are: Project Manager - e-Commerce; Enterprise Application Integration Specialist; Enterprise Application Integration Database Architect; e-Commerce Portal Developer; e-Commerce Solutions Specialist; e-Commerce Applications Specialist; e-Commerce Security Specialist; Business analyst – e-Commerce User Interface; and Technical Writer – e-Commerce User Interface. **(For further details on this sub-Stream, see Appendix M.)**

2.2.4   *Wireless Mobile-Commerce Services*

The consulting services in this sub-Stream will be engaged to design and develop information technology solutions for Clients to deliver government services to their customers through mobile commerce. For example, this could allow customers to purchase services and products through mobile commerce from Clients in a secure manner and could also allow Clients to interconnect their network resources to provide wireless services capability.

Information/products/services will be delivered through wireless devices including smart phones, personal digital assistants (PDAs) or other smart devices. (Note: This VOR arrangement is not to be used to acquire hardware products). Consultants will be required to adhere to all wireless and mobile-commerce standards in place for the Government of Ontario from time to time.

The responsibilities of the Consultants will include:

1. Designing wireless systems to provide infrastructure to process transactions electronically for:
   - Requisition and purchasing
   - Electronic marketing

2. Designing systems to provide secure electronic transaction processing using:
   - Firewalls
   - Data encryption for public key and private key
   - Digital signatures
   - Digital certificates

3. Designing wireless network solutions that will accommodate PDAs, Smart PC, wireless access points and wireless servers running under wireless technology that will facilitate both short range and wide band transmission.

Roles required to provide mobile-commerce services are: Project Manager – m-Commerce; Wireless Technology Architect; Wireless Product Specialist; Wireless Solutions Developer; Wireless Application Designer; and Technical Writer – Wireless User Interface. **(For further details on this sub-Stream, see Appendix M.)**

2.2.5 *Call Centre Development Services*

The consulting services in this sub-Stream will be engaged to design and develop information technology solutions for Clients which will enable their customers to access government services through call centres 24 hours a day, seven days a week (24/7). Consultants will be required to adhere to all standards for Call Centres that are in place for the Government of Ontario from time to time.

The responsibilities of the Consultants will include:

1. Designing IVR (Interactive Voice Response) application systems to enable customers of the Government of Ontario to obtain information or enter transactions using telephone systems.

2. Designing AVR (Automated Voice Recognition) application systems to interpret and translate speech into computer executable transactions.

3. Designing Call Centres for Clients to provide services to customers more efficiently and effectively using technology for:

- Private Administrative Branch Exchange (PABX)
- Customer access networks
- Transaction processing
- Service request management

The Roles required to provide Call Centre Services include: Project Manager – Call Centre IVR Solutions; Call Centre Specialist; IVR Integration Specialist; IVR Programmer/Analyst; IVR – Web Developer; IVR User Interface Designer; and Technical Writer - IVR. **(For further details on this sub-Stream, see Appendix M.)**

Table 2.1 – Service Streams and Role Summary

STREAM "A" Business Process Services Stream	STREAM "B" Enabled IT Services Stream

(14 Roles)	5 SUB-STREAMS (36 ROLES)

- Senior Project Manager, ESD
- Project Manager, ESD
- Project Administrator
- Business Transformation Architect
- Business Process Assessment and Integration Specialist
- Call Centre Business Analyst
- Wireless Application Services Specialist
- IT Security Specialist
- Web Multimedia Content Specialist
- Systems Auditor
- Quality and Performance Management Specialist
- Language Translation Specialist
- Privacy Specialist
- Customer Relationship Management (CRM) Specialist
	1. Technology Management sub-Stream
	   - Senior IT Project Manager, ESD
	   - Project Integration Manager
	   - Technology Coordinator
	
	2. Web Internet Services sub-Stream
	   - Project Manager-Web
	   - Web Technology Architect
	   - Web Product Specialist
	   - Web Database Analyst
	   - Web Application Designer
	   - Web Administrator
	   - Multi Media Web Developer
	   - Technical Writer – Web User Interface
	   - Web Security Specialist
	   - Internet Portal Specialist
	   - Business Analyst – Web User Interface.
	
	3. E-Commerce Services sub-Stream
	   - Project Manager - e-Commerce
	   - Enterprise Application Integration Specialist
	   - Enterprise Application Integration Database Architect
	   - e-Commerce Portal Developer
	   - e-Commerce Solutions Specialist
	   - e-Commerce Applications Specialist
	   - e-Commerce Security Specialist
	   - Business analyst – e-Commerce User Interface
	   - Technical Writer – e-Commerce User Interface
	
	4. Wireless Mobile-Commerce Services sub-Stream
	   - Project Manager – m-Commerce
	   - Wireless Technology Architect
	   - Wireless Product Specialist
	   - Wireless Solutions Developer
	   - Wireless Application Designer
	   - Technical Writer – Wireless User Interface

	5. Call Centre Development Services sub-Stream
	- Project Manager – Call Centre IVR Solutions
	- Call Centre Specialist
	- IVR Integration Specialist
	- IVR Programmer/Analyst
	- IVR Web Developer
	- IVR User Interface Designer
	- Technical Writer – IVR

Detailed descriptions for each Role listed in Table 2.1, including responsibilities, knowledge and competencies, are given in Appendices L and M. Appendix N is a Glossary of terms used in Appendices L and M.

2.3.   Geographic Regions

Services described in this RFP are required for the following three (3) Geographic Regions:

REGION	GEOGRAPHIC REGIONS	LOCATIONS (including but not limited to the following:)
1	**GREATER TORONTO AREA (GTA)**	· Greater Toronto Area · Guelph · Hamilton · Niagara Falls · Oshawa · St. Catharines
2	**CENTRAL ONTARIO**: **-** including Southwestern and Eastern Ontario	· Cornwall · Huntsville · Kingston · London · Orillia · Owen Sound · Ottawa · Peterborough · Trenton · Windsor
3	**NORTHERN ONTARIO** **-** including Northwest and Northeast Ontario	· Fort Frances · Kenora · North Bay · Sault Ste. Marie · Sudbury · Thunder Bay · Timmins

3.0   EVALUATION OF PROPOSALS

3.1   Evaluation Process

The evaluation of Proposals will be conducted in stages that will allow MBS to evaluate both the capabilities of the Proponent to fill the Roles (Appendices L and M), and the pricing for the Roles the Proponent is proposing for each Service Stream, in each geographic area. **It is the Proponent's responsibility to ensure that it is able to provide resources fully capable of carrying out all the duties identified for any Role listed in Appendices L and M for which it is submitting a bid**.

3.2   Stages of Evaluation

The evaluation stages for this RFP are:

Stage I   Evaluation of Mandatory Submission Requirements and other Mandatory Requirements
Stage II   Evaluation of Rated Criteria – Proponent's Experience and Qualifications
Stage III   Evaluation of Prices – Per Diem Rates

A Proposal must satisfy all of the Mandatory Requirements described in Stage I in order to proceed to Stage II – Evaluation of Rated Criteria - Proponent's Experience and Qualifications.

In Stage II, each Proposal will be allocated points based on the Proponent's response to the information requested at Section 3.4 in the RFP. The maximum total point allocation for Stage II is 50 points. Proposals must obtain a minimum score of 30 points in Stage II in order to proceed to Stage III of the evaluation process. **Proposals which do not receive a minimum of 30 points will be disqualified from further evaluation.**

In Stage III (Evaluation of Prices – Per Diem Rates), proposed Per Diem Rates for each Role will be evaluated separately. The maximum total point allocation for Stage III is 50 points. Points will be allocated to the Per Diem Rate for each Role based on the relationship of the Per Diem Rate bid to the average of the two lowest Per Diem Rate bids received from all Proponents for that particular Role, for that particular Geographic Region. (For further details, see Section 3.5)

To determine successful Proponents for each Role, in each Geographic Region, the scores from the Stage II and Stage III evaluations will be added together to arrive at a Grand Total Score for the Role. A Proponent will be deemed successful for a particular Role in a particular Geographic Region if its Grand Total Score for that Role in that Geographic Region is a minimum of 50 points out of the 100 points available. This means that all such Roles with a Grand Total Score

of 50/100 or higher will be successful in the Stage II and Stage III evaluation process for this RFP. However, any bid by a Proponent for a Role, in a Geographic Region, which receives a pricing score of zero (0) points for Stage III will be disqualified whether or not the Proponent's Stage II score for that Role in a Geographic Region totals 50 points.

In summary, the following point allocations will be applied to Stages II and III:

Table 3.1 – Evaluation Stages - Point Allocations

EVALUATION STAGE	MAXIMUM POINT ALLOCATION
Stage II – Evaluation of Rated Criteria – Proponent's Experience and Qualifications	50
Stage III – Evaluation of Prices – Per Diem Rates	50
TOTAL	**100**

3.3   Stage I - Evaluation of Mandatory Submission Requirements and other Mandatory Requirements

During the Stage I evaluation, Proposals will be examined to ensure that they meet the Mandatory Submission Requirements and other Mandatory Requirements which are addressed below and in Appendices B through G inclusive. A Proponent must satisfy all of the Mandatory Submission Requirements and all of the other Mandatory Requirements described in this section in order to proceed to Stage II – Evaluation of Rated Criteria – Proponent's Experience and Qualifications. Proposals which are not considered by MBS to be in substantial compliance with all Mandatory Submission Requirements and all other Mandatory Requirements may be disqualified.

3.3.1   **Mandatory Submission Requirements Checklist (Appendix B)**
This form must be completed by the Proponent according to the instructions contained in that form.

3.3.2   **Form of Offer (Appendix C)**
This form must be completed by the Proponent according to the instructions contained in that form as well as the instructions set out below:

(i) Conflict of Interest:

Each Proponent must include in its Proposal confirmation that the Proponent does not and will not have any conflict of interest (actual or potential) in submitting its Proposal, or if selected, with its contractual obligations under the Agreement. Where applicable,

the Proponent must disclose in its Proposal, in the manner set out in the Form of Offer (Appendix C), information pertaining to any situation which may be a conflict of interest in submitting a Proposal or, if selected, with the contractual obligations of the Proponent under the Contract. Furthermore, each Proponent must confirm that the Proponent neither has nor had access to any Confidential Information as defined in the Form of Offer.

(ii) General:

The Proposal of any Proponent may be disqualified where that Proponent fails to complete the Form of Offer (Appendix C), pertaining to Conflict of Interest, or makes misrepresentations regarding any of the above. Further, MBS, in addition to any other remedies it may have in law or in equity, shall have the right to rescind any Agreement made with a Proponent if MBS, in its sole discretion, determines that the Proponent made a misrepresentation regarding any of the above.

Other than by inserting the information requested in the Form of Offer and by signing the Form of Offer, Proponents may not effect any changes to the Form of Offer or qualify in their Proposals the acknowledgements made in the Form of Offer. Any such changes or qualifications, whether on the face of the Form of Offer or elsewhere in a Proposal, may result in disqualification. In the event of a discrepancy between the Form of Offer and a Proponent's Proposal, the Form of Offer will prevail.

(iii) Proof of Insurance

By signing the Form of Offer, each Proponent acknowledges its willingness, if selected, to provide proof of insurance coverage as required in the Agreement. The selected Proponent must provide proof of insurance coverage in the form of a valid certificate of insurance prior to the execution of the Agreement by MBS.

3.3.3 Rate Bid Form (Appendix D)

This form must be completed by the Proponent according to the instructions contained in that form as well as those instructions set out below:

(i)   Rates proposed on the Rate Bid Form shall be firm for the initial two year term of the Agreement and also for any extension option exercised by MBS.

(ii)   Rates shall be provided in Canadian Funds, inclusive of all applicable duties and taxes (except Provincial Sales Tax (PST), which shall not be included in the rates quoted; PST shall be shown on invoices as a separate item, if applicable) and excluding the federal Goods and Services Tax. The Services are required for the use of the Crown in right of Ontario and are therefore not subject to the federal Goods and Services Tax;

(iii)   Rates quoted by the Proponent are to include all labour and materials, overhead including but not limited to any fees or other charges required by law, and insurance;

(iv)   Travel, meal and accommodation expenses shall not be included in the rates quoted and shall be billed separately and charged in accordance with the *Management Board Secretariat's Corporate Operating Policy for Travel Management and General Expenses,* as may be amended from time to time.   Proponents may contact MBS to obtain the applicable rates. Accommodation arrangements shall be made with those facilities listed in the *Government of Ontario Travel Accommodation Directory,* as may be amended from time to time;

(v)   Proponents must submit all Per Diem Rates on the Rate Bid Form using the electronic template provided with the RFP, in Microsoft Excel 97 format. **Under no circumstances must the Rate Bid Form included in the RFP be altered in any way other than by insertion of the required information in the fields provided. If the Rate Bid Form is altered in any other way, the Proponent's bid may be disqualified.**

3.3.4   Tax Compliance Declaration Form (Appendix E)

This form must be completed by the Proponent according to the instructions contained in the form as well as those instructions set out below:

The Ontario Government will not enter into an Agreement with a Proponent that fails to pay its provincial taxes on a timely basis. MBS will forward to the Ministry of Finance a copy of each selected Proponent's signed Tax Compliance Declaration Form for verification. By signing this form, the Proponent is consenting to the release of such information from MBS to the Ministry of Finance and from the Ministry of Finance to MBS for this purpose.

Proponents may direct all enquiries regarding the Tax Compliance Declaration Form to:

> Ministry of Finance
> Collections Branch
> 6th Floor, 33 King Street
> Oshawa, Ontario   L1H 8H5
> Telephone: (905) 433-6801 or toll free at 1-800-246-4441

3.3.5   Reference Form (Appendix F)

If submitting a bid for any Role or Roles in the **Business Process Services Stream**, a Proponent **must** provide two (2) relevant references, as described below, from either the public or private sector. Only two such references are required, regardless of the number of Roles bid in the **Business Process Services Stream.**

If submitting a bid for any Role or Roles in the **Enabled IT Services Stream**, a Proponent **must** provide two (2) relevant references, as described below, from either the public or private sector, for **each sub-Stream**, (but not for each Role) covered by its bid. For example, if 10 Roles are bid that fall within 4 sub-Streams within the Enabled IT Services Stream, then 8 references (2 for each of the 4 sub-Streams) would be required.

The references provided must be in respect of the assignments described by the Proponent in the Assignment Profiles submitted pursuant to section 3.4.3 (ii) below.

The Proponent **must** in its Proposal identify which Role(s) within the Service Streams (using the defined Roles in this RFP) were provided by the Proponent for the assignments for which the references are provided. It is acceptable for a Proponent to submit the same reference for both the Business Process Services and Enabled IT Services Streams if the referenced Assignment involved Roles in both Streams.

Proponents must forward a copy of the Reference Check Questionnaire form (Appendix F) to each referee and obtain the required reference information. The completed forms duly signed by an authorized signing officer of each referee must be submitted along with the Proponent's Proposal. MBS reserves the right to contact referees to verify the information provided.

3.3.6 **Mandatory Requirements Checklist (Appendix G)**

This checklist must be completed by the Proponent according to the instructions contained in the form. The Proponent **must check(✓) and initial** the appropriate column (Comply or Do Not Comply) beside each mandatory requirement to indicate compliance or non-compliance with the stated requirement and must also set out the page number in the Proposal where evidence may be found to demonstrate the compliance or non-compliance. This form also indicates certain technical Mandatory Requirements that Proponents must satisfy in order to proceed to Stage II of the evaluation process.

3.3.7 **Insurance Declaration Form (Appendix H)**

This form must be completed by the Proponent according to the instructions contained in that form.

3.3.8 **Service Streams and Geographic Regions Checklist (Appendix I)**

This form must be completed by the Proponent according to the instructions contained in that form.

3.3.9 **Financial Strength and Stability of the Proponent**

All Proponents **must** provide the following information with their Proposal:

a)   Financial statements for the past two years for the Proponent (or consolidated financial statements for the past two years for any controlling entity if the Proponent does not report separately);

b)   **If the Proponent is a consortium or joint venture:** the identity of the prime contracting party within the consortium or joint venture ("Prime"); a business profile detailing principal businesses and corporate directions of each member entity; the role of the Prime and other member entities; the management, ownership, financial and legal relationships between the entities which comprise the consortium or joint venture; how the members of the consortium or joint venture are organized as a team responding to this RFP.

c)   **If the Proponent is a consortium or joint venture:** financial statements for the past 2 years for the Prime and any member entity in the consortium or joint venture which directly shares in the financial risks of the contract. Where any member entity of the consortium or joint venture except the Prime has been in business for fewer than 2 years, such entity will provide its most recent interim financial statement(s) and other financial information as appropriate to provide sufficient evidence of its financial strength and stability.

MBS reserves the right to verify and review this information to assess the financial viability of the Proponent.

Only those Proposals that are deemed by MBS to satisfy <u>all</u> Stage I – Mandatory Submission Requirements and other Mandatory Requirements will proceed to the Stage II evaluation.

3.4   Stage II - Evaluation of the Rated Criteria – Proponent's Experience and Qualifications (50 Points)

3.4.1   Stage II evaluation will be conducted for each Proposal that satisfies the Stage I Mandatory Submission Requirements and other Mandatory Requirements.

3.4.2   In Stage II of the evaluation process, MBS will evaluate the Proponent's capacity, as demonstrated in its Proposal, to fulfil the Roles for which it is submitting a Proposal, and to provide and manage the resources it proposes for the Roles for which it is submitting a Proposal. Proponents are required to refer to Appendices L and M of this RFP for a detailed list of the Roles for each Service Stream.

3.4.3   Proponents shall submit the following information, which is to be evaluated in Stage II. The information provided by Proponents must be thorough and complete, yet succinct.

i. *Project Experience (5 points of 50 points)*

The Proponent shall state the total number of ESD projects and approximate total dollar value of these projects completed during the last 2 years, that involved the provision of Business Process Services and/or Enabled IT Services as described herein, depending on the Service Stream(s) for which the Proponent is proposing resources.

The Proponent shall also provide in its Proposal the names, addresses and telephone numbers of clients and the commencement and completion dates for two (2) to five (5) ESD projects completed by the Proponent during the last two (2) years.

Business Process projects are projects where the Proponent's role involved:

- An assessment of the current state of the business processes of an organization or system;
- Re-engineering of business processes;
- Strategic planning;
- Change management;
- Developing the content for new delivery channels.

Enabled IT projects are projects where the Proponent's role involved:

- Provision of Information Technology and Information Management services in an online environment with consulting roles similar to those identified in Appendix M;
- Assignment durations of at least 60 calendar days;

ii. *Assignment Profiles (15 points of 50 points)*

A Proponent that bids for any Role or Roles in the Business Process Services Stream shall include in its Proposal a profile ("Assignment Profile"), as described below, of each of two (2) significant assignments completed over the last two (2) years involving Business Process Services. A Proponent that bids for any Role or Roles in the Enabled IT Services Stream shall include in its Proposal an Assignment Profile for each of two (2) significant assignments completed over the last two (2) years involving Enabled IT Services in each Enabled IT Services Sub-stream for which the Proposal is being submitted. (e.g., If a Proponent is submitting a proposal for one (1) Role in the Business Process Services Stream and various Roles falling within four (4) of the Enabled IT Services sub-Streams, the requirement will be for two (2) Assignment Profiles for the Business Process Services Stream and two (2) Assignment Profiles for each of the four (4) Enabled IT Services sub-Streams. Therefore, in this example there would be a total of ten (10) Assignment Profiles required.)

Each Assignment Profiled must demonstrate the Proponent's experience and ability in performing the Roles on which it is bidding and shall indicate:

(i)   Name and address of client for whom the assignment was undertaken;
(ii)   Contact person and telephone number;
(iii)   Type of services provided, consulting roles assigned and experience gained by the Proponent's resources supplied in connection with the assignment;
(iv)   Evidence of required general and technical skills (see Appendices L and M) required for the Roles for which the Proposal is submitted;
(v)   Number of personnel involved in each assignment;
(vi)   Duration of the assignment;
(vii)   Outcomes and critical success factors.

Each Assignment Profile must be a maximum of three (3) pages in length.

The assignments referred to in the Assignment Profiles must have been performed for the referees whose Reference Check Questionnaire Forms are provided pursuant to section 3.3.5.

MBS reserves the right to contact references to verify the information provided.

iii.   *Resources Plan (15 points of 50 points)*

The Proponent shall include in the Proposal a plan describing how it intends to manage the resources working on Client projects. This plan shall describe how the Proponent will:
- Manage resources that might be offsite for lengthy periods of time;
- Deal with the issue of staff turnover;
- Retain resources and indicate the turnaround time to replace resources;
- Maintain and develop the knowledge and expertise of the resources;
- Identify any staffing-related risks the Proponent envisions and how those risks will be managed; and
- Clearly indicate if subcontracted resources will be used for any of the Roles proposed.

If resources are to be subcontracted, the plan shall identify which Roles will be fulfilled by subcontractors and how these resources will be managed.

iv.   *Quality Management Plan (15 points of 50 points)*

The Proponent shall include a Quality Management Plan. The Plan must:
- Describe how the Proponent intends to ensure the quality of the work produced by the proposed resources;
- Describe the quality planning, quality assurance and quality control processes used by the Proponent;

- Describe the inputs, outputs and tools/techniques used for each of these three stages in quality management; and
- Discuss the unique quality management issues that Assignments under a VOR arrangement resulting from this RFP might pose, and indicate how these issues would be overcome or managed to ensure quality of final work products for Clients.

3.4.4   The types of service the Proponent offers and consulting roles shall correspond to those Roles listed in Appendices L and M for which the Proponent is proposing to do business.

3.4.5   **The maximum total point allocation for Stage II is 50 points. Proposals must obtain a minimum score of 30 points to proceed to Stage III of the evaluation process. A Proponent whose Proposal does not receive a minimum of 30 points will be disqualified and not evaluated further.**

3.5   Stage III – Evaluation of Prices – Per Diem Rates (50 Points)

3.5.1   The pricing evaluation will be carried out separately for each Role listed in Appendices L and M within the two Service Streams within each Geographic Region. For the purposes of the pricing evaluation the Per Diem Rates proposed for the initial two-year term of the Agreement shall be used. For each of the Roles on which Proponents are bidding, Proponents are required to bid one (1) Per Diem Rate (e.g., $25) only per cell on the Rate Bid Form. Proposals showing a range of Per Diem Rates (e.g., $25 - $40) in any one particular box for any particular Role, will be disqualified for that particular Role. Each Proponent's proposed Per Diem Rate for each Role in each Geographic Region will be assigned points based on the percentage that the Per Diem Rate is higher than the average of the two (2) lowest Per Diem Rates bid for that Role in the same Geographic Region, in accordance with Table 3.2 below. Proponents must insert "NB" (No Bid) in cells where Per Diem Rates are not being proposed.

Example of Determination of Averages of Two Lowest Bids

If the lowest bid, for a particular Role in a particular Geographic Region, is $100 per diem and the second lowest bid is $150 per diem, the average of the two bids is $125. The two lowest bids ($100 and $150) would each receive 50 points. All other bids for this Role in the particular Geographic Region would be rated against the $125 figure; e.g., a $185 bid, which is 48% higher, would receive 45 points; a $200 bid, which is 60% higher, would receive 40 points. A $687 bid which is 550% higher, would receive zero (0) points.

Any Per Diem Rate that is more than 500% higher than the average of the two lowest bids will receive a score of zero points out of the 50 points available and be disqualified from further evaluation. See table below.

Table 3.2 – Allocation of Pricing Points

% Higher than the average of the two lowest bids	Points awarded
Two lowest bids	50
Within 50%	45
Between 51% and150%	40
Between 151% and 250%	30
Between 251% and 350%	20
Between 351% and 500%	10
Greater than 500%	0 (disqualified)

3.6 Determining Successful Proponents

To determine successful Proponents for each Role, in a particular Geographic Region, the scores for Stages II and III will be added together to arrive at a Grand Total Score for the Role. Proponents will be deemed successful for a particular Role, in a particular Stream, in a particular Geographic Region, if the Grand Total Score for that Role is 50 points or more out of the 100 points available, providing that the Proponent has not been disqualified on the Evaluation of Prices.

A Proponent receiving a Grand Total Score of less than 50 in any Role, in a particular Stream, in a particular Geographic Region will be declared unsuccessful for that particular Role in that Geographic Region.

Grand Total Score for each Role = Stage II Score + Stage III Score

3.7 Proposal Format

In order to facilitate the review and evaluation of Proposals, Proponents shall use the following format for their Proposals:

- Each Proposal shall be prepared with an emphasis on completeness and clarity;
- Proposals shall include an executive summary;
- All pages of the Proposal document must be consecutively numbered;

- The Proposal must address each of the stated requirements, point by point and in the same order as set out in the RFP.

3.7.1   The Proposal must contain a table of contents at the beginning of the document that indicates page references for each section and also for sub-sections.

3.7.2   Section 1 – This section shall consist of general contact information. MBS requires a clear statement to identify the Proponent and a description of its business structure (e.g., sole proprietor, partnership, corporation, consortium or joint venture). In the case of a consortium, joint venture or partnership, identify the lead member, co-venturer or partner. The Proponent's municipal address, telephone and fax numbers and e-mail address shall be clearly indicated. Indicate a single point of contact for MBS who is authorized to speak for the Proponent on matters pertaining to the Proposal, and this person's telephone/fax number and e-mail address.

3.7.3   Section 2 – This section shall include all of the <u>completed</u> forms required of the Proponent for the Stage I Mandatory Requirements screening.   This includes the <u>completed</u> hardcopy version of the Proponent's Rate Bid Form, Appendix D.

3.7.4   Section 3 – This section shall contain the Proponent's response to Stage II-Evaluation of Rated Criteria – Proponent's Experience and Qualifications.

3.7.5   Appendices – Appendices shall contain any supporting materials or documents for Sections 2 and 3, and be clearly labeled showing which point in these sections the material is addressing.

4.0 TERMS AND CONDITIONS OF THE RFP PROCESS

4.1 General Information and Instructions

4.1.1 Timetable

The following is the schedule for this RFP:

Issue date of RFP	**Tuesday November 20, 2001**
Proponent Information Briefing (Non-Mandatory)	**10:00 a.m. to 12:00 noon** **November 28, 2001** **Days Inn and Conference Centre** **Wellesley Room** **30 Carlton Street** **Toronto, Ontario**
Proponents' Deadline for Questions	**4:00 p.m., local Toronto time Friday November 30, 2001**
Deadline for Issuing Addenda	**Thursday December 13, 2001**
Proposal Submission Deadline (closing time and date)	**10:00 a.m. Friday December 21, 2001, local Toronto time**
Period for Which Proposals are Irrevocable after Proposal Submission Deadline	**150 days**

4.1.2 **Definitions**

Unless otherwise specified in this RFP, capitalized words and phrases have their prescribed meaning set out in this RFP and in the form of Agreement attached as Appendix A.

In this RFP, the following words and phrases have the following meanings:

"Business Process Services Stream" means the Services described in Section 2.1 and Appendix L of this RFP.

"Closing Date" and **"Proposal Submission Deadline"** mean the deadline by which all proposals must be received as set out in section 4.1.1 of the RFP.

"Enabled IT Services Stream" means the Services described in Section 2.2 and Appendix M of this RFP.

"Mandatory Requirements" mean those requirements outlined in Section 3.3 of this RFP that a Proponent must satisfy in order to have its Proposal evaluated.

"MBS" means the Management Board Secretariat.

"Must" and **"shall**" indicate a Mandatory Requirement that must, in the view of MBS, be substantially completed and complied with for a Proposal not to be rejected.

"Per Diem Rates" mean the rates quoted by a Proponent based on a minimum of 7.25 hours per day.

"Proponent" means a legal entity that submits a Proposal in response to this RFP.

"Proposal" means the response by a Proponent to this RFP.

"Rated Criteria" are those requirements described in Sections 3.4 and 3.5 of this RFP, which a Proponent must address in its Proposal.

"Request for Proposals" or **"RFP"** means this document in its entirety and any addenda to it.

"Role" means a consulting service provided by an individual who possesses the experience and competencies, and assumes the responsibilities as classified and described in Appendices L and M.

"Services" mean the services described in this RFP.

"Service Stream" means the Business Process Services Stream and the Enabled IT Services Stream described in Sections 2.1 and 2.2 of this RFP.

"Agreement" means the Agreement between MBS and each selected Proponent that may result from this RFP establishing the Vendor of Record arrangement.

"Will" and **"should"** indicate a requirement that MBS would like the Proponent to address in its Proposal.

"Vendor of Record" or **"Vendor"** means a Proponent that has been selected by MBS in accordance with this RFP for the provision of a particular Service and that has, together with MBS, executed an Agreement in accordance with this RFP.

4.1.3   **Proponents to Follow Instructions**

Proponents shall structure their Proposals in accordance with the instructions in this RFP. Where information is requested in this RFP, any response made in a Proposal shall reference the applicable section numbers of the RFP where that request was made.

4.1.4   **Proponents to Obtain RFP Only Through MERX**

This RFP is available only through MERX, the electronic tendering system used by the Province of Ontario. For further information about MERX, call 1-800-964-MERX or visit the MERX website at www.merx.cebra.com.

A Proponent that has not obtained this RFP through MERX will have its Proposal disqualified unless a third party has requested this RFP from MERX on that Proponent's behalf and that Proponent has identified the third party on the Label of its Proposal. If a Proponent that has obtained this RFP from a third party fails to identify that third party in this manner, that Proponent's Proposal will be disqualified.

4.2   Communication after Issuance of RFP

4.2.1   Proponents shall promptly examine all of the documents comprising this RFP and:

        (1)   Shall report any errors, omissions or ambiguities; and

        (2)   May direct questions or seek additional information by fax on or before the Deadline for Questions by Proponents to the MBS Contact. No such communications are to be directed to anyone other than the MBS' Contact. MBS is under no obligation to provide additional information but may do so at its sole discretion.

MBS and its advisors do not make any representation, warranty or guarantee as to the accuracy of the information contained in the RFP or issued by way of addenda.

It is the Proponent's responsibility to avail itself of all the necessary information to prepare a Proposal in response to this RFP.

4.2.2   Proponents may, but are not required to, attend a Proponent Information Briefing which will take place at the place and time set out at s. 4.1.1 of this RFP.

The briefing will provide an opportunity for Proponents to enhance their understanding of the RFP requirements.

Each Proponent will be allowed two (2) attendees.

Any changes to the briefing meeting date will be issued in an addendum.
All attendees <u>must</u> register their attendance at the meeting, noting the full legal name of the Proponent whom they represent.

4.2.3   Proponents shall direct all questions regarding this RFP, in writing by fax on or before the Proponents' Deadline for Questions set out at Section 4.1.1 of this RFP to the **MBS Contact:**

> Judy George-Harris
> Senior Technology Procurement Manager
> Facsimile No.: (416) 327-3573

4.2.4   **Addenda or Amendments to Proposal Opportunities from the Government of Ontario**

This RFP may only be amended by addenda, in accordance with this section.

If MBS, for any reason, determines that it is necessary to provide additional information relating to this RFP, such information will be communicated to all Proponents by addenda by way of MERX. Each addendum shall form an integral part of this RFP.

Such addenda may contain important information including significant changes to this RFP. Proponents are responsible for obtaining all addenda issued by MBS. In the space provided in the Form of Offer, Proponents shall confirm their receipt of all addenda by setting out the number of each addendum in the space provided in the Form of Offer.

MBS is aware that Proponents can, at any time while a particular opportunity is open on MERX, receive the initial RFP document through MERX and then, by deselecting the Auto Update feature of MERX's document ordering system or contacting the MERX Call Centre, forgo receipt of subsequent addenda or amendments. Proponents who do so risk not receiving all of the relevant documentation required to respond to the particular opportunity.

Proponents who intend to respond to procurement opportunities of MBS are requested not to cancel the receipt of addenda or amendments, since they must obtain all of the information documents that are issued through MERX by MBS.

Should a Proponent choose to cancel the receipt of addenda or amendments, its Proposal may be rejected by MBS, depending upon how material or integral (as determined by MBS) the addenda or amendments are to the scope of the Proposal and Proponent's pricing.

4.2.5   **Post-Deadline Addenda and Extension of Proposal Submission Deadline**

If any addendum is issued before or after the Deadline for Issuing Addenda, MBS may at its discretion extend the Proposal Submission Deadline, for a reasonable amount of time.

4.3   Submission of Proposals

4.3.1   Proposals Submitted Only in Prescribed Manner

Proposals must be submitted by the following method:

Proponent must submit its Proposal as follows:

· **One (1) original Proposal (HARD COPY) including all Appendices except Rate Bid Form (Appendix D); and**
· **One (1) electronic copy in Microsoft Word 97 format of the Proposal including all Appendices except Rate Bid Form (Appendix D) on diskette or CD; a separate file on the <u>same</u> diskette or CD should contain only the completed Rate Bid Form in Microsoft Excel 97 format; and**
· **Six (6) hard photocopies of the Proposal, including all Appendices except Rate Bid Form (Appendix D); and**
· **One (1) original Rate Bid Form (HARD COPY), Appendix D.**

The hard copy Rate Bid Form (Appendix D) MUST be identical to and in the same format as the electronic copy provided by the Proponent on the diskette or CD. <u>The content and format provided on the diskette or CD must not be altered from the hard copy</u>.

The Proposal must be submitted in a sealed package identified with the full legal name and return address of the Proponent, using the Proposal submission label shown in **Appendix "K".** The Proponent must ensure that the RFP Number is also written on the back of each of its Proposal envelopes/boxes. The Proposal must be submitted by the Proposal Submission Deadline.

Proposals **must be submitted** to the following address and to the attention of the following person:

> Management Board Secretariat
> Procurement Policy & Information Technology Procurement Branch
> c/o Government Mail and Print Services
> Mailroom, Room M2B-88, Macdonald Block
> Second Basement, 77 Wellesley St. West
> Toronto, Ontario M7A 1N3
>
> Attention: **Judy George-Harris**
> **Senior Technology Procurement Manager**

Proposals submitted in any other manner will be disqualified.

4.3.2   **Proposals Must Be Submitted On Time at Prescribed Location**

Proposals must be submitted at the location set out above on or before the Proposal Submission Deadline. Proposals submitted after the Proposal Submission Deadline will be considered to be late and will be disqualified and returned unopened to the Proponent.

4.3.3   **Excusable Delay**

In the event of an excusable delay, MBS may, in its sole discretion, extend any one or more of the dates and times set out in Section 4.1.1.

Excusable delay as used in this section means any delay caused by an event of *force majeure* which shall:

   a) include but not be limited to acts of God, acts of war, riots, epidemics, fires, strikes, labour disruptions or lockouts: and

   b) not include traffic delays/accidents, inclement weather, or any failure by a third party to deliver the RFP by the Proposal Submission Deadline.

4.3.4   **Amending or Withdrawing Proposals Prior to Proposal Submission Deadline**

At any time prior to the Proposal Submission Deadline, a Proponent may amend or withdraw a submitted Proposal. The right of a Proponent to amend or withdraw includes amendments or withdrawals wholly initiated by a Proponent and amendments or withdrawals in response to subsequent information provided by MBS.

Any amendment shall clearly indicate what part of the Proposal the amendment is intending to replace.

Any amendment or notice of withdrawal must be submitted in the same manner as prescribed in Section 4.3 of this RFP for the submission of Proposals. Any amendment or notice of withdrawal submitted by any other method will not be accepted.

4.3.5   **Proposal Irrevocable after Proposal Submission Deadline**

Proposals **shall** remain irrevocable in the form submitted by the Proponent for a period of **one hundred and fifty days (150)** days beginning from the moment that the Proposal Submission Deadline has lapsed.

4.3.6   **MBS May Seek Clarifications and Incorporate Responses into Proposal**

MBS reserves the right to seek clarifications and supplementary information from Proponents after the Proposal Submission Deadline. The responses received by MBS from a Proponent shall, if accepted by MBS, form an integral part of that Proponent's Proposal.

4.3.7 RFP Incorporated into Proposal

All of the provisions of this RFP are deemed to be accepted by each Proponent and incorporated into each Proponent's Proposal without alteration, reservation or modification.

4.3.8 Proposal Property of MBS

Except where expressly set out to the contrary in this RFP, the Proposal and any accompanying documentation submitted by a Proponent shall become the property of MBS and shall not be returned.

4.3.9 Compliance with Applicable Laws

It is a condition of the Agreement that the successful Proponents comply with all applicable laws of Ontario and Canada, including the *Occupational Health and Safety Act* (Ontario), *the Ontario Human Rights Code*, and the *Pay Equity Act* (Ontario).

4.4 Execution of Agreement

4.4.1 Selection of Proponents

MBS anticipates that Proponents will be selected by MBS within one hundred and fifty (150) Days of the Proposal Submission Deadline. Notice of selection by MBS to the selected Proponents will be in writing. The selected Proponents shall execute the Agreement in form and content substantially similar to Appendix A and satisfy any other applicable conditions of this RFP within thirty (30) days of notice of selection. **Proponents are reminded of their obligations in this regard as set out in Section 1.1 of this RFP.**

If a successful Proponent is a consortium or joint venture, the Agreement will be between MBS and the Prime (as defined in Section 3.3.7) on behalf of the consortium or joint venture. The other entity-members of the consortium or joint venture, therefore, will not be signatories to the Agreement.

4.4.2 Failure to Enter Agreement

In addition to all of MBS' other remedies, if a selected Proponent fails to execute the Agreement or satisfy any other applicable conditions within **thirty (30)** days of notice of selection, MBS may, in its sole and absolute discretion and without incurring any liability, rescind the selection

of that Proponent.

4.4.3   Notification of Award and Debriefing

Once the Agreements are executed by the successful Proponents and MBS, the names of the successful Proponents will be posted by MBS on MERX. The unsuccessful Proponents will be notified by MBS. If requested in writing by a Proponent, MBS will provide a debriefing of MBS' evaluation of that Proponent's Proposal.

4.5   Prohibited Communications & Confidential Information

4.5.1   Prohibited Proponent Communications

Any attempt on the part of any Proponent or any of its employees, agents, contractors or representatives to contact any person other than the MBS Contact with respect to this RFP, will be grounds for disqualification. Without limiting the generality of the foregoing, no attempt will be made to contact any member of MBS' evaluation team, any expert or other adviser assisting MBS' evaluation team, any staff of MBS offices, any staff of the Premier's Office or Cabinet Office or any members of Cabinet or their staff.

In such event, and without any liability, MBS may, in its sole and absolute discretion, in addition to any other remedies available at law, revoke the Proponent's status as a Proponent and reject any potential or actual Proposal submitted by the Proponent.

4.5.2   Proponent Not to Communicate with Media

A Proponent may not at any time directly or indirectly communicate with the media in relation to this RFP or any contract awarded pursuant to this RFP without first obtaining the written permission of the MBS' Contact.

4.5.3   Confidential Information of MBS

All information provided by or obtained from MBS in any form in connection with this RFP either before and/or after the issuance of this RFP:

(i)   is the sole property of MBS and must be treated as confidential;

(ii)   is not to be used for any purpose other than replying to this RFP and the performance of any subsequent Agreement;

(iii)   must not be disclosed without prior written authorization from MBS; and

(iv)   shall be returned by the Proponents to MBS immediately upon the request of MBS.

4.5.4   **MBS Subject to the Freedom of Information and Protection of Privacy Act**

Information provided by a Proponent may be released in accordance with *the Freedom of Information and Protection of Privacy Act* R.S.O. 1990, c.F.31, as amended. A Proponent **shall** identify any information in its Proposal or any accompanying documentation for which confidentiality is to be maintained by MBS.

The confidentiality of such information will be maintained by MBS, except where an order by the Information and Privacy Commission or a court requires MBS to do otherwise.

4.6   Rights of MBS

4.6.1   In addition to any other express rights or any other rights which may be implied in the circumstances, MBS reserves the right to:

(i)   make public the names of any or all Proponents;

(ii)   request written clarification or the submission of supplementary written information from any Proponent;

(iii)   waive formalities and accept Proposals which substantially comply with the requirements of this RFP;

(iv)   verify with any Proponent or with a third party any information set out in a Proposal;

(v)   check references other than those provided by any Proponent;

(vi)   disqualify any Proponent whose Proposal contains misrepresentations or any other inaccurate or misleading information, or on the basis of references or financial information provided by the Proponent or otherwise obtained by MBS;

(vii)   disqualify any Proponent or the Proposal of any Proponent who has engaged in conduct prohibited by this RFP;

(viii)   make changes, including substantial changes, to this RFP provided that those changes are issued by way of addenda in the manner set out in this RFP;

(ix)   accept or reject a Proposal if only one Proposal is submitted;

(x)   select any Proponent other than the Proponent whose Proposal reflects the lowest cost to

MBS;

(xi)   cancel this RFP process at any stage;

(xii)   cancel this RFP process at any stage and issue a new RFP for the same or similar services;

(xiii) accept any Proposal in whole or in part;

(xiv)   discuss with any Proponent different or additional terms to those contemplated in this RFP or in any Proponent's Proposal;

(xv)   reject any or all Proposals in its absolute discretion;

and MBS shall not be liable for any expenses, costs, losses or any direct or indirect damages incurred or suffered by any Proponent or any third party resulting from MBS exercising any of its express rights under this RFP or exercising any rights which may be implied in the circumstances.

By submitting its Proposal, the Proponent authorizes the collection by MBS of the information set out under subparagraphs (iv) and (v) in the manner contemplated in those subparagraphs.

4.7   Governing Law of RFP Process

This RFP process shall be governed by and construed in accordance with the laws of the Province of Ontario and the federal laws of Canada applicable therein.

APPENDIX A

FORM OF AGREEMENT

THIS AGREEMENT made in duplicate as of [DATE]

BETWEEN: **HER MAJESTY THE QUEEN** in right of
                  Ontario as represented by the Chair of
                  the Management Board of Cabinet

                  (hereinafter called "MBS")

AND:

                  (hereinafter called the "Vendor")

WITNESSETH that in consideration of the mutual promises and obligations contained in the Contract, MBS and the Vendor covenant and agree as follows:

Article 1 - Definitions

1.1   When used in the Contract, the following words or expressions have the meaning hereinafter set forth:

"Agency" means all Ontario Agencies classified as Schedules I & IV on February 1, 2000 and all Ontario advisory, adjudicative, regulatory (excluding those with governing boards) Agencies created after February 1, 2000, the list for which is found at http://www.ppitpb.gov.on.ca

"Assignment" means any assignment of Services requested in writing by a Client from the Vendor and is further described in Article 4;

"Authority" means any governmental authority, quasi-governmental authority, agency body or department whether federal, provincial or municipal, having or claiming jurisdiction over the Service; and **"Authorities"** mean all such authorities, agencies, bodies and departments;

"Business Day" means any working day, Monday to Friday inclusive, excluding statutory and other Ontario Provincial Government holidays or day(s) which the Ontario Provincial

Government has elected not to be open for business. The statutory days are:

> New Year's Day; Good Friday; Easter Monday; Victoria Day; Canada Day; Civic Holiday; Labour Day; Thanksgiving Day; Remembrance Day; Christmas Day; Boxing Day; and any day which the Government of the Province of Ontario has elected to be closed;

"Business Hours" mean 8:30 a.m. to 4:30 p.m. or such other hours specified by the Client in an Assignment to comprise a Business Day;

"Change Order" means a change to the Services as authorized by a Client that may include altering, adding to, or deleting any of the Services, as further described in Article 4 of the Agreement;

"Client" means the relevant Ontario Ministries and Agencies classified as Schedules I & IV on February 1, 2000 and all advisory, adjudicative, regulatory (excluding those with governing boards), and operational service agencies created after February 1, 2000, requesting the provision of Services from the Vendor through an Assignment. The listings of Ministries and Schedule I& IV Agencies can be found on the website of Procurement Policy & Information Technology Procurement Branch (PPITPB) of MBS at http://www.ppitpb.gov.on.ca

"**Client Confidential Information**" means all information or material of a Client that is of a proprietary or confidential nature, regardless whether it is identified as proprietary or confidential or not, including but not limited to information and material of every kind and description which is communicated to or comes into the possession or control of the Vendor at any time.

> "Client Confidential Information" shall not include information that

> (i)   is or becomes generally available to the public without fault or breach on the part of the Vendor, including without limitation without breach of any duty of confidentiality owed by the Vendor to a Client or to any third party, but only after that information becomes generally available to the public;
> (ii)   the Vendor can demonstrate to have been rightfully obtained by the Vendor from a third party who had the right to transfer or disclose it to the Vendor free of any obligation of confidence;
> (iii)   the Vendor can demonstrate to have been rightfully known to or in the possession of the Vendor at the time of disclosure free of any obligation of confidence; or
> (iv)   is independently developed by the Vendor without use of any Client Confidential Information.

> The Vendor may disclose Client Confidential Information if required by law, provided that the Vendor takes reasonable steps to give the Client sufficient prior notice in order to contest such requirement by notifying the Client of such requirement to disclose;

"Client Data" means any and all data and information in any form which is the property of or in the possession, custody or control of a Client, and includes but is not limited to Client Confidential Information and Personal Information and all records, information or data of any kind contained in or on any database or electronic information storage system or media owned or controlled by or in the custody of a Client;

"Commencement Date" means *;

"**Contract"** means this Vendor of Record (VOR) Agreement **MBS-ESD-01** which comprises:

       (i)   this Agreement;
       (ii)   Schedule 1 - Schedule of Services;
       (iii)   Schedule 2 - The Rates;
       (iv)   Schedule 3 - Assignment of Copyright Form;
       (v)   any and all changes to the Contract made during the Term of the Contract;
       (vi)   the applicable provisions of the Request for Proposal; and
       (vii)   the applicable provisions of the Proposal;

"**Deliverables**" means any and all deliverables, concepts, techniques, ideas, information, documentation and other materials, however recorded, developed for or provided to the Client by the Vendor or its employees, volunteers, agents or Subcontractors in the course of performing the Services;

"Government Standards" means technical, security, privacy and design element standards relating to information and information technology as may be created or revised by the Province of Ontario, MBS or Clients from time to time;

 "**Intellectual Property Right**" means any intellectual or industrial property right in or for any of the Deliverables including without limitation, any copyright, patent, trademark or trade secret;

"MBS Representative" and **"MBS Backup Representative"** mean the individuals named as such in Section 1.5 of this Agreement and any other individuals so designated from time to time, for the purpose of administering the Contract;

"Ministry" means any ministry of the Province of Ontario. The list of all the Ministries is found at http://www.ppitpb.gov.on.ca

"Per Diem" means a rate based upon a minimum of 7.25 hours per day;

"Person" if the context allows, includes any persons, firms, partnerships or corporations or any combination thereof;

"Personal Information" has the meaning ascribed to it in the *Freedom of Information and*

Protection of Privacy Act, that is, recorded information about an identifiable individual, regardless whether recorded in print form, on file, by electronic means or otherwise;

"Proposal" means all the documentation the Vendor has submitted in response to the Request for Proposal, which has been accepted by MBS in whole or in part;

"Rates" refer to the applicable charge for the particular Services and are set out in Schedule 2 of this Agreement. Rates include all charges for labour, materials, insurance, overhead and incidental expenses related to the Services. "Rates" do not include travel, meal & accommodation expenses and shall be billed separately and charged in accordance with *Management Board Secretariat's Operating Policy for Travel Management and General Expenses,* as may be amended from time to time;

"Reporting Period" means any one (1) calendar month;

"Request for Proposal" or **"RFP"** means the Request for Proposal having the reference number RFP# MBS-ESD-01, and any addenda thereto issued by MBS;

"Requirements of Law" mean all applicable requirements, laws, statutes, codes, acts, ordinances, orders, decrees, injunctions, by-laws, rules, regulations, official plans, permits, licenses, authorizations, directions, and agreements with all Authorities, that now or at any time hereafter may be applicable to the Vendor, the Contract or the Services or any part thereof;

"Service Level Agreement" or **"SLA"** means any service level agreement entered into between the Vendor and a Client pursuant to the Contract;

"Subcontractor" means any Person having a contract with the Vendor for the execution of a part or parts of the Services;

"Term" means the period of time beginning on the Commencement Date and continuing for as long as this Agreement remains in effect;

"Vendor Confidential Information" means all information or material of the Vendor that is of a proprietary or confidential nature, regardless whether it is identified as proprietary or confidential or not, including but not limited to information and material of every kind and description which is communicated to or comes into the possession or control of MBS or a Client at any time;

"Vendor Confidential Information" shall not include information that:

(i)   is or becomes generally available to the public without fault or breach on the part of MBS or a Client, including without limitation without breach of any duty of confidentiality owed by MBS or a Client to the Vendor or to any third party, but only after that information becomes generally available to the public;

(ii)   MBS or a Client can demonstrate to have been rightfully obtained by MBS or the Client from a third party who had the right to transfer or disclose it to MBS or the Client free of any obligation of confidence;

(iii)   MBS or Client can demonstrate to have been rightfully known to or in the possession of MBS or the Client at the time of disclosure free of any obligation of confidence; or

(iv)   is independently developed by MBS or a Client without use of any Client Confidential Information.

MBS or Client may disclose Vendor Confidential Information if required by law, provided that MBS or the Client take reasonable steps to give the Vendor sufficient prior notice in order to contest such requirement by notifying the Vendor of such requirement to disclose.

1.2   **Address for Service of Notice on MBS:**

All notices to MBS under this Agreement shall be in writing and shall be sent to the MBS Representative or to the MBS Backup Representative if so designated, at the addresses set out in Section 1.5 below.

1.3   **Address for Service of Notice on Vendor:**

All notices to Vendors under this Agreement shall be in writing and shall be sent to the Vendor or to the Backup Representative if so designated:

Name : [ ]
Address: [ ]
Telephone Number: [ ]
Facsimile Number: [ ]

1.4   **Contact for the Vendor:**

Name   [ ]
Telephone Number: [ ]
Facsimile Number: [ ]

1.5   **MBS Representative:**

Neil Sentance
Director
Management Board Secretariat
Procurement Policy & IT Procurement Branch
6th Floor, Ferguson Block
77 Wellesley Street West
Toronto, Ontario

M7A 1N3

MBS Backup Representative:

Wes Lapish,
Manager, IT Procurement Planning
Management Board Secretariat
Procurement Policy and IT Procurement Branch
6th Floor, Ferguson Block
77 Wellesley Street West
Toronto, Ontario
M7A 1N3

1.6 This Contract and the provision of the Services shall be governed by the laws of the Province of Ontario and the applicable laws of Canada.

Article 2 -Vendor's Responsibilities

2.1 **Delivery of Services -** The Vendor shall do everything that the Contract requires it to do as described in the Contract. In addition to performing the Services, the Vendor shall also supply the labour which can reasonably be understood or inferred to be included within the scope of the Contract. It shall also supply all administrative functions and other Services as are customarily furnished by vendors supplying Services of the type provided hereunder in similar situations in Ontario.

2.2 The Vendor shall provide all Services in compliance with Government Standards and all Deliverables shall comply with Government Standards. The Client shall be responsible for bringing the Government Standards and changes thereto to the attention of the Vendor, after which the Vendor will be responsible for complying with them.

2.3 **Inspection** - The Vendor shall furnish the Client with reasonable access to and assistance in inspecting any Deliverables to be provided to the Client in connection with any Assignment and for ascertaining that such Deliverables are in accordance with the provisions and requirements of the Contract and the relevant SLA.

The inspection of any Deliverables by the Client shall not relieve the Vendor of any of its obligations to fulfil or comply with the terms of the Contract or the relevant SLA. No breach by the Vendor will be waived or deemed to have been waived by any inspection by the Client hereunder.

Failure by a Client to inspect any Deliverables or any part thereof shall not constitute a waiver of any of the rights of the Client hereunder. Inspection not followed by notice of breach shall not constitute a waiver of any breach nor shall it constitute an acknowledgement that there has been or will be compliance with the Contract or the relevant SLA.

2.4   **Acceptance Testing -** Each Deliverable shall be subject to acceptance by the Client. Acceptance of a Deliverable will only occur when that Deliverable has been accepted pursuant to the applicable acceptance test set out in the SLA, or where no acceptance test is set out in the SLA, in accordance with Sections 2.5 to 2.13 below. In the case of any Deliverable that is subject to an acceptance test, the Vendor will perform the tasks set forth in the SLA in order to complete such acceptance test in a timely manner.

2.5   The acceptance testing of a Deliverable must enable the Client to determine to its reasonable satisfaction:

   (a)   whether there are any defects in any of the elements of the Deliverable or the Deliverable as a whole; and

   (b)   that such Deliverable otherwise conforms to the requirements of the Contract and any relevant SLA.

2.6   When a Deliverable is a component of another Deliverable or must interface with one or more other Deliverables then upon the successful completion of an acceptance test with respect to that Deliverable, the Client will provide a conditional acceptance of that Deliverable, with the Client's final acceptance of that Deliverable being dependent upon obtaining the Client's acceptance of the Deliverable into which that Deliverable is to be integrated or the system of Deliverables within which that Deliverable must function.

Acting reasonably and prior to each Deliverable being ready for acceptance testing, the Vendor and Client will together develop a mutually agreeable acceptance test plan for each Deliverable to undergo acceptance testing (an "Acceptance Test Plan").

The Vendor will give the Client written notice when a Deliverable is ready for acceptance testing.

2.7   Upon the Client's receipt of notice described that a Deliverable is ready for acceptance testing, the Client and the Vendor will review the Acceptance Test Plan to determine if it is still appropriate and mutually agreeable. If the Acceptance Test Plan is no longer appropriate or mutually agreeable, then the Client and the Vendor will modify it so that it is appropriate and mutually agreeable.

Once the Acceptance Test Plan is appropriate and mutually agreeable, then the Client and the Vendor will set a mutually agreeable time for performing the acceptance test. Otherwise, the Client and the Vendor will revise the Acceptance Test Plan so that it is mutually acceptable before setting a mutually agreeable time for performing the acceptance test.

Each Acceptance Test Plan will be set forth in writing and will include but not be limited to:

(a)   the duration of the testing period in Business Days;

(b)   an identification of who will perform the applicable acceptance test;

(c)   a detailed description of how the test and the results will be documented;

(d)   a listing of success criteria; and

(e)   who will be responsible for developing appropriate test data (which will be subject to the reasonable approval of the other party).

2.8   Each Deliverable must meet all applicable requirements set out in the Contract and any relevant SLA. All Deliverables must be consistent with and conform to its specifications. These criteria will be included as success criteria in every Acceptance Test Plan.

2.9   A representative of the Client must be present for every acceptance test.

2.10   Users external to the Client may be used by the Client as testers during any acceptance test.

2.11   As soon as practicable after completion of the test period, the Client shall either certify to the Vendor in writing that the particular acceptance test has been successfully completed, or notify the Vendor of all defects in the Deliverable made apparent to the Client by the acceptance test.

2.12   As promptly as possible, but not later than twenty (20) Business Days following the date of receipt by the Vendor of any such notice of defects, the Vendor shall correct the defects identified in such notice and notify the Client in writing that such corrections have been completed. Upon receipt of such notice by the Client, the applicable acceptance test shall be repeated in accordance with the Acceptance Test Plan and so on from time to time until either the acceptance test is successfully completed or the Client gives written notice to the Vendor of the Client's exercise of its options under Section 2.13 below.

2.13   If a Deliverable which is subject to an acceptance test is not accepted by the Client after the second or any subsequent acceptance test, the Client shall have the option, exercisable by notifying the Vendor within thirty (30) Business Days thereafter, of:

(a)   continuing with the test procedures as contemplated above;

(a) accepting the Deliverable (although of diminished value) as the case may be, at a revised cost acceptable to both the Client and the Vendor; or

(b) terminating the SLA or exercising any other remedies that the Client may have.

2.14   **Monitoring –** MBS and the Client shall have the right to monitor the performance of the Vendor during the Assignment, in any reasonable manner.

Article 3 - MBS Representative and MBS Backup Representative

3.1   MBS hereby designates the individuals named in Section 1.5 of this Agreement as the MBS' Representative and MBS' Backup Representative respectively. MBS may substitute other individuals to be the MBS Representative or MBS Backup Representative, and shall provide notice thereof to the Vendor.

Article 4 – Assignments

4.1   Any Client may request that the Vendor provide any of the Services, by issuing a Notice of Assignment in writing to the Vendor, setting out a full description of the Services, the timeframes, the Rates and any other requirements of the Client for the Assignment. The Client may request the Vendor to review a specified project for the purpose of the Vendor providing the Client with a description of the skills sets required and the estimated duration of each position required to achieve completion of the proposed Assignment within the time frame specified by the Client. An estimate, if requested by the Client, shall be prepared by the Vendor in the manner requested by the Client and at no cost to the Client, subject to the provisions of Section 4.2 below.

4.2   The Vendor may propose the inclusion of a contingency sum in the estimate referred to in Section 4.1 to address the degree of uncertainty and/or risk elements the Vendor assesses in the Assignment. The Client shall not be obligated to accept either the estimate or the proposed contingency sum; or, alternatively, can negotiate the amount allocated for contingency or redefine the work to mitigate/eliminate the elements of uncertainty in the project/task definition.

4.3   The estimate of the quantity of position days required by the proposed Assignment shall be multiplied by the applicable Rates, (plus contingency sum allocations, if applicable) and will become the maximum amount that the Vendor may charge the Client for completing the Assignment.

4.4   The Vendor and Client shall enter into a service level agreement (SLA) for the Assignment, the form for which is attached as Schedule 4. The Vendor shall only be authorized to commence the Services required by the Assignment upon the execution of the SLA by the Vendor and Client. The Vendor and Client are encouraged to make changes or additions to the form of SLA as necessary or appropriate to ensure that the SLA adequately reflects the particular circumstances of an Assignment. However, in the event of a conflict or inconsistency between the SLA and an express provision of this Agreement, this Agreement shall govern (except as may be otherwise expressly contemplated in this Agreement) and the SLA shall be interpreted to have been amended to the extent of the conflict or inconsistency.

4.5   The Vendor shall invoice each Client in accordance with instructions provided in the particular SLA. The Client may require that the Vendor invoice the Client only upon the Vendor's

satisfactory achievement of specific Deliverables or on a monthly progress basis.

4.6   In those cases where the SLA specifies a maximum amount for the particular Services, the Vendor shall invoice the Client on the basis of both the actual number of working days used multiplied by the applicable Rate to the particular maximum amount. Should the Assignment be accomplished with fewer personnel days than included in the maximum amount, the Vendor shall   invoice the Client the actual amount. Should the Assignment require additional working days to   complete which would bring the total cost to the Client to be in excess of the particular maximum amount specified in the SLA, the Vendor shall not invoice the Client for a sum greater   than the particular maximum amount.

4.7   In those cases where the duration of the Assignment is less than one Business Day, the Vendor may charge the Client with the equivalent of a minimum four (4) hours, calculated on a pro-rata basis against the applicable per diem rate, and thereafter for actual personnel hours up to the per diem amount.

4.8   The Client will have the option of retaining a performance holdback on all progress payments to the Vendor of up to 15% of the contract price for the SLA and for a period of up to ninety (90) days following the date the Vendor has otherwise completed the Assignment. The Client will be obliged to disclose to the Vendor, in advance of the particular Assignment, both the need for a performance holdback and the events or tests or other criteria the Services must satisfy for the release of the performance holdback. For Assignments having a performance holdback, the Vendor's obligations to correct deficiencies in the Assignment following completion shall be to remedy any undetected inherent deficiencies in the Assignment, at no cost to the Client, for the six (6) month period immediately following completion of the Assignment. The SLA for each assignment shall set out the mutual agreement of the parties with respect to the acceptance testing, acceptance criteria, cure period, and milestone payments.

4.9   The Vendor warrants in each Assignment that the Services and Deliverables will be free from any and all defects in performance and workmanship and agrees to remedy and correct defects in the Services and Deliverables, to the satisfaction of the Client, at no cost to the Client, for the six (6) month period immediately following completion of the Assignment.

4.10   Any Client may request changes to the particular Assignment, which may include altering, adding to, or deleting any of the Services by issuing a Change Order. The Change Order shall set out the change(s) requested by the Client, with the corresponding Rates. The Vendor shall perform such services in accordance with the Change Order as if they had appeared in and had been part of the SLA. No changes shall be considered in effect or carried out unless the Change Order has been authorized in writing and signed by the Client and accepted by the Vendor. In cases where the Vendor has insufficient resources to perform such services required by the Change Order in accordance with the Client's time requirements set out in the Change Order, the Vendor shall so notify the Client for the Client to make alternative time arrangements therefore. It is understood and agreed that in any case, the Client shall have the right to have another vendor perform such services. In the event that the Client requests in such Change Order that the

Vendor supplies Services for which the Contract has not included corresponding Rates, the Vendor shall perform and provide such Services, and the rate(s) therefore shall be negotiated between the Client and the Vendor within a reasonable period of the date that the Client submits the particular Change Order to the Vendor.

4.11   A Client may, in the circumstances described in a particular SLA, terminate the SLA by sending a written notice to the Vendor of the termination, and Sections 15.6, 15.7 and 15.8 shall apply, except that "MBS" shall be read as "Client" and "Contract" shall be read as "Service Level Agreement". The Client shall be liable to the Vendor only for the Services performed and reasonable expenses incurred as agreed to under the SLA to the effective date of the termination of such SLA.

Article 5 - Personnel

5.1   The Vendor shall be responsible for having qualified personnel for each Assignment and in accordance with specific requirements of each Assignment as set forth in the SLA. The Vendor's continued failure to propose or make available appropriate personnel for Assignments will result in the removal by MBS of the Vendor from the list of qualified vendors established by the RFP. Therefore, it shall be the responsibility of the Vendor to establish the required processes to ensure the appropriateness of proposed personnel for the different Assignments, including that there be sufficient lead time provided to the Vendor. Any additional costs of establishing these processes must not be passed to the Clients and are deemed included in the Rates.

5.2   In the event the Vendor requires personnel, in addition to the personnel identified in the particular SLA to carry out the administrative/supervisory duties identified above, the Vendor shall do so without further charge to the Client.

5.3   The Client may refuse personnel proposed by the Vendor for an Assignment; or may require the Vendor to replace any personnel the Vendor has assigned to an Assignment that the Client deems inappropriate for an Assignment. The Vendor shall propose a suitable replacement(s) for the personnel deemed inappropriate by the Client, within two (2) Business Days. The replacement personnel must possess similar or better qualifications than the personnel being substituted/replaced. In such occurrences, the Vendor may request an extended deadline (if one was defined by the Client). The Vendor shall not charge the Client an additional or higher rate, even if the replacement personnel is of a more senior position specification than the personnel being replaced.

5.4   The Vendor must use best efforts to maintain continuity of any SLA by retaining the same personnel for the duration of each SLA. The Vendor shall not replace any assigned personnel without the respective Client's expressed written consent, which consent shall not be unreasonably withheld.

5.5   The Client will have the option to request that personnel proposed by the Vendor undergo security checks. Only those personnel who obtain clearance shall perform the Services set forth

in the particular SLA.

Article 6 - Description of Services

6.1   The Vendor shall provide the Services as described in Schedule 1 - Schedule of Services, to the Clients from time to time through an SLA.

6.2   All Services shall be provided in accordance with the particular SLA and the Contract, and without limiting the generality of the foregoing the Vendor shall comply with all Requirements of Law, including but not limited to the *Occupational Health & Safety Act* and the *Pay Equity Act*.

6.3   Where by-laws, codes or regulations conflict, the more stringent shall govern.

6.4   The Vendor acknowledges and agrees that MBS (and all Clients) make and have made no representation, warranty, covenant or agreement that any volume or value of Services shall be purchased or requested from the Vendor and the Vendor further acknowledges and agrees that the Vendor shall not be the exclusive provider of the Services to any Client.

Article 7 - The Rates

7.1   In consideration of the provision of the Services set forth in the particular SLA, the Vendor shall be entitled to invoice the particular Client for the provision of such Services based on the Rates, and the Client shall be required to pay such amount to the Vendor, subject to the terms and conditions of the SLA and Contract.

7.2   MBS agrees that interest may be payable on any accounts approved by a Client, at a rate fixed by the Minister of Finance from time to time, to be calculated from the respective dates that such billing statements are payable in accordance with this Agreement.

7.3   Unless otherwise stated, the Vendor shall pay all applicable duties and taxes, including excise taxes incurred by or on the Vendor's behalf with respect to the Contract.

7.4   MBS hereby certifies that the Services are required for the use of the Crown in Right of Ontario and are therefore not subject to the federal Goods and Services Tax.

7.5   Duties and taxes shall be identified and shown as separate items on each billing statement, at the rates then in effect.

7.6   A Client shall withhold any applicable withholding tax from amounts due and owing to the Vendor from the Client under this Agreement and shall remit it to the appropriate government in accordance with applicable tax laws.

7.7   The Vendor agrees to treat all Clients as it would its most favoured customer. The Vendor

represents that all of the prices, warranties, benefits and other terms being provided hereunder are equivalent to or better than the terms being offered by the Vendor to its current Clients and customers. If the Vendor enters into an agreement with any other Client or customer providing such Client or customer with more favourable terms, then this Agreement will be deemed to be amended accordingly so as to provide such terms to all Clients.

Article 8 - Monthly Reporting

8.1   The Vendor shall provide a usage report for each Reporting Period, which indicates the expenditure information as described in this Article, to MBS, no later than ten (10) Business Days after the end of the Reporting Period within the Term.

8.2   The usage report shall include information regarding the Services provided by the Vendor in accordance with the sample report attached as Appendix J to the RFP.

8.3   The Vendor shall co-operate with the MBS Representative and act promptly following the award of the Contract, to establish and create the above described report and such other reports as are described below or such other similar report, which meet MBS' requirements.

8.4   The Vendor shall be solely responsible for and all costs associated with establishing, preparing, supporting and producing all such activity reports.

8.5   The Vendor shall provide the MBS Representative from time to time with any other documentation the MBS Representative requests or which is required by this Agreement.

Article 9 - Assignment and Sub-Contracting

9.1   The Vendor shall not assign the Contract nor any SLA, in whole or in part, to any Person, without the prior written consent of MBS (and in the case of an SLA, the Client), which consent shall not be unreasonably withheld. Without limiting the foregoing, MBS (and in the case of an SLA, the Client) shall be entitled to withhold consent to any proposed assignment if any of the following conditions are not met:

(a) MBS (and in the case of an SLA, the Client) shall be given prior written notice and shall be provided with such information as it may reasonably request with respect to the proposed assignee, including such information as MBS (and in the case of an SLA, the Client) may request to assure itself that such Person is not a financial or security risk and is otherwise acceptable to MBS (and in the case of an SLA, the Client);

(b) MBS (and in the case of an SLA, the Client) is satisfied that the assignee is and will be able and willing to assume and fulfil all of the Vendor's obligations under the Contract (and if applicable, the SLA);

(c) The assignment does not impose or will not result in the imposition of any additional obligation or liability on MBS or the Client; and

(d) Any assignment of the Agreement shall not relieve the Vendor of any obligation or liability under the Contract (and if applicable, the SLA).

9.2   MBS acknowledges that the Vendor may be affected by an amalgamation or other corporate re-organisation from time to time and agrees to consent to an assignment of the Contract as part of any such amalgamation or other re-organisation provided that all of the conditions in the preceding Section 9.1 are met.

9.3   Every sub-contract entered into by the Vendor shall adopt all of the terms and conditions of this Contract as far as applicable to the Subcontractor's work.

9.4   The Vendor shall be as fully responsible to MBS for the acts and omissions of its Subcontractors and suppliers and of Persons directly or indirectly employed by them, as for its own acts and omissions and the acts and omissions of Persons directly employed by it.

9.5   Nothing contained in the Contract shall create any contractual relationship between MBS and any Subcontractor, or between MBS and any Person contracting with any Subcontractor, or between any Client and any Subcontractor, or between any Client and any Person contracting with any Subcontractor. No contract, subcontract or other arrangement entered into by the Vendor with any third party shall impose any obligation or liability upon MBS or a Client to any such third party or to any of the third party's officers, directors, partners, affiliates, agents or employees.

Article 10 - Conflict of Interest

10.1   The Vendor shall not engage in any activity or provide any services to MBS where such activity or the provision of such services, creates a conflict of interest (actually or potentially in the sole opinion of MBS) with the provision of Services pursuant to the Contract. The Vendor acknowledges and agrees that it shall be a conflict of interest for it to use confidential information of the Crown relevant to the Services where MBS has not specifically authorized such use.

10.2   The Vendor shall disclose to MBS without delay any actual or potential situation that may be reasonably interpreted as either a conflict of interest or a potential conflict of interest.

10.3   A breach of this Article by the Vendor shall entitle MBS to terminate the Agreement, in addition to any other remedies that MBS has in the Contract, in law or in equity.

Article 11 - Confidentiality, Security and Integrity of Information

11.1   (a)   The Vendor agrees to ensure that, it shall both during and following the term of this

Agreement, maintain the confidentiality, integrity and security of all Client Confidential Information that is or becomes in the possession or under the control of the Vendor pursuant to this Agreement.

(b)   MBS agrees to ensure that it shall, both during and following the term of this Agreement, maintain the confidentiality, integrity and security of all Vendor Confidential Information that is or becomes in the possession or under the control of MBS pursuant to this Agreement.

11.2   The Vendor acknowledges that MBS and all Clients are bound by the provisions of the *Freedom of Information and Protection of Privacy Act* and the regulations made thereunder ("FIPPA"), as well as any orders made by the Information Privacy Commissioner or a court of competent jurisdiction pertaining thereto. The Vendor further acknowledges that any information collected or received by the Vendor pursuant to this Agreement may be subject to the rights and safeguards provided for in the FIPPA, and the Vendor may be bound by the FIPPA for this purpose.

For greater certainty, the Vendor agrees that it shall:

(a)   not directly or indirectly disclose, destroy, use, or exploit at any time, except where required by law, any Personal Information that is or becomes in the possession or control of the Vendor pursuant to this Agreement;

(b)   return all Personal Information (including all copies of information, if there is more than one copy) to the Client that is or becomes in the possession or control of the Vendor pursuant to this Agreement, or in any event, at the expiry or termination of the Agreement;

(c)   keep Personal Information obtained from a Client pursuant to an Assignment separate from all other information, and where Personal Information obtained from Client is stored in a database, it shall keep such databases separate from all other databases, where other information is being stored, so that there shall be no intermingling of information;

(d)   keep all Personal Information obtained from a Client pursuant to this Agreement in a physically secure location and the Vendor will ensure that the access to such Personal Information is restricted to employees of the Vendor who have been specifically authorized to have such access, and who require such access in order to perform the Services under this Agreement;

(e)   implement and maintain measures to ensure the security, confidentiality and integrity of Personal Information that is or becomes in the possession or control of the Vendor pursuant to this Agreement to protect Personal Information against loss, alteration and destruction, and against access by unauthorized Persons, by

selecting and maintaining the most appropriate products, tools and procedures;

(f)   implement and maintain security measures, as requested by a Client, that in the opinion of the Client would be adequate and effective to ensure the security, confidentiality and integrity of Personal Information that is or becomes in the possession or control of the Vendor pursuant to this Agreement; and

(g)   not collect information from another Person unless it is authorized in this Contract, or the Client has consented to such collection in writing.

11.3   The Vendor has no ownership rights in or to Client Data. To the extent any right, title or interest in or to any Client Data vests, by operation of law or otherwise, in the Vendor, the Vendor shall, and hereby does, irrevocably assign to the Client all of its right, title and interest in and to all such Client Data.

11.4   The Vendor shall provide the Client with copies of any or all Client Data that is in the possession or control of the Vendor promptly upon the written request of the Client at any time or times.

11.5   The Vendor will not transmit or allow transmission of Client Data outside of the Province of Ontario except for transmission, in the normal course of providing the Services, of packets of data by internet/intranet that may occur outside the Province of Ontario in the normal course of internet/intranet operation.

The Vendor shall ensure that Client Data transmitted by means of internet/intranet shall be appropriately encrypted and secured against unauthorized access or tampering.

11.6   The Vendor will not retain or store or allow the retention or storage of Client Data outside of Canada. The Vendor will immediately notify the Client if it becomes aware that Client Data is or may have been stored or retained outside Canada.

11.7   The Vendor acknowledges and agrees that it shall have no right to use, distribute, sell or exploit any records of the impression and click-through activity of users of internet and intranet web sites ("Impression Data") generated in connection with the delivery of any Services or Deliverables to the Client. The Client shall exclusively own all right, title and interest in and to all Impression Data, including derivatives of such data and profiles of users.

11.8   The Vendor covenants that it will not use any Client Data for any purpose except for a use permitted by the terms of an Assignment. The Vendor acknowledges that this obligation will be strictly interpreted and applied by the Client and the Vendor. The Vendor will not retain any of the Client Data after the completion or termination of any Assignment.

11.9   Except only as specifically authorized by an Assignment, the Vendor will not:

(a)   use the Client Data for any commercial or operational purpose;

(b)   develop or derive for any purpose whatsoever any other product in machine-readable form or otherwise that incorporates, modifies or uses in any manner whatsoever any Personal Information contained in the Client Data;

(c)   contact directly or indirectly any individual to whom Personal Information relates.

Article 12 - Intellectual Property

12.1   The Vendor represents and warrants that the Deliverables and the provision of the Services under this Agreement shall not infringe or induce the infringement of any third party Intellectual Property Rights.

12.2   The Vendor shall, at its expense, defend all actions, claims, lawsuits and proceedings against MBS charging that any Deliverables or any Services provided by the Vendor to MBS infringe or induce the infringement of any Intellectual Property Right. The Vendor shall indemnify and hold harmless MBS, its employees and agents from and against any and all actions, claims, lawsuits, proceedings, demands, liabilities, losses, damages, costs and expenses (including, without limitation, reasonable legal fees) of whatever kind and nature, relating to or arising out of any such infringement or inducement of infringement of any such third party Intellectual Property Rights.

12.3   The Vendor irrevocably assigns to and in favour of MBS and MBS accepts all Intellectual Property Rights in and to the Deliverables, save and except those portions of the Deliverables in existence as of the Commencement Date or that were not first created or produced as part of the Services, for all time. The Vendor irrevocably assigns to and in favour of MBS and MBS accepts every right, title and interest in and to the Deliverables, save and except those portions of the Deliverables in existence as of the Commencement Date or that were not first created or produced as part of the Services, for all time. The Vendor shall give the Deliverables to MBS upon completion of the Services or any termination or cancellation of the Services under this Agreement, or upon request by MBS. For greater certainty, the Vendor irrevocably assigns to and in favour of MBS and MBS accepts all right, title and interest in and to the copyright to those portions of the Deliverables not in existence as of the Commencement Date and that were first created or produced as part of the Services and to the Deliverables in their entirety, for all time, and further agrees to irrevocably assign to and in favour of MBS all such right, title and interest upon the completion of each Assignment. Preexisting intellectual property and those portions of the Deliverables in existence as of the Commencement Date or that were not first created or produced as part of the Services are hereby licensed on a fully paid-up and irrevocable basis by the Vendor to MBS for use only with the Deliverables as required.

For greater certainty, the Vendor will not file any application, and will not contest any application filed by the Crown, for any patent in which the claims cover all or part of those portions of the Deliverables not in existence as of the Commencement Date and not first created

or produced as part of the Services, whether or not such patent depends or would depend upon any pre-existing patent rights in or to those portions of the Deliverables in existence as of the Commencement Date or that were not first created or produced as part of the Services. Subject to the foregoing sentence, nothing in this Agreement restricts the Vendor from filing any application for any patent in which the claims cover all or any part of the Deliverables in existence as of the Commencement Date or not first created or produced as part of the Services.

Nothing herein prevents or restricts the Vendor from applying for and potentially receiving a patent which may include a portion of the Deliverables; provided, the resulting application or patent:

(1)   does not encompass a substantial portion of any Deliverables;

(2)   is not reasonably considered to be a substitute for the Deliverables; and

(3)   does not in any way restrict or modify the Crown's use of the Deliverables.

The Vendor shall ensure that the Deliverables shall at no time include copyrighted or proprietary commercial off the shelf software. The Vendor shall not develop trademarks for MBS or the Client, and shall not assign trademarks to MBS or the Client, pursuant to this Agreement unless the development or assignment of specific trademarks is expressly set out in an Assignment.

The Vendor shall retain the right to re-use, but only to the extent they are of a generic technical nature and are not specific to the operation and activities of the Province of Ontario, and only insofar as such use does not breach the other provisions of this Agreement, (including, without limiting the generality of the foregoing, the confidentiality provisions of Article 11) such concepts, techniques, ideas, information, documentation and other materials, however recorded, as developed by the Vendor in connection with this Agreement. Notwithstanding the foregoing, the Vendor shall not re-use or otherwise disclose any records or other information which MBS or Client has the discretion or obligation not to disclose under any statute, including but not limited to FIPPA. For greater certainty, MBS hereby grants to the Vendor a license on a fully paid up and irrevocable basis permitting such re-use as required. Subject to the foregoing, MBS grants to the Vendor, on a fully paid up and irrevocable basis, a licence to use derivative works of pre-existing portions of the Deliverables but only to the extent they are of a generic technical nature and are not specific to the operation and activities of the Province of Ontario, and only insofar as such use does not breach the other provisions of this Agreement, (including, without limiting the generality of the foregoing, the confidentiality provisions of Article 11) and the accompanying intellectual property rights.

Each party understands and agrees that the employees of the other party, during the course of or as a consequence of the Vendor's employees performing Services under an Assignment, may further develop their knowledge, skills and experience as it relates to information technology. The subsequent use by such employees of the other party of such knowledge, skills and experience in the ordinary course of their employment or the business of the other party, its

subsidiaries, its parent, or other subsidiaries of its parent (in the case of the Vendor) or its Ministries, agencies, boards or commissions (in the case of MBS) does not constitute a breach of this Agreement. Further, each party recognizes that the other party's receipt of confidential information under this Agreement will not create any obligation in any way limiting or restricting the assignment of the other party's employees within the other party's organization.

12.4   For the purpose of the *Copyright Act* R.S.C. 1985 c. C-42 the Vendor acknowledges that all materials produced or provided by it pursuant to an Assignment and that were not in existence as of the Commencement Date will be prepared under the direction and control of Her Majesty the Queen in right of Ontario and the copyright thereto shall belong to Her Majesty the Queen in right of Ontario. The Vendor shall waive and shall require from its employees and Subcontractors that they waive any moral rights the Vendor, its employees and Subcontractors may have under the *Copyright Act* concerning the said materials in favour of Her Majesty the Queen in right of Ontario.

12.5   The Vendor shall place a copyright notice on all recorded Deliverables conceived of, completed or produced in performing the Services, in the following form:

© Queen's Printer for Ontario, **[*insert year of publication]**

12.6   At the request of MBS at any time or from time to time, the Vendor agrees to execute and to cause each of its employees, volunteers, agents and Subcontractors to execute a written assignment of the copyright in the applicable Deliverables to "Her Majesty the Queen in the right of Ontario as represented by Management Board of Cabinet" in the form set out in Schedule 3, save and except those portions of the Deliverables in existence as of the Commencement Date or that were not first created or produced as part of the Services.

12.7   The Vendor will assist MBS in preparing and prosecuting any Canadian or foreign patent or trademark application, copyright registration or any other intellectual property claim or interest that MBS considers appropriate. The Vendor will obtain or execute any other documents reasonably required by MBS to protect the intellectual property of MBS.

12.8   The Vendor agrees that all Intellectual Property Rights and every other right, title and interest in and to all concepts, techniques, ideas, information and materials, however recorded, (including images and data) provided by MBS to the Vendor shall remain the sole property of the Ontario Government at all times.

12.9   The Vendor shall not use in any fashion whatsoever the Ontario logo or the Ontario Coat of Arms or other identifier of the Government without the prior approval of Her Majesty the Queen in right of Ontario which approval may be unreasonably withheld. The Vendor shall not use any official mark of Her Majesty the Queen in right of Ontario or of any other governmental authority without the approval of Her Majesty the Queen in right of Ontario which approval may be unreasonably withheld. Any use by the Vendor of any such official marks shall be on such terms and conditions as Her Majesty the Queen in right of Ontario may prescribe from time to

time.

12.10   In respect of any name, mark, logo or design (collectively the "mark") that the Vendor may develop in connection with an Assignment, the Vendor shall assign all right, title and interest in and to mark to Her Majesty the Queen in right of Ontario without additional compensation.

Article 13 - Indemnification, Limitation of Liability and Insurance

13.1   Subject to the provisions of Section 13.5, the Vendor hereby agrees at all times to indemnify and hold harmless MBS, each Client, their directors, officers, employees, agents and Subcontractors, from and against any and all liability, claims, demands, losses, costs, damages, expenses, actions, causes of action, suits, or other proceedings by whomsoever made, sustained, brought or prosecuted in any manner based upon, occasioned by or attributable to anything done or omitted to be done by the Vendor, its Subcontractors or their respective directors, officers, employees, agents or subcontractors:

(a)   in connection with the Services performed, purportedly performed or required to be performed by the Vendor under the Contract or SLA, and

(b)   in connection with the Vendor's re-use or concepts, techniques, ideas, information, documentation and other materials under Section 12.3.

13.2   The Vendor shall, at its own expense, put in effect and maintain throughout the Term of this Agreement with insurers acceptable to Risk Management and Insurance Services at MBS, all the necessary and appropriate insurance for a prudent vendor of this type, and including at least the following:

(a)   comprehensive general liability insurance acceptable to MBS to an inclusive limit of not less than two million dollars Canadian ($2,000,000.00 CDN) per occurrence on property damage, bodily injury and personal injury, naming Her Majesty the Queen in right of Ontario as represented by the Chair of the Management Board of Cabinet, as an additional insured but only in respect of, and during, operations performed by or on behalf of the Vendor. The use of an occurrence-based Umbrella or Excess Liability Insurance Policy to achieve the above required liability limits shall be permitted by MBS, provided that such Umbrella or Excess Liability Insurance coverage meets the required individual policy limits identified above. The above referenced policy shall also include at least the following other policy endorsements:
(i)   Cross Liability
(ii)   Contractual Liability Coverage
(iii)   Independent Contractors/Contingent Employers Liability Coverage
(iv)   Products and Completed Operations
(v)   Non-Owned Automobile Coverage with Blanket Contractual and Physical Damage Coverage for Hired Automobiles
(vi)   Employer's Liability and Voluntary Compensation, if the Vendor does not

         provide to MBS a certificate of WSIB coverage

(vii)   30 day written notice of cancellation

(b)   professional liability insurance, in the amount of not less than two million Canadian dollars ($2,000,000.00 CDN) per occurrence, insuring liability for errors and omissions in the performance or failure to perform professional services contemplated in the Contract; the additional insureds must include all of the Vendor's Subcontractors and their subcontractors.

13.3   The Vendor shall submit proof of such insurance in the form of a valid certificate of the insurance to MBS, on or before the Commencement Date of this Agreement (and a renewal replacement on or before any subsequent policy renewal), referencing this Agreement. Such certificate of insurance shall confirm the coverage set out in this Article. The Vendor shall ensure that each Subcontractor complies with the insurance requirements set out in this Article by obtaining similar types of insurance.

13.4   If the Vendor does not provide a policy endorsement for Employer's Liability and Voluntary Compensation, the Vendor shall submit a valid certificate of WSIB coverage to MBS, prior to the Commencement Date of this Agreement and any subsequent policy renewal, referencing this Agreement. The Vendor shall ensure that each Subcontractor complies with the WSIB requirements set out in this Article by obtaining similar types of coverage if the Subcontractor does not provide a policy endorsement for Employer's Liability and Voluntary Compensation.

13.5   Circumstances may arise where MBS and /or a Client (collectively called the "Purchaser" for the purposes of this Section) is entitled to recover damages from the Vendor, or the Vendor is entitled to recover damages from the Purchaser. In each such instance, the Vendor or Purchaser, as applicable, is liable for no more than:

(a)   payments referred to in Article 12.2 (Intellectual Property);

(b)   damages applicable to a breach of any provision in Article 11 (Confidentiality, Security and Integrity of Information);

(c)   damages for physical harm to Persons caused by the negligence of the Vendor or the Purchaser, as the case may be;

(d)   damages for physical harm to tangible personal property and real property caused by the negligence of the Vendor or the Purchaser, as the case may be; and

(e)   for any other direct damages as follows:

1.   where the dollar value of the Assignment is $100,000.00 or less: $100,000.00;

2.   where the dollar value of the Assignment exceeds $100,000.00: the greater of the

charges for the Services of the particular SLA or $500,000.00.

This limitation of liability applies to the Vendor's Subcontractors and program developers and the Purchaser's subcontractor's and program developers. It is the most the Purchaser is entitled to receive from the Vendor and the Vendor's Subcontractors and Program developers combined. It is the most the Vendor is entitled to receive from the Purchaser and the Purchaser's subcontractors and Program developers combined.

Under no circumstances is the Vendor or the Purchaser liable to the other party for any of the following:

> (i)   damages to third parties claimed against the other, other than those pursuant to (a), (b), (c) and (d) above;

> (ii)   harm to the other party's records or data, except that where the Purchaser's records or data are harmed by the negligence of the Vendor or the Vendor's Subcontractors, the Vendor is responsible, subject to (e) above, for the failure to restore the Purchaser's records or data to the same state as the last back-up copy available from the Purchaser (for the purposes of this provision, the Purchaser is required to maintain adequate back-up of all records and data to enable their restoration).

> (iii)   special, indirect or consequential damages, other than those under (a), (b), (c) and (d) above, including but not limited to lost profits, lost business revenue or failure to realize expected savings, even if informed of their possibility; or

This "Limitation of Liability" applies regardless of the basis on which the Purchaser or Vendor is entitled to claim damages from the other, including but not limited to:

> (1)   breach of contract even if fundamental breach; or

> (2)   tort, including but not limited to negligence or misrepresentation.

Notwithstanding any provision to the contrary in this Agreement, this Section does not apply to:

> (a)   any violation of the rights of a party or its affiliate under intellectual property statutes; or

> (b)   a failure to pay amounts owing under this Agreement, subject to the provisions of Section 4.8 of this Agreement.

13.6   Technology **-** For the purposes of Sections 13.7 to 13.9, the following definitions apply:

(a) "Code" means all computer programming code (both object and source, unless otherwise specified) executable or not executable, as created, modified or enhanced from time to time by the Vendor, including, without limitation, all interfaces, navigational devices, menus, menu structures or arrangements, icons, help, operational instructions, scripts, commands, syntax, including, without limitation, any Java code, HTML, Active X and other server pages, or application program interfaces, and the literal and non-literal expressions of ideas that operate, cause, create, direct, manipulate, access or otherwise affect the Deliverables, including, without limitation, any Intellectual Property Rights therein.

(b) "Media" means the electromagnetic or other media in which the Code is contained, recorded or fixed and includes CD-ROMs, disks, tape and any other media; and

(c) "Harmful Code" means any computer code which is designed to adversely affect or interfere with the use or operation of the Code, any other computer software, equipment or computer system, including without limitation, time bombs, Trojan horses, timelocks and viruses.

13.7 The Vendor will use best efforts to ensure that all Code and Media when provided to a Client or when used by the Vendor in the provision of any Services shall be free of Harmful Code. Immediately prior to providing Code or Media to a Client, or prior to using the same to provide any Services, the Vendor shall have it checked for any Harmful Code; and the Vendor shall give notice to the Client at the earliest opportunity if it has reason to believe Harmful Code is or may be contained on the Media or in Code provided by the Vendor to a Client. The notice shall contain sufficient information to identify and locate the Harmful Code and shall describe the operation and effects of the Harmful Code and, subject to Section 13.8, the steps to be taken by the Vendor at its expense to remove the Harmful Code from the Code unless the Vendor provides replacement Code without the Harmful Code at its expense.

13.8 Notwithstanding the other provisions of these Sections, if a Client or the Vendor discovers, at any time up to one (1) year after the expiry or termination for any other reason of an SLA, any Harmful Code in any Code provided to a Client, the Vendor shall remove the Harmful Code or replace the infected Code at its expense.

13.9 The Vendor agrees and certifies that any Code used, created or supplied by the Vendor in connection with any SLA and that is to be provided to a Client does not and will not knowingly contain any hooks, back doors, or other tools which upon termination of this Agreement or the SLA, would prevent the Client from obtaining services from any Person in replacement of the Services. However, if any hooks, back doors or other tools are contained in any of the Code that is to be provided to a Client, the Vendor shall provide such hooks, back doors or other tools to the Client at no cost.

13.10 Where the Deliverables include an internet or intranet web site, the Vendor will, during the

currency of the warranty period in respect of the Deliverables, without charge to the Client, repair any element of such web site that does not meet any of the warranties set out in the Contract within six (6) hours (or such shorter period as may be stipulated in an SLA) if the defect affects the usability of the web site and otherwise will repair the defect within twenty-four (24) hours (or such shorter period as may be stipulated in an SLA).

13.11 Where the Deliverables include an internet or intranet web site, the Client shall be entitled to relocate the web site to any location, to any internet or intranet address, and to the servers of any hosting entities, anywhere on the internet or intranet. Upon such relocations, the Vendor shall provide a copy of the entire web site in the format requested by the Client, together with such operating documentation as may be required by the Client to operate the web site, or to arrange for maintenance of the web site by the Client or by third parties. The Vendor hereby agrees to cooperate with the Client in any such relocations of the web site.

Article 14 - Interpretation of the Contract

14.1 The MBS' Representative is in the first instance the interpreter of the Contract and the judge of the Vendor's performance. The MBS Representative shall decide on the completeness and adequacy of the Services and on any question arising between the parties, and in particular, without limiting the generality of the foregoing any questions as to:

(1) whether or not the quality or quantity of any Deliverable supplied or proposed to be supplied by the Vendor meets the requirements of the Contract; and

(2) whether or not the labour, or supplies provided by the Vendor for providing the Services under the Contract are adequate to ensure that the terms and conditions of the Contract will be carried out.

Article 15 – Term and MBS' Rights of Termination

15.1 The initial Term of the Contract shall be two years from the Commencement Date. MBS shall have the option to extend the Contract for one further year, such extension to be upon the same terms, conditions and covenants contained in the Contract, excepting the further option to renew. The option shall be exercisable by MBS upon sixty (60) days prior written notice to the Vendor.

15.2 MBS reserves the right to terminate the Contract immediately upon giving written notice to the Vendor in the event of the Vendor being adjudged bankrupt or making a general assignment for the benefit of its creditors, or a receiver being appointed on account of the Vendor's insolvency.

15.3 MBS reserves the right to terminate the Contract upon giving seven (7) days prior written notice to the Vendor in the event of the Vendor:

1) neglecting or failing to carry out the Services properly or diligently and in accordance with the Contract: or

2) failing to provide MBS with any of the statements required to be provided pursuant of this Agreement: or

3) disregarding pertinent laws, regulations, by-laws or ordinances or the pertinent instructions of the MBS' Representative,

provided that the Vendor fails to rectify or correct any such default or delay as required by the said notice within the seven (7) day period.

15.4   MBS reserves the right to terminate the Contract, without cause, upon sixty (60) days prior written notice to the Vendor.

15.5   In the event that the Vendor has been given two (2) notices under Section 15.3 of this Agreement, the giving of a third such notice, whether such notices relate to the same default or delay or arise out of separate occurrences, will automatically result in the immediate termination of the Contract.

15.6   Upon termination, the Vendor will:

1) disclose to MBS the current state of the Services which are being performed by the Vendor at the date of termination and provide to MBS a report of, and all the material reflecting, such current state of the Services; and

2) execute such documentation as may be required by MBS to give effect to the termination of the Contract.

3) cease to perform the Services, and Client will pay to the Vendor all sums due to the Vendor as a result of both the Services performed and for the proration of approved expenses incurred to the date of termination.

15.7   Upon the request of MBS following the expiry or earlier termination of the Contract, the Vendor shall attend a debriefing session conducted by MBS where the Vendor will provide MBS with its conclusions and observations about the implementation of the Contract in order to provide MBS with feedback for structuring contracts providing for similar services in the future.

15.8   Notwithstanding the expiry or termination of the Agreement, Article 10 (Conflict of Interest), Article 11 (Confidentiality, Security and Integrity of Information), Article 12 (Intellectual Property), Article 13 (Indemnification, Limitation of Liability and Insurance), Article 17 (Audit) and Article 19 (Representations and Warranties) shall survive and remain in full force and effect.

Article 16 - Settlement of Disputes

16.1   In the event of any dispute or claim arising between MBS and the Vendor as to their respective

rights and obligations under the Contract, either party hereto may give the other written notification of such dispute or claim. The notification of dispute or claim shall be made within fourteen (14) days of the dispute or cause of action arising. If the dispute or claim cannot be resolved to the satisfaction of both parties, the matter shall be referred to arbitration, in accordance with the *Arbitration Act*.

Article 17 - Audit

17.1   The Vendor shall, for a period of four (4) years following the expiry date of this Agreement or termination of the Contract, keep and maintain accurate books, records and accounts of its Services provided under the Contract. The Vendor shall on reasonable notice make such books, records and accounts readily available to MBS for inspection, and for the purpose of taking excerpts.

Article 18 - Contract

18.1   During the Term, the Vendor shall advise the MBS' Representative promptly of:

(a)   any contradictions, discrepancies or errors found or noted in the Contract;

(b)   supplementary details, instructions or directions that do not correspond with those contained in the Contract; and

(c)   any omissions, or other faults, that become evident and which should be corrected in order to provide the Services in accordance with good standard work practices.

Article 19 - Representations and Warranties

19.1   The Vendor makes the following representations, warranties and covenants to MBS as of the date of execution of this Agreement and continuing during the Term of this Agreement, and acknowledges that MBS and Clients are relying upon such representations, warranties and covenants:

(a) It has the full right and power to conclude and execute the Contract and to do all acts and things and execute and deliver all other documents as are required hereunder to be done, observed or performed by it in accordance with its terms and there is no agreement with any other Person which would in any way interfere with the rights of MBS or Clients under the Contract;

(b) The Vendor has the necessary experience, expertise and resources to observe, perform and fulfil its obligations under the Contract in accordance with the terms hereof;

(c) The Services shall be provided fully and diligently in a professional and competent manner by individuals who are qualified and skilled in their occupations and whose skills and experience equal or exceed the requirements set out in the relevant Role descriptions as set out in the RFP;

(d) It is a corporation duly incorporated and validly existing under the laws of its jurisdiction of incorporation and has all necessary corporate power and authority to own its properties and carry on its business as presently carried on and is duly licensed, registered and qualified in all jurisdictions where its property is owned or leased or the nature of the activities conducted by it makes such licensing, registration or qualification necessary;

(e) No steps or proceedings have been taken or are pending to supersede or amend its constating documents or by-laws in a manner which would impair or limit its ability to carry out its obligations hereunder;

(f) It has taken all necessary corporate action to authorize the creation, execution, delivery and performance of the Contract;

(g) The Contract constitutes a valid and legally binding obligation of the Vendor enforceable against it in accordance with its terms, subject only to applicable bankruptcy, insolvency and other similar laws affecting the enforceability of the rights of creditors generally, the general principles of equity and that equitable remedies such as specific performance and injunction are available only in the discretion of a court;

(h) None of the authorization, creation, execution or delivery of the Contract, nor compliance with or performance of the terms and conditions of the Contract:

has resulted or will result in a violation of the articles or by-laws of the Vendor or a breach or violation of any shareholder agreement or any resolutions passed by the board of directors or shareholders of the Vendor or a breach or violation of any Requirements of Law; or
has resulted or will result in a breach of, or constitute a material default under any agreement, undertaking or instrument to which the Vendor is a party or by which it or its property or assets is bound such that such default will affect the Vendor's ability to satisfy its obligations under the Contract;

(i) There is no suit, action, dispute, civil or criminal litigation, claim, arbitration, or legal, administrative or other proceeding or governmental investigation, including appeals and applications for review pending or, to the best of its knowledge, information and belief, threatened against it which relate to the Contract. There is not presently outstanding against the Vendor, any judgement, execution, order, injunction, decree or ruling of any court, administrative agency, governmental authority or arbitrator which affects the Contract;

(j) The Vendor shall perform all Services so as to meet or exceed the requirements set out in the Contract and any relevant SLA. The Vendor shall complete all Deliverables hereunder so as

to comply with the applicable specifications set out in the Contract or any relevant SLA or incorporated by reference herein;

(k) The Vendor shall fulfil its duties and obligations hereunder diligently and expeditiously in good faith, in a safe and prudent manner, using qualified and experienced staff and personnel, in accordance with good business practices and management techniques;

(l) The Deliverables shall not violate any Requirements of Law, including without limitation, the laws and regulations concerning export control;

(m)No part of the Deliverables shall be defamatory, libellous, pornographic or obscene;

(n) The Vendor is a resident of Canada for the purposes of the *Income Tax Act* (Canada);

(o) The Proposal when submitted to MBS was and on the date hereof continues to be true and accurate, as are all representations, statements, information supplied and certificates in or associated with the Proposal.

Article 20 - General

20.1   The Contract shall enure to the benefit of and be binding upon the parties and their successors, executors, administrators and their assigns.

20.2   The entering into the Contract by MBS shall not prohibit or limit in any way MBS or a Client from entering into a similar or identical agreement for similar or identical Services with any other vendor. The entering into the Contract by the Vendor shall not prohibit or limit in any way the Vendor from the entering into a similar or identical agreement for similar or identical Services with any other customers other than MBS and Clients.

20.3   Any failure by MBS to insist upon performance by the Vendor of any of the terms or conditions of the Contract shall not be construed as a waiver of MBS' right to require performance of any such terms or conditions, and the obligations of the Vendor with respect to such performance shall continue in full force and effect.

20.4   The Contract embodies the entire agreement between the parties with regard to the provision of the Services and supersedes any prior understanding or agreement, collateral, oral or otherwise, existing between the parties at the date of execution of the Contract.

20.5   If any term or condition of this Contract, or the application thereof to any Persons or circumstances, is to any extent invalid or unenforceable, the remainder of the Contract, and the application of such term or condition to Persons or circumstances other than those as to which it is held invalid or unenforceable, shall not be affected thereby.

20.6   The Contract includes this Agreement, the Request for Proposal and the Proposal as accepted, in

whole or in part, by MBS. In the event of a conflict or inconsistency, the Agreement shall govern over the Request for Proposal and/or the Proposal.

20.7 The Vendor shall have no power or authority to bind MBS or to assume or create any obligation or responsibility, express or implied, on MBS' behalf. The Vendor shall not hold itself out as an agent, partner or employee of MBS. Nothing in this Contract shall have the effect of creating an employment, partnership or agency relationship between MBS and the Vendor or constitute an appointment under the *Public Service Act*. For the purposes of this paragraph, "Vendor" includes any of its officers, directors, shareholders, partners, employees, affiliates or agents.

Article 21 - Notices

21.1 Any notice, direction or other communication required to be given by either party to the other shall be in writing and shall be conclusively deemed to have been given five (5) days after such notice, direction or communication is mailed in a postage prepaid envelope to MBS at the address noted in Section 1.2 of this Agreement, and the Vendor at the address noted in the Section 1.3 of this Agreement, or in each case to such other address as the party may furnish to the other from time to time during the Term of this Contract, provided that any such notice, direction or other communication may also be given by delivery to the addressee and shall be deemed to have been given at the time of such delivery or by facsimile, to the number shown above (to be confirmed by mail) in which case notice shall be deemed to have been given on the first Business Day following receipt of such notice. In the event of a postal disruption any notice, direction or other communication must be given personally or by facsimile.

IN WITNESS WHEREOF the parties hereto have executed this Agreement on the date first above written.

HER MAJESTY THE QUEEN in right of Ontario as represented by the Chair of the Management Board of Cabinet

Per:

[*insert name of Vendor]

Per:

I have authority to bind the Vendor.

SCHEDULE 1

SCHEDULE OF SERVICES

1.   The Project

1.1   MBS has selected the Vendor to be a Vendor of Record (VOR) on a non-exclusive basis for the performance of Services for the Geographic Region(s), on a mandatory use basis by Clients, and on an "if and as when required" basis.

1.2   Clients will be able to acquire the Services offered by the Vendor for any or all of the Roles referenced in Section 2.0 of this Schedule, according to their own specific requirements. This means that as part of the general skill sets identified in the profile of each Role as described in Section 2.1 and the technical skill sets identified in Section 2.2, Clients may specify particular requirements for the Assignment. The Vendor shall provide Services in accordance with the specifications stated herein and such requirements specified by Clients at the Rate(s) set out in Schedule 2.

1.3   The Vendor warrants and covenants that the Vendor shall be able to communicate electronically with Clients. The target environment is for Clients to be able to access the Vendor, using the internet/intranet for the purpose of requesting any of the Services, providing feedback, and other general communication with the Vendor.

1.4   If so required by any Client, the Vendor must destroy all information contained on any medium that is to be removed from any public sector office for any purpose related to the Services. The Client may choose to witness this, and/or request the Vendor to certify such destruction and request that the Vendor provide the Client with such certificate with any progress report.

1.5   The Client may or may not be in a position to validate time sheets and/or attendance records for the Vendor's resources contracted by the Client or otherwise directly monitor the progress of work on the Assignment. The Vendor shall be responsible for attendance record-keeping and the general supervision of its employees and Subcontractors as well as monitoring their

performance.

1.6   The Vendor shall report monthly to MBS, no later than 10 Business Days after the end of each month, on all Assignments performed for Clients pursuant to the Contract. In the event that no contracts are entered into during each Reporting Period, a "NIL" report must be submitted.

2.   **The Services**

2.1   The Vendor shall provide each of the Clients with Services, using qualified personnel to fulfil the following **Roles**, within the following **Geographic Regions**, as requested by the particular Client:

2.2   **[insert Roles and Geographic Regions here]**

Schedule 2 - The Rates

[INSERT] The rates as accepted in whole or part by MBS.

The Services, including any follow-on work, acquired by Clients from the Vendor under this VOR arrangement must not exceed $500,000.00 per Assignment. Each Assignment may involve more than one individual from the Vendor providing the Services, however, the ceiling cost for each Assignment, including any follow-on work, shall not exceed $500,000.00

The qualified Roles and rates are as detailed in this Agreement.

Schedule 3 - Assignment Of Copyright Form

ASSIGNMENT OF COPYRIGHT

THIS ASSIGNMENT made in duplicate as of **[*insert date]**.

In consideration of HER MAJESTY THE QUEEN in right of Ontario as represented by the Minister of **[* insert name of ministry]** ("HMQ") entering into an agreement dated **[*insert date]**, **[*insert title or reference number if available]**, the undersigned agreed to assign and now does assign and transfer unto HMQ all of its interest in and to the copyright in Canada of the original work(s) entitled "**[*insert title of each of the Deliverables]**" for the remainder of the unexpired term of the copyright.

IN WITNESS WHEREOF THE UNDERSIGNED HAS EXECUTED THIS ASSIGNMENT.

<div align="center">

[*Insert legal name of the Vendor]

Per:

</div>

Schedule 4 - Service Level Agreement

SERVICE LEVEL AGREEMENT FOR ELECTRONIC SERVICE DELIVERY (ESD) CONSULTING SERVICES, SA XXXX

THIS AGREEMENT made in duplicate on the_____ day of _____, **[Year]**

BETWEEN:

> **HER MAJESTY THE QUEEN IN RIGHT OF ONTARIO**
> **AS REPRESENTED BY THE**
> *[MINISTER]* **OF** *[Ministry/Agency]*
> (The "Client")

AND: **[Vendor's Name]**
                                (The "Vendor")

IN CONSIDERATION of the following mutual promises, and subject to the terms and conditions hereof, the Client and the Vendor agree as follows:

Section 1.0 - Definitions

1.1   In this Service Level Agreement, the following words and phrases have the following meanings:

"Per Diem Rates" mean the rates quoted based on a minimum of 7.25 hours per day.

[Client may add other Terms and Definitions pertinent to the assignment]

Section 2.0 - The VOR Agreement

2.1   This Service Level Agreement is entered into pursuant to the Management Board's VOR Agreement SA **#XXXX** (the "Management Board VOR Agreement").

2.2   In the event of a conflict or inconsistency between this Service Level Agreement and an express term of the Management Board VOR Agreement, the latter shall govern to the extent expressly set out therein and this Service Level Agreement shall be interpreted to have been amended to the extent of the conflict or inconsistency.

Section 3.0 - Term of Service Level Agreement

3.1   **[To be completed by Client -Insert start- and end-dates of assignment]**

Section 4.0 - Assignment

4.1   The Vendor agrees to provide **[*brief description of Services]** to the Client as described in the Management Board VOR Agreement and as more particularly specified in Schedule "A" (Assignment).

4.2   The Vendor shall adhere to the time lines set out in the Schedule "A" (Assignment).

4.3   The Client hereby consents to the use by the Vendor of the Subcontractors and personnel named in Schedule "A" (Assignment), for the particular Role specified therein. **[*use this clause if appropriate otherwise, please delete]**

4.4   The Client will notify the Vendor, within one week of occurrence of any changes which may affect the provision of the Services.

Section 5.0 - Contacts for Assignment

5.1   Vendor's Contact name, phone, facsimile and E-mail numbers:

5.2   Client's Contact name, phone, facsimile and E-mail numbers:

Section 6.0 - Fees

6.1   Provided that the Services are satisfactory to the Client, the Client shall pay the Vendor in accordance with the prices provided in the Vendor's Proposal which forms part of the Management Board VOR Agreement. For convenience, the applicable fees for this Assignment are set out **[*in Schedule "B" (Fees) of this Agreement]** or **[*below]:**

6.2   The Vendor shall invoice the Client for Services rendered in accordance with Schedule "B" (Fees) to this Agreement.

Section 7.0 - Settlement of Disputes

7.1   In the event of any dispute or claim arising between the Client and the Vendor as to their respective rights and obligations under the Contract, either party hereto may give the other written notification of such dispute or claim. The notification of dispute or claim shall be made within fourteen (14) days of the dispute or cause of action arising. If the dispute or claim cannot be resolved to the satisfaction of both parties, the matter shall be referred to arbitration, in accordance with the *Arbitration Act*.

Section 8.0 - Client's Right to Terminate Service Level Agreement

8.1   The Client may terminate this Service Level Agreement upon giving seven (7) days written notice to the Vendor, if the Vendor:

    (a)   neglects or fails to carry out the Services properly or diligently and in accordance with this Service Level Agreement; or

    (b)   fails to observe any of its obligations required by the Management Board VOR Agreement, in addition to the performance of the Services; or

    (c)   refuses or fails to supply an adequate number of properly skilled personnel or replacement personnel;

and the Vendor fails to rectify or correct any such default or delay as required by the said notice within the time so specified.

8.2   In the event the Vendor has been given two (2) notices under paragraph 8.1 of this Agreement, the giving of a third such notice, whether such notice relates to the same default or delay or arise out of separate occurrences, may result in the immediate termination of this Agreement, at the option of the Client.

8.3   The Client reserves the right to terminate this Agreement, without cause and without any liability whatsoever, upon 30 days prior written notice to the Vendor.

Section 9.0 - Confidentiality Provisions

9.1   The Vendor agrees to ensure that the Vendor, its partners, directors, officers, employees, agents and volunteers, shall both during or following the term of this Service Level Agreement, maintain the confidentiality and security of all material and information which is the property of the Client that comes into the possession or under the control of the Vendor pursuant to this Service Level Agreement. The Vendor agrees that the Vendor, its partners, directors, employees, agents and volunteers, shall not directly disclose or use, either during or following the term of this Service Level Agreement, except where required by law, any material or information belonging to the Client, without first obtaining the written consent of the Client for such disclosure or use.

9.2   The Vendor acknowledges that the Client is bound by the provisions of the *Freedom of Information and Protection of Privacy Act* ("FIPPA") and regulations thereunder. The Vendor will respect the spirit of the FIPPA, and for greater certainty the Vendor will not either directly or indirectly use, disclose or destroy Confidential Information provided to it by MBS pursuant to the Management Board VOR Agreement.

9.3   The Vendor will return all information and ensure that all copies of the Confidential Information and any portions thereof are also returned with no copy kept by the Vendor.

9.4   The Vendor will keep separate from all its other records and databases all Client Confidential Information and Personal Information which it receives in the course of performing the Services.

9.5   The Vendor will not place or intermingle nor will it permit any Person to place or intermingle any data or records in any form whatsoever with or into the same database as the Client Confidential Information or Personal Information.

9.6   The Client Confidential Information and Personal Information will be kept by the Vendor in a physically secure location and the Vendor will ensure that the access to such Client Confidential Information and Personal Information is restricted to employees of the Vendor who have been specifically authorized to have such access.

9.7   The Vendor will implement and maintain measures to ensure the security and integrity of Client Data to protect it against loss, alteration and destruction, and against access by unauthorized Persons, by selecting and maintaining the most appropriate products, tools and procedures.

9.8   Notwithstanding that the Vendor may have instituted adequate and effective security measures, MBS reserves the right to require the Vendor to institute certain other security measures that in the reasonable opinion of MBS would be adequate and effective to ensure the security and integrity of Client Data.

Section 10.0 - Conflict of Interest

10.1   The Vendor, any of its Subcontractors and any of their respective advisors, partners, directors, officers, employees, agents and volunteers shall not engage in any activity or provide any services to the Client where such activity or the provision of such services creates a conflict of interest (actually or potentially in the sole opinion of the Client) with the provision of Services pursuant to the Management Board VOR Agreement or this SLA. The Vendor acknowledges and agrees that it shall be a conflict of interest for it to use confidential information of the Crown relevant to the Services where the Client or MBS have not specifically authorized such use.

10.2   In the event that the Services to be provided under this SLA are in respect of the Enabled IT Services Stream, i.e., the development and design of an Enabled IT project, the Vendor acknowledges that it will not be permitted to bid on any future contracts pertaining to the implementation of the same Enabled IT project.

10.3   The Vendor shall disclose to the Client without delay any actual or potential situation that may be reasonably interpreted as either a conflict of interest or a potential conflict of interest.

10.4   A breach of any of the conflict of interest clauses by the Vendor shall entitle the Client to terminate the SLA or MBS to terminate the Management Board VOR Agreement.

Section 11.0 - Warranty

11.1   The Vendor warrants that the Services and all work performed for the Client shall be free from any and all defects in performance and workmanship for the period of six (6) months immediately following completion of the Assignment.

Section 12.0 - Insurance

12.1   The Vendor shall ensure that the Client is named as an additional insured party under the Vendor's insurance required pursuant to Section 13.2 of the Management Board VOR Agreement.

Section 13.0 - Publicity

13.1   Any publicity or publications related to this Service Level Agreement or the Services shall be at the sole discretion of the Client. The Client may, in its sole discretion, acknowledge the Services of the Vendor in any such publicity or publication. The Vendor shall not make use of its association with the Client without the prior written consent of the Client.

Section 14.0 - Independent Contractor

14.1   This Service Level Agreement is for a particular and non-exclusive service. The Vendor shall have no power or authority to bind the Client or to assume or create any obligation or responsibility, expressed or implied, on the client's behalf, or to hold itself out as an agent, employee or partner of the Client. The Vendor is solely responsible for all legally required employer and employee contributions and deductions for itself and its staff.

Section 15.0 - Communications and Reporting

15.1   The Vendor shall meet with the Client's Contact person **[*specify frequency]** during the Assignment to provide status reports or to obtain approval of deliverables.

15.2   The Vendor agrees to report the Assignment to MBS during the quarter in which the Assignment was approved by the Client, in accordance with the Management Board VOR Agreement.

IN WITNESS WHEREOF the parties hereto have executed this Service Level Agreement as of the date first above written.

HER MAJESTY THE QUEEN IN RIGHT OF ONTARIO AS REPRESENTED BY THE MINISTER OF [*MINISTRY]

Name/Title

[*Vendor's name]

_____
Name/Title

I have authority to bind the Company

SCHEDULE "A"

Attached to and forming part of the Service Level Agreement for **[*Name of Agreement]** entered into between Her Majesty the Queen in Right of Ontario as represented by the Minister of **[*Ministry]** and **[*Vendor]**

WORK ASSIGNMENT

Include:
- C detailed description of Services to be performed
- C milestones/deliverables
- C description of standards to be achieved/quality management plan
- C identify personnel to be used by the Vendor, including any Subcontractors, and process for approving the replacement of personnel
- C time lines required
- C acceptance testing plans, if required
- C system documentation, if required
- C contingency plan
- C reporting requirements

[*Note 1: The Vendor will prepare an Implementation Plan which must include the "Services" to be completed, actions, resources, responsibilities and time frames for the Vendor to implement the requested "Services."]

[*Note 2: Prior to signing this Service Level Agreement, the Vendor shall meet with the Client to define and benchmark the performance criteria and standards (objectives) expected of the Vendor in providing the Services; the measurement methods to be used by the Vendor and the Client to monitor and report on its performance]

All these must be included in this Schedule.

SCHEDULE "B"

Attached to and forming part of the Service Level Agreement for **[*Name of Agreement]** entered into between Her Majesty the Queen in Right of Ontario as represented by the Minister of **[*Ministry]** and **[*Vendor].**

FEES

    C   Fees as per the Vendor's Proposal which forms part of the Management Board VOR Agreement

    C   Payment of disbursements incurred, subject to Clients approval. See note in italics below.

    C   Invoicing procedures

[*Instructions:

In those cases where the Client has previously obtained a ceiling cost limit from the Proponent with respect to the assignment for which the Client has issued a Request to the Proponent, the Proponent shall invoice the Client on the basis of the actual number of days spent by the Proponent in performing the Services as required by the Request, multiplied by the applicable personnel per diem rate, up to the ceiling cost limit.

The prices for the Services to be provided by the Vendor shall be based on the rates for resources submitted by the Vendor in its Proposal. Administrative resources and supplies used to complete the assignment will be provided at no additional charge to the Client. Prior approval must be obtained by the Vendor for Travel and accommodation expenses.

As stated in Schedule "A", it is important that the assignment be broken down by deliverables and reflect the resources and time required for each deliverable. Sub total each deliverable and at the end, tally all sub totals to arrive at the total cost of the assignment.

Remember: The total cost of the assignment will be (the per diem rates for # of resources x # of days of the assignment).]

APPENDIX B

MANDATORY SUBMISSION REQUIREMENTS CHECKLIST

NOTICE TO PROPONENTS:

1.   Proposals **must** comply with all the mandatory requirements listed.

2.   Proponents **mu**st check off the "Yes" column beside each mandatory requirement on the checklist to indicate compliance ("Yes"). Proponents are also required to note in the "Page #" column provided the page number in their submission where the information/documentation required is presented.

3.   Proponents **must** submit this checklist and the information/documentation required as part of their Proposal.

4.   There are Mandatory Requirements in this RFP other than those set out below. See the Mandatory Requirements in Appendix G of this RFP for a complete listing of Mandatory Requirements.

MANDATORY REQUIREMENT FORMS:	Yes	Page #
Mandatory Submission Requirements Checklist (Appendix B)		
Form of Offer (Appendix C)		
Rate Bid Form (Appendix D)		
Tax Compliance Form (Appendix E)		
Reference Check Questionnaire Forms, as applicable (Appendix F)		
Mandatory Requirements (Appendix G)		
Insurance Declaration Form (Appendix H)		
Service Streams and Geographic Regions Checklist (Appendix I)		
Financial Strength and Stability of Proponent		

APPENDIX C

FORM OF OFFER

To MBS:

The Proponent's registered legal business name and mailing address is:

   Telephone No(s).:

   Facsimile No(s).:

   Contact:

I/We hereby offer to perform the Services as indicated in the Rate Bid Form in consideration of MBS paying me/us in accordance with the Rate Bid Form and the terms, conditions and provisions outlined in the RFP.

I/We enclose herewith as part of the Proposal, responses to all mandatory submission requirements and other mandatory requirements, including the Rate Bid Form.

We have received and allowed for Addenda number _____ in preparing my/our Proposal.
<div align="center">(Insert #s or "NONE")</div>

I/We have carefully examined the RFP documents and have a clear and comprehensive knowledge of the Services required under the RFP. By submitting the Proposal, we agree and consent to the terms, conditions and provisions of the RFP.

I/We understand that my/our submitted Proposal is based upon the acceptance of the Proposal, in whole or in part, within **150** days of the Proposal Submission Deadline and is irrevocable during that period.

I/We hereby certify that_____
<div align="center">(Legal name of Proponent)</div>
in submitting this Proposal, is in full compliance with all tax statutes administered by the Ministry of Finance for Ontario and that, in particular, all returns required to be filed under all provincial tax statutes have been paid or satisfactory arrangements for their payment have been made and maintained.

I/ We hereby confirm that there is not nor was there any actual or perceived unfair advantage or conflict of interest in our submitting the Proposal or performing or observing the contractual obligations of the

Vendor in the Agreement.

[**or if applicable, strike out the above and include the following**:]

The following is a list of situations, each of which may be a conflict of interest or any instance of unfair advantage, or appears as potentially a conflict of interest or unfair advantage in our company submitting the Proposal or the contractual obligations of the Proponent under the Agreement.

_____
_____
_____

In submitting the Proposal, I/we have/have no **[strike out the inapplicable portion]** knowledge of or ability to avail ourselves of confidential information of the Crown (other than confidential information which may have been disclosed by MBS to the Proponents in the normal course of the RFP) and the confidential information was relevant to the work, its pricing or the RFP evaluation process.

"Confidential Information", for the purpose of this form, refers to confidential information of the Crown (other than confidential information which is disclosed to Proponents in the normal course of the RFP) which is relevant to the Services required by the RFP, their pricing or the RFP evaluation process, and the disclosure of which could result in prejudice to the Crown or an unfair advantage to the Proponent.

The following people participated in the preparation of our Proposal:

Name	**Address**	**Telephone Number**
1.		
2.		
3.		

The following is a list of individuals who are former employees of the Ontario Public Service (OPS) whom the Proponent since April 23, 1997 has either appointed to its Board of Directors or employed:

Name of Individual	**Job Classification of last position within OPS**	**Ministry/Agency of OPS where last employed**	**Last Date of Employment with OPS**
1.			
2.			
3.			

I/We hereby consent, pursuant to subsection 17 (3) of the *Freedom of Information and Protection of Privacy Act*, to the disclosure, on a confidential basis, of this Proposal by MBS to MBS' Vendors retained for the purpose of evaluating or participating in the evaluation of this Proposal.

I/We understand that in the event my/our Proposal is selected by MBS, in whole or in part, I/we agree to finalize and execute the Agreement in accordance with the RFP.

I/We understand that in the event that my/our Proposal is selected by MBS, in whole or in part, I/we agree to provide proof of the insurance coverage required by the Agreement in the form of a valid certificate of insurance and that MBS will require this proof prior to executing the Agreement.

I/We hereby consent to MBS performing checks with the references listed in the Proposal.

SIGNED SEALED AND DELIVERED   )
in the presence of:)
)_____
)Signature of Proponent
)
_____   )
Signature of Witness   )_____
)Print Name
)
)Date:_____

I have authority to bind the Proponent.

APPENDIX D

RATE BID FORM

INSTRUCTIONS:

· **Proponents MUST complete the Rate Bid Form for each Role being proposed within each Service Stream and sub-Stream within each Geographic Region proposed.**

· **Indicate Per Diem Rates only for the proposed Roles. Insert "NB" (No Bid) in boxes where Per Diem Rates are not being proposed.**

· **Proponents are required to bid one (1) per Diem Rate (e.g., $25) per box on the Rate Bid Form.**

· **Proposals showing a Range of Per Diem Rates (e.g., $25 - $40) in any one particular cell for any particular Role will be disqualified for that particular Role.**

· **Proponents must submit Per Diem Rates that are firm for the term of the resulting Agreement including the possible one (1) year extension.**

· **Appendix D must be submitted in hard copy format and on a diskette or CD, in MS Excel 97 format as provided with the RFP. Under no circumstances must the Rate Bid Form be altered in any way other than by insertion of the required information in the fields provided.**

This is ONLY a specimen of the Rate Bid Form. Proponents MUST use the Rate Bid Form provided on the diskette supplied with this RFP.

Legal Name of Proponent

	Stream A: BUSINESS PROCESS SERVICES	Per Diem Rate by Geographic Region		
	Roles	**GTA**	**Central Ontario**	**Northern Ontario**
1.1	Senior Project Manager, ESD			
1.2	Project Manager, ESD			
1.3	Project Administrator			
1.4	Business Transformation Architect			
1.5	Business Process Assessment and Integration Specialist			
1.6	Call Centre Business Analyst			
1.7	Wireless Application Services Specialist			
1.8	IT Security Specialist			
1.9	Web Multimedia Content Specialist			
1.10	Systems Auditor			
1.11	Quality and Performance Management Specialist			
1.12	Language Translation Specialist			
1.13	Privacy Specialist			
1.14	Customer Relationship Management (CRM) Specialist			

	Stream B: ENABLED IT SERVICES	Per Diem Rate by Geographic Region		
		GTA	Central Ontario	Northern Ontario
1	**Sub-stream: Technology Management**			
	Roles			
1.1	Senior IT Project Manager, ESD			
1.2	Project Integration Manager			
1.3	Technology Coordinator			

2	**Sub-stream: Web Internet Services**			
	Roles			
2.1	Project Manager-Web			
2.2	Web Technology Architect			
2.3	Web Product Specialist			
2.4	Web Database Analyst			
2.5	Web Application Designer			
2.6	Web Administrator			
2.7	Multi Media Web Developer			
2.8	Technical Writer – Web User Interface			
2.9	Web Security Specialist			
2.10	Internet Portal Specialist			
2.11	Business Analyst – Web User Interface			

3	**Sub-stream: E-Commerce Services**			
	Roles			
3.1	Project Manager - e-Commerce			
3.2	Enterprise Application Integration Specialist			
3.3	Enterprise Application Integration Database Architect			
3.4	e-Commerce Portal Developer			
3.5	e-Commerce Solutions Specialist			
3.6	e-Commerce Applications Specialist			
3.7	e-Commerce Security Specialist			
3.8	Business analyst – e-Commerce User Interface			
3.9	Technical Writer – e-Commerce User Interface			

4	**Sub-stream: Wireless Mobile-Commerce Services**			
	Roles			
4.1	Project Manager – m-Commerce			
4.2	Wireless Technology Architect			
4.3	Wireless Product Specialist			
4.4	Wireless Solutions Developer			
4.5	Wireless Application Designer			
4.6	Business Analyst – Wireless Interface Designer			
4.7	Technical Writer – Wireless User Interface			

5	**Sub-stream: Call Centre Development Services**			
	Roles			
5.1	Project Manager – Call Centre IVR Solutions			
5.2	Call Centre Specialist			
5.3	IVR Integration Specialist			
5.4	IVR Programmer/Analyst			
5.5	IVR – Web Developer			
5.6	IVR User Interface Designer			
5.7	Technical Writer – IVR			

·   Rates shown must be applicable for Business Hours during any Business Day. See Appendix A, Article 1 - Definitions.

·   GST is not applicable and must not be included in the above rates.

·   PST must not be included in the above rates.

·   Travel, meal and accommodation costs must not be included in the rates bid. (See Section 3.3.3 (iv) in the RFP)

SIGNATURE:_____

NAME: _____   DATE: _____

TITLE: _____

I have authority to bind the Proponent.

APPENDIX E

TAX COMPLIANCE DECLARATION FORM

The Ontario Government expects all Vendors to pay their provincial taxes on a timely basis. In this regard, Proponents are advised that any contract with the Ontario Government will require a declaration from the successful Proponent that the Proponent's provincial taxes are in good standing.

In order for a Proponent to be considered for a contract award, the Proponent must submit the following statement of the Proponent's tax compliance status:

I/WE hereby certify that _____ at the time of submitting this Proposal,
(legal name of Proponent)
is in full compliance with all tax statutes administered by the Ministry of Finance of Ontario and that, in particular, all returns required to be filed under all provincial tax statutes have been filed and all taxes due and payable under those statutes have been paid or satisfactory arrangements for their payment have been made and maintained.

Dated at _____ this _____ day of _____ 20____ .

_____
(Signature of Proponent or an authorized signing officer who binds the Proponent)

_____
(Print Name)

_____
(Title)

_____   _____
(Phone Number)   (Fax Number)

APPENDIX F

REFERENCE CHECK QUESTIONNAIRE FORM

Name of Proponent: _____

Stream/sub-Stream for which this reference applies:_____

Reference Check Questionnaire

Important note to Proponents:
This reference check form must be completed by each referee and returned with your Proposal. MBS at its own discretion may verify information provided.

1. What was the general nature of the work performed by the Proponent?
   _____
   _____
   _____

2. Please provide a brief description of the assignment including name of project, duration, dollar value of assignment, contact name, title, phone # and E-mail address.
   _____
   _____
   _____

3. Did the Proponent meet the following critical factors:

		Yes	No
a)	Finished the assignment on time	❏	❏
b)	Within budget	❏	❏
c)	Met all assignment objectives	❏	❏

   Comments:_____
   _____
   _____

4. Did the Proponent's resource(s) work well with staff and management?   Yes ❏   No ❏

   If no, please provide details.
   _____
   _____
   _____

5. Did the technical knowledge of the Proponent's resource(s) have a major impact on the success of the assignment?   Yes ❏   No ❏

   Comments:_____
   _____
   _____

6. What were the strengths and weaknesses of the Proponent's resource(s)?
   Comments:_____

_____
_____

7. Please rate each of the following:

	Good	Fair	Poor
Proponent's ability to comply with the terms of the service level agreement	❑	❑	❑
Proponent's ability to provide resources on time to start project	❑	❑	❑
Understanding of the requirements by the resource(s)	❑	❑	❑
Presentation/communication skills of the resource(s)	❑	❑	❑
Ability of the resource(s) to manage the assignment	❑	❑	❑
Ability of the resource(s) to transfer knowledge to staff	❑	❑	❑

8. To what degree did the Proponent's resource(s) meet your expectations

   High ❑   Medium ❑   Low ❑

9. Did the Proponent initially propose qualified resource(s), or if not, were they willing and able to readily replace the resource(s) who were not qualified?
   Comments:_____
   _____

10. Did the Proponent provide continuity of resource(s) assigned for the duration of the assignment?
                                                        Yes ❑   No ❑
    Comments:_____
    _____

11. At the completion of the assignment, did the Proponent's resource(s) provide an adequate amount of documentation for reference purposes?   Yes ❑   No ❑

12. Would you retain the services of this Proponent again?   Yes ❑   No ❑

13. If no, please provide comments:_____
    _____
    _____

Please print: Referee Name: _____
                       Completed by: _____
                       Phone #:   _____
                       Fax #:   _____

_____   _____
        Signature   Date

APPENDIX G

MANDATORY REQUIREMENTS

Proponent **must check(✓) and initial** in the appropriate column (COMPLY OR DO NOT COMPLY) beside each mandatory requirement to indicate compliance or non-compliance with the stated requirement and indicate the **page number** in the Proposal where particulars are given.   In the event that any of the mandatory requirements are deemed by MBS as not having been met, the Proposal shall be disqualified. Where appropriate, the Proponent must provide the details on a separate sheet and indicate the corresponding mandatory requirement item number.

	MANDATORY REQUIREMENTS	COMPLY	DO NOT COMPLY	INITIAL	Page #
1	**Price**				
1.1	**Firm Pricing - Per Diem Rates** The Proponent must provide Per Diem Rates for the Services as requested in the RFP. The Proponent must submit firm Per Diem Rates for the full term of the Agreement, including any extension option, that is, Per Diem Rates must not vary from year to year. The Proponent agrees to treat all Clients as it would its most favoured customer. The Proponent represents that all of the prices, warranties, benefits and other terms being provided hereunder are equivalent to or better than the terms being offered by the Proponent to its current customers. If the Proponent enters into an agreement with any other Client or customer providing such Client or customer with more favourable terms, then this Agreement will be deemed to be amended accordingly so as to provide such terms to all Clients. The Proponent shall promptly provide Clients with any refunds or credits thereby created.				
1.2	**Per Diem Rates** The Proponent agrees that for the purposes of this RFP, "Per Diem" shall mean 7.25 hours of work per				

	MANDATORY REQUIREMENTS	COMPLY	DO NOT COMPLY	INITIAL	Page #
	Business Day. The work shall be performed at the Client's site during the Client's normal Business Hours unless otherwise agreed upon in an SLA.				
1.3	**Rate Bid Form** The Proponent must complete the applicable Rate Bid Form for each Role being bid in each Service Stream within each Geographic Region proposed. Indicate Per Diem Rates only for the proposed Roles. Insert "NB" (No Bid) in boxes where no Per Diem Rates are being proposed. **The completed Rate Bid Forms must be submitted in hard copy format and also on a diskette or CD, in MS Excel 97 format as provided with the RFP. This format must not be altered in any way other than by insertion of the required information in the fields provided.**				
2	**Services**				
2.1	The Proponent agrees that, if selected, it shall provide MBS with certified copies of its insurance coverage as required by the Agreement in the amount of $2,000,000, prior to the Commencement Date of the Term of the Contract. The policy shall be effective until the Expiry Date.				
3	**Prices/Billing/Invoicing**				
3.1	A Client may request the Proponent to review a proposed Assignment for the purpose of the Proponent providing the Client with an estimate of the skills sets required and the estimated duration of each Role required to achieve completion of the Assignment within the time frame specified by the Client. An estimate, if requested by the Client, shall be prepared by the Proponent in the				

	MANDATORY REQUIREMENTS	COMPLY	DO NOT COMPLY	INITIAL	Page #
	manner requested by the Client, and at no cost to the Client.				
3.2	The total of the estimated number of days multiplied by the applicable Per Diem Rate charged by the Proponent for each Role required, will become the ceiling cost billable to the Client for completing the Assignment.				
3.3	Where the Client has previously obtained a ceiling cost limit from the Proponent with respect to the Assignment for which the Client has entered into an SLA with the Proponent, the Proponent shall invoice the Client on the basis of the actual number of Business days worked multiplied by the applicable Roles (resources) Per Diem Rates up to the ceiling cost limit.				
3.4	If an Assignment is completed in fewer Business days than specified in the ceiling cost, the Proponent shall invoice the Client on the basis of the actual number of days worked.				
3.5	If an Assignment requires additional Business days to be completed, which would result in the total cost to the Client being in excess of the ceiling cost, the Proponent shall not invoice the Client for a sum greater than the ceiling cost indicated in the SLA.				
3.6	The Proponent acknowledges that the Client will have the option of retaining a performance holdback on all progress payments to the Proponent of up to 15% of the contract price for the SLA and for a period of up to ninety (90) days following the date the Proponent has otherwise completed the Assignment. This is to be considered by the Proponent as a cost of doing business and will not give the Proponent cause				

	MANDATORY REQUIREMENTS	**COMPLY**	**DO NOT COMPLY**	**INITIAL**	**Page #**
	to claim additional expense or propose any increases or surcharges to the Per Diem Rates contained herein.				
4	**Superintendence**				
4.1	The Proponent shall be responsible for attendance record-keeping and the general supervision of its employees and/or Subcontractors as well as monitoring their performance. The Proponent further agrees that it shall do so without further charge to the Client.				
5	**Personnel**				
5.1	The Proponent shall assume responsibility for proposing qualified resources to Clients in accordance with their specific requirements. Continued failure to propose appropriate resources will result in the removal of the Proponent from the Vendor of Record list which is to be established under this RFP. Therefore, it shall be the responsibility of the Proponent to establish the required processes to ensure the appropriateness of proposed resources under different circumstances, e.g. sufficient lead time provided to Proponent, etc. The costs of establishing these processes must not be passed to Clients.				
5.2	The Client may refuse resources proposed by the Proponent for an Assignment; or, may order the Proponent to replace any resource the Proponent has assigned to an Assignment, that the Client deems inappropriate for the Assignment for reasons of perceived incompetence, failure to adhere to the Client's policies dealing with behaviour on the Client's premises, security or conflict of interest concerns (which the Client				

	MANDATORY REQUIREMENTS	COMPLY	DO NOT COMPLY	INITIAL	Page #
	is not obliged to report the details of to the Proponent), or for reasons of incompatible personalities. The Proponent shall propose a suitable replacement(s) for the resource deemed inappropriate by the Client, within **two** Business Days. The replacement resource must possess similar or greater qualifications than the resource being substituted/replaced. In such occurrences, the Proponent may request an extended deadline to that set out in the SLA, if any. The proponent shall not be entitled to claim additional costs, even if the replacement resource is of a more senior position specification than the resource being replaced.				
5.3	The Client will have the option to request that resources proposed by the Proponent undergo security checks. The Proponent shall perform such security checks without additional charge to the Client. Only those resources who obtain security clearance shall perform the Services.				
6	**Acceptance / Warranty**				
6.1	The Client will have the option of retaining a performance holdback on all progress payments to the Proponent of up to 15% and for a period of up to 90 days following the date the Proponent has otherwise completed the Assignment. For assignments involving a performance holdback, the Proponent's obligations to correct deficiencies in the work following completion shall be to remedy any undetected inherent deficiencies in the work, at no cost to the Client, for the 6 month period immediately following completion of the work.				
6.2					

	MANDATORY REQUIREMENTS	**COMPLY**	**DO NOT COMPLY**	**INITIAL**	**Page #**
	The Proponent shall warrant the work to be free from any and all defects in performance and workmanship and agrees to remedy and correct defects in the work, to the satisfaction of the Client, at no cost to the Client, for the 6 month period immediately following completion of the work.				
7	**Reporting to MBS**				
7.1	The Proponent shall report **monthly** to MBS, using the reporting form in Appendix J of this RFP, no later than 10 Business Days after the end of each month, on all Assignments performed for Clients pursuant to the Agreement established under this RFP. These reports are to be sent electronically to the contact person as determined by the MBS Representative. In the event that no contracts are entered into during each reporting period, a NIL report **must** be submitted.				

APPENDIX H

INSURANCE DECLARATION FORM

Certificate of Third Party Liability Insurance for Goods and Services Contracts

Management Board Secretariat

Contract No.(s)

Description of Goods and Services:

To: **Her Majesty the Queen in Right of Ontario, as represented by the Chair of the Management Board of Cabinet (hereinafter called "MBS").**

1. **This is to certify that**
(hereinafter called the "Vendor") is insured by this insurer under Policy No. _____, an occurrence based policy expiring _____, covering liability (subject to a limit of liability of not less than $2,000,000.00 inclusive for any one occurrence or accident) as imposed by law or assumed by the Vendor under the terms of the above described Contract, for damages arising from:

    a) **Bodily injury, sickness or disease, including death at any time resulting therefrom;**
    b) **Damage to or destruction of property of others caused by accident, including loss of use thereof; and**
    c) **All operations performed by the Vendor or sub-contractors, or Goods supplied to the Vendor or sub-contractors in provision of the goods and/or services pursuant to the Contract.**

2. **The Policy includes, as additional insureds:**

I. **Her Majesty the Queen in Right of Ontario as represented by the Chair of the Management Board of Cabinet; and**
II. **All Ontario Ministries, Agencies classified as Schedules I & IV on February 1, 2000 and advisory, adjudicative, regulatory (excluding those with governing boards) Agencies created after February 1, 2000, (individually called a "Client" and collectively referred to as "Clients") that acquire goods and/or services from the Vendor pursuant to the above described Contract;**

but only in respect of, and during the provision of goods and/or services by or on behalf of the Vendor pursuant to the Contract and not in respect of any act or omission of MBS or Clients, or any of MBS' or Clients' servants. In addition, the Policy contains at least the following Endorsements: Cross Liability, Severability of Interests, Contractual Liability.

3. **In the event that the Policy is changed or cancelled, the insurer agrees to give 30 days written notice to MBS in the manner set forth in the Policy Conditions.**

Signature of Insurer's Official:	**Department of Title:**
Name of Insurance Company:	**Date:**

This Certificate must be signed by an Official of the Insurer. Signature of an Agent or Broker is NOT acceptable.

APPENDIX I

SERVICE STREAMS AND GEOGRAPHIC REGIONS CHECKLIST

In response to this RFP, Proponents MUST identify:
- **The Stream(s) for which they are proposing – Stream "A" and/or Stream "B"**
- **The Geographic Region(s) for which they are proposing**
- **The total number of Roles for which they are proposing within each Service Stream/sub-Stream**

Check (√) the appropriate boxes in the following tables (Note: it may be necessary to check more than one box):

GEOGRAPHIC REGIONS	Check (√) all appropriate boxes	INITIAL
Greater Toronto Area		
Central Ontario		
Northern Ontario		

SERVICE STREAMS	Check (√) all appropriate boxes	Total # of Role(s) proposed for each Service Stream/sub-Stream	INITIAL
STREAM "A" – Business Process Services Stream (There are 14 Roles for Stream "A")			
STREAM "B" – Enabled IT Services Stream (5 sub-Streams) (There are 36 Roles for Stream "B")			
1. Technology Management sub-Stream			
2. Web Internet Services sub-Stream			
3. E-Commerce Services sub-Stream			
4. Wireless Mobile-Commerce Services sub-Stream			
5. Call Centre Development Services sub-Stream			

SIGNATURE: _____

PRINT NAME: _____   DATE: _____

TITLE: _____

APPENDIX J

ESD CONSULTING SERVICES USAGE REPORT - MONTHLY BASIS

Vendors must complete all the required information in each column, for every Assignment started during the Reporting Period. Vendors must submit reports on a **MONTHLY BASIS**, using the electronic format as specified by MBS, to the Procurement Policy & Information Technology Procurement Branch, Management Board Secretariat **no later than 10 Business Days after the end of each Reporting Period.**

Common Reporting Field Instructions

Agreement # with corresponding worksheet	Vendor Template Field Column Name	Definition
Common Reporting Definitions All worksheet spreadsheets have static fields that must be reported.	SA/Agreement #	Standing Agreement # (Refer to SA/Agreement # on first page on How to use the Template)
	Organization/Ministry	Ministry, Cluster or Agency Name
	Branch	Division, Branch, Section or Unit Name
	Transaction Date	Date of Purchase or Billing Date(MM/DD/YY)
	Contact First Name	Client First Name
	Contact Last Name	Client Last Name
	Contact E-mail	Client Email id
	Contact Phone	Client Phone Number (999-999-9999)
	Contact Fax	Client Fax Number (999-999-9999)
	Contact Street	Client Street Address
	Contact Suite	Client Suite Number, Floor Number, etc.
	Contact City	Client City
	Contact Province	Client Province
	Contact Postal Code	Client Postal Code
	Contact Country	Client Country

<u>**No New Business**</u>

Monthly reporting must be submitted if there is no new business.

IT Services Instructions

Agreement # with corresponding worksheet	Vendor Template Field Column Name	Definition
SA-**** Reporting Definitions for ESD Services: Use Services Worksheet Note: Report the Total Estimated Cost of the Project/Assignment **only once**. The contract cost can be reported in several ways. Either report the Total Actual Cost once at the end of the project/assignment or as the actual costs occur. Reference the same project code and project name when the Total Estimated Cost was originally reported. Do **NOT** break down costs by Roles.	Product Code	Project, Assignment Service Level Agreement or Reference Identification Code/Number
	Product Name	Project or Assignment Name
	Transaction Number	Client's Purchase Order # or Service Level Agreement
	Transaction Type	Enter: **Purchase**
	Start Date	Start Date of Project or Assignment (MM/DD/YY)
	End Date	Completion Date of Project (MM/DD/YY)
	Other	Enter the Stream(s) and/or sub-Stream(s) & Role(s), separate using commas.
	Estimated Cost	Total Estimated Cost of the Project or Assignment (Report Once)
	Contract Cost	Total Actual Cost of the Project or Assignment (Report at the completion of the project or as the costs occur.

APPENDIX K

PROPOSAL SUBMISSION LABEL

Proposal for Electronic Service Delivery (ESD) Consulting Services enclosed :

Request for Proposal #: **MBS-ESD-01**
Closing Date: **Friday December 21, 2001**
Closing Time:**10:00 a.m. local Toronto Time**

SEND TO:
Management Board Secretariat
Procurement Policy & Information Technology Procurement Branch
c/o Government Mail and Print Services
Mailroom, Room M2B-88, Macdonald Block
Second Basement, 77 Wellesley St. West
Toronto, Ontario M7A 1N3

Attn. Judy George-Harris

FROM:
PROPONENT'S FULL LEGAL NAME:
RETURN ADDRESS:

Instructions for this Proposal Submission Label

Fold on the above lines, then securely tape this label to the lower, right corner of the package containing your submission. The Proponent should ensure that the RFP Number is also written on the back of their bid response envelopes/boxes.

APPENDIX L

STREAM "A"
Business Process Services Stream

ESD SERVICES VOR
ROLES & RESPONSIBILITIES OF PERSONNEL

Role:	Senior Project Manager, ESD
Minimum years of related experience	10 years Project Management including 8 years of IT
Minimum years of experience in this role	4 years experience in E-Commerce

Responsibilities could include but are not limited to :

- Manages several IT Project Managers, each responsible for an individual ESD project.
- Manages the project during the development, design and operations startup by ensuring that resources are made available and that the application/system is developed and is fully operational within previously agreed time, cost and performance parameters.
- Formulates statements of management, scientific and business problems, establishes procedures for the development and design of significant, new or modified applications/systems to solve these problems, and obtains approval thereof.
- Defines and documents the objectives for the project; determines budgetary requirements, the composition, roles and responsibilities and terms of reference for the project team
- Reports progress of the project on an ongoing basis and at scheduled points in the life cycle to the sponsors of the project.
- Meets in conference with project managers and other stakeholders and states problems in a form capable of being solved.
- Prepares plans, charts, tables and diagrams to assist in analyzing or displaying problems; works with a variety of scientific, business or engineering tools requiring a sound knowledge of mathematics and management sciences.
- Project sign-off.

Competencies:
See definitions in attached Competency Glossary – no other interpretations will be considered
(NOTE: THE ID NUMBERS TO THE LEFT OF THE REQUIRED COMPETENCIES LISTED BELOW CORRESPOND TO THE GLOSSARY COMPETENCY DEFINITION ID NUMBERS)

Required & Demonstrable Knowledge: Familiarity with and understanding of a subject
Required & Demonstrable Skill: Expertise to perform a specific activity or function

	Knowledge: Internet Service Delivery
1	• Ontario Government's ESD Initiative
2	• The World Wide Web
3	• Internet, Intranets, Extranets
4	• Internet Security

	Skill: Project Management
15	• Planning a Project
16	• Organizing a Project
17	• Controlling a Project
18	• Leading a Project Team
19	• Quality Management
20	• Risk Management

21	• Managing Concurrent Multiple Projects
23	• Project Management Packages
Skill: Financial Management	
24	• Cost Analysis
25	• Budget Preparation
26	• Budget Control
Skill: Opportunity Evaluation	
27	• Conduct Opportunity Evaluation
28	• Write Project Proposal
Knowledge: Business Planning	
29	• Define Business
30	• Establish a Vision for the Business
31	• Perform an Environmental Scan
32	• Develop Strategic Direction
33	• Prepare Business Plans
34	• Communicate/Market Business Plans
35	• Implement Business Plans
Knowledge: Strategic Planning	
43	• Gather and Consolidate Relevant Data/Information
44	• Perform Environmental Scans
45	• Develop and Write a Strategic Plan
46	• Build Consensus on Strategy and Direction
Knowledge: Policy Development	
51	• Identify Policy Need/Concerns
52	• Perform Comparative Analysis of Policies
53	• Develop Policies
54	• Validate/Adjust Policies
Knowledge: Standards Development	
59	• Identify Standards Need/Concerns
60	• Perform Comparative Analysis of Standards
61	• Develop Standards
62	• Validate/Adjust Standards
Knowledge: Systems Hardware & Software	
67	• Mainframes/Minis/Micros
68	• Database Management Systems
Knowledge: Architecture	
69	• Architecture Principles
Knowledge: Application and/or System Software Construction	
82	• Software Engineering Principles
83	• System Development Life Cycle (SDLC)
84	• Modelling
85	• Methodologies
86	• Documentation
Knowledge: Integration	
87	• System Integration Principles
88	• Testing/Validation
Knowledge: Networks	
89	• Telecommunications Principles
90	• WAN
91	• LAN
92	• Gateways
93	• VPN
Knowledge: Management of IT Support Processes	
150	• Operations Related Support Processes
151	• Network Management Related Support Processes

152	• Repository Administration
153	• IT Security Management
154	• Change Management
155	• Release Management
156	• Problem Management
157	• Performance Measurement
158	• Configuration Management
159	• Capacity Planning

Role	Project Manager, ESD
Minimum years of related experience	5 years Project Management including 3 years of IT
Minimum years of experience in this role	2 years experience in E-Commerce

Responsibilities could include but are not limited to :

- Manages several IT Project Managers, each responsible for an individual ESD project.
- Manages the project during the development, design and operations startup by ensuring that resources are made available and that the application/system is developed and is fully operational within previously agreed time, cost and performance parameters.
- Formulates statements of management, scientific and business problems, establishes procedures for the development and design of significant, new or modified applications/systems to solve these problems, and obtains approval thereof.
- Defines and documents the objectives for the project; determines budgetary requirements, the composition, roles and responsibilities and terms of reference for the project team
- Reports progress of the project on an ongoing basis and at scheduled points in the life cycle to the sponsors of the project.
- Meets in conference with project managers and other stakeholders and states problems in a form capable of being solved.
- Prepares plans, charts, tables and diagrams to assist in analyzing or displaying problems; works with a variety of scientific, business or engineering tools requiring a sound knowledge of mathematics and management sciences.
- Project sign-off.

Competencies:
See definitions in attached Competency Glossary – no other interpretations will be considered
(NOTE: THE ID NUMBERS TO THE LEFT OF THE REQUIRED COMPETENCIES LISTED BELOW CORRESPOND TO THE GLOSSARY COMPETENCY DEFINITION ID NUMBERS)

Required & Demonstrable Knowledge: Familiarity with and understanding of a subject
Required & Demonstrable Skill: Expertise to perform a specific activity or function

	Knowledge: Internet Service Delivery
1	• Ontario Government's ESD Initiative
2	• The World Wide Web
3	• Internet, Intranets, Extranets
4	• Internet Security
	Skill: Project Management
15	• Planning a Project
16	• Organizing a Project
17	• Controlling a Project
18	• Leading a Project Team
19	• Quality Management
20	• Risk Management
22	• Managing Concurrent Multiple Sub-projects
23	• Project Management Packages
	Skill: Financial Management
24	• Cost Analysis
25	• Budget Preparation
26	• Budget Control
	Skill: Opportunity Evaluation
27	• Conduct Opportunity Evaluation
28	• Write Project Proposal

Knowledge: Business Planning		
29	•	Define Business
30	•	Establish a Vision for the Business
31	•	Perform an Environmental Scan
32	•	Develop Strategic Direction
33	•	Prepare Business Plans
34	•	Communicate/Market Business Plans
35	•	Implement Business Plans
Knowledge: Strategic Planning		
43	•	Gather and Consolidate Relevant Data/Information
44	•	Perform Environmental Scans
45	•	Develop and Write a Strategic Plan
46	•	Build Consensus on Strategy and Direction
Knowledge: Policy Development		
51	•	Identify Policy Need/Concerns
52	•	Perform Comparative Analysis of Policies
53	•	Develop Policies
54	•	Validate/Adjust Policies
Knowledge: Standards Development		
59	•	Identify Standards Need/Concerns
60	•	Perform Comparative Analysis of Standards
61	•	Develop Standards
62	•	Validate/Adjust Standards
Knowledge: Systems Hardware & Software		
67	•	Mainframes/Minis/Micros
68	•	Database Management Systems
Knowledge: Architecture		
69	•	Architecture Principles
Knowledge: Application and/or System Software Construction		
82	•	Software Engineering Principles
83	•	System Development Life Cycle (SDLC)
84	•	Modelling
85	•	Methodologies
86	•	Documentation
Knowledge: Integration		
87	•	System Integration Principles
88	•	Testing/Validation
Knowledge: Networks		
89	•	Telecommunications Principles
90	•	WAN
91	•	LAN
92	•	Gateways
93	•	VPN
Knowledge: Management of IT Support Processes		
150	•	Operations Related Support Processes
151	•	Network Management Related Support Processes
152	•	Repository Administration
153	•	IT Security Management
154	•	Change Management
155	•	Release Management
156	•	Problem Management
157	•	Performance Measurement
158	•	Configuration Management
159	•	Capacity Planning

Role:	**Project Administrator**
Minimum years of experience in this specific role:	1 year
Responsibilities could include but are not limited to:	

- Assists data processing professionals, technical users and end users in simple routine tasks;
- Provides administrative and technical support as required, to a project team;
- Assists in performing such tasks as maintaining project documentation and application/system libraries;
- Acts as the first point of contact in situations by accepting incoming calls, logging calls, attempting to resolve simple problems and following established procedures for more difficult problems;
- Tracks project change requests;
- Maintains and updates relevant project information in manual and/or electronic files: (e.g., project activity schedule, status reports, correspondence);
- Uses computer tools, aids, system control languages on PCs, minis, or mainframes to perform work; and
- Communicates with data processing professionals, technical users and end users on administrative matters related to the project.

Competencies:
See definitions in attached Competency Glossary – no other interpretations will be considered

(NOTE: THE ID NUMBERS TO THE LEFT OF THE REQUIRED COMPETENCIES LISTED BELOW CORRESPOND TO THE GLOSSARY COMPETENCY DEFINITION ID NUMBERS)

Required & Demonstrable Knowledge: Familiarity with and understanding of a subject
Required & Demonstrable Skill: Expertise to perform a specific activity or function

Knowledge: Internet Service Delivery	
1	• Ontario Government's ESD Initiative
Knowledge: Project Administration	
12	• General Knowledge & Terminology
Skill: Project Administration	
13	• Office Automation Suites
14	• Project Libraries
Skill: Project Management	
23	• Project Management Packages

Role:	**Business Transformation Architect**
Minimum years of related experience	10 years IT

Minimum years of experience in this role	4 years

Responsibilities could include but are not limited to :

- Provides expert advice on the key initiatives that enable enterprises to deploy high- impact, web-enabled business processes that are focused, accountable and measurable, in particular: principles of leadership; governance; principles of operational competencies, and principles of technology;
- Provides expert advice in defining new requirements and opportunities for applying efficient and effective solutions, identifies and provides preliminary costs of potential options;
- Provides expert advice in developing and integrating process and information models between business processes to eliminate information and process redundancies;
- Identifies candidate business process for re-design, prototypes potential solutions, provides tradeoff information and suggests a recommended course of action. Identifies the modifications to the automated processes;
- Analyzes business functional requirements to identify information, procedures and decision flows;
- Identifies and recommends new processes and organizational structures;
- Identifies and recommends new capability requirements and solution options; and
- Uses business modeling software tools.

Competencies:
See definitions in attached Competency Glossary – no other interpretations will be considered

(NOTE: THE ID NUMBERS TO THE LEFT OF THE REQUIRED COMPETENCIES LISTED BELOW CORRESPOND TO THE GLOSSARY COMPETENCY DEFINITION ID NUMBERS)

Required & Demonstrable Knowledge: Familiarity with and understanding of a subject
Required & Demonstrable Skill: Expertise to perform a specific activity or function

	Knowledge: Internet Service Delivery
1	• Ontario Government's ESD Initiative
2	• The World Wide Web
3	• Internet, Intranets, Extranets
4	• Internet Security
5	• Internet Service Delivery Principles and Theories
	Skill: Internet Service Delivery
6	• Establishing and Implementing Principles of Leadership
7	• Establishing and Implementing Governance & Operations Framework
8	• Establishing and Implementing Principles of Operational Competencies
9	• Establishing and Implementing Principles of Technology
10	• Establishing and Implementing Portals as Infomediaries
11	• Business Process Transformation
	Skill: Opportunity Evaluation
27	• Conduct Opportunity Evaluation
28	• Write Project Proposal
	Skill: Business Planning
36	• Define Business
37	• Establish a Vision for the Business
38	• Perform an Environmental Scan
39	• Develop Strategic Direction
40	• Prepare Business Plans
41	• Communicate/Market Business Plans
42	• Implement Business Plans
	Skill: Strategic Planning
47	• Gather and Consolidate Relevant Data/Information

48	•	Perform Environmental Scans
49	•	Develop and Write a Strategic Plan
50	•	Build Consensus on Strategy and Direction
Skill: Policy Development		
55	•	Identify Policy Need/Concerns
56	•	Perform Comparative Analysis of Policies
57	•	Develop Policies
58	•	Validate/Adjust Policies
Skill: Standards Development		
63	•	Identify Standards Need/Concerns
64	•	Perform Comparative Analysis of Standards
65	•	Develop Standards
66	•	Validate/Adjust Standards
Knowledge: Systems Hardware & Software		
67	•	Mainframes/Minis/Micros
68	•	Database Management Systems
Knowledge: Architecture		
72	•	Information Architecture
73	•	Applications Architecture
74	•	Technology Architecture
Skill: Architecture		
75	•	Business Architecture
76	•	Work Architecture
Knowledge: Application and/or System Software Construction		
82	•	Software Engineering Principles
83	•	System Development Life Cycle (SDLC)
84	•	Modelling
85	•	Methodologies
86	•	Documentation
Knowledge: Integration		
87	•	System Integration Principles
88	•	Testing/Validation
Knowledge: Networks		
89	•	Telecommunications Principles
90	•	WAN
91	•	LAN
92	•	Gateways
93	•	VPN
Knowledge: Management of IT Support Processes		
150	•	Operations Related Support Processes
151	•	Network Management Related Support Processes
152	•	Repository Administration
153	•	IT Security Management
154	•	Change Management
155	•	Release Management
156	•	Problem Management
157	•	Performance Measurement
158	•	Configuration Management
159	•	Capacity Planning
Knowledge: Security Systems		
166	•	Encryption Concepts & Standards
167	•	Secure Applications
168	•	Personnel Identification & Authentication Concepts & Technology
Knowledge: Call Centre		
174	•	Voice over IP

175	• Voice Messaging
176	• Fax Messaging
177	• Interactive Voice Response (IVR) Application Systems
178	• Automated Voice Recognition (AVR) Application Systems
179	• Automated Call Distribution (ACD)
180	• Service Request Management Systems
Knowledge: Web Development	
191	• Web Site Design
193	• Web Site Graphics
194	• Website Multimedia
198	• Internet Security Technology
200	• Internet Browsers
Knowledge: Web Development	
191	• Web Site Design
193	• Web Site Graphics
194	• Website Multimedia
198	• Internet Security Technology
200	• Internet Browsers
Skill: Business Process Re-engineering	
236	• Preliminary Activities
237	• Form the Re-engineering Team
238	• Identify BPR Opportunities
239	• Understand the Existing Process
240	• Reengineer the Process
241	• Blueprint the New Business System
242	• Perform the Transformation
Skill: Transitioning to the Virtual Workplace	
243	• Preliminary Activities
244	• Identify Virtual Workplace Opportunities
245	• Understand the Existing Process
246	• Design the Virtual Workplace Process
247	• Blueprint the Virtual Workplace
248	• Design and develop the Transformation

Role	**Business Process Assessment and Integration Specialist**
Minimum years of related experience	10 years IT
Minimum years of experience in this role	4 years
Responsibilities could include but are not limited to :	
• Analyzes and reviews business functional requirements related to customer service delivery to identify	

information, procedures and decision flows;
- Defines an ESD strategy that is consistent with the customer service delivery of the ministry/agency;
- Provides expert advice in developing and integrating process and information models between business processes to eliminate information and process redundancies;
- Identifies and recommends new processes;
- Identifies and recommends new capability requirements and solution options for implementation;
- Documents workflows; and
- Uses business, workflow and organizational modeling software tools.

Competencies:
See definitions in attached Competency Glossary – no other interpretations will be considered

(NOTE: THE ID NUMBERS TO THE LEFT OF THE REQUIRED COMPETENCIES LISTED BELOW CORRESPOND TO THE GLOSSARY COMPETENCY DEFINITION ID NUMBERS)

Required & Demonstrable Knowledge: Familiarity with and understanding of a subject
Required & Demonstrable Skill: Expertise to perform a specific activity or function

Knowledge: Internet Service Delivery		
1	•	Ontario Government's ESD Initiative
2	•	The World Wide Web
Skill: Internet Service Delivery		
11	•	Business Process Transformation
Skill: Business Planning		
38	•	Perform an Environmental Scan
39	•	Develop Strategic Direction
40	•	Prepare Business Plans
Skill: Strategic Planning		
47	•	Gather and Consolidate Relevant Data/Information
48	•	Perform Environmental Scans
49	•	Develop and Write a Strategic Plan
50	•	Build Consensus on Strategy and Direction
Skill: Architecture		
76	•	Work Architecture
Skill: Leadership		
230	•	Communicate Direction
Skill: Communicating		
231	•	Listening to Clients/Peers
232	•	Writing Clearly and Concisely
233	•	Effective Oral Presentations
234	•	Facilitation
235	•	Write Business Plans, Standards and Policies
Skill: Business Process Re-engineering		
236	•	Preliminary Activities
237	•	Form the Re-engineering Team
238	•	Identify BPR Opportunities
239	•	Understand the Existing Process
240	•	Reengineer the Process
241	•	Blueprint the New Business System
242	•	Perform the Transformation
Skill: Transitioning to the Virtual Workplace		
243	•	Preliminary Activities
244	•	Identify Virtual Workplace Opportunities
245	•	Understand the Existing Process

246	• Design the Virtual Workplace Process
247	• Blueprint the Virtual Workplace
248	• Design and develop the Transformation

	Role	Call Centre Business Analyst
	Minimum years of related experience	5 years IT
	Minimum years of experience in this role	2 years

Responsibilities could include but are not limited to :
• Provides expert advice on and/or developing and designing computer enabled call centres that permit service agents to efficiently and effectively respond to client service requests received by telephone and other electronic media;   • Provides expert advice on and/or developing Interactive Voice Response (IVR) Application systems that permit callers to obtain information or enter transactions using the telephone and keypad; and   • Provides expert advice on and/or developing service request management application systems.

Competencies: *See definitions in attached Competency Glossary – no other interpretations will be considered*   **(NOTE: THE ID NUMBERS TO THE LEFT OF THE REQUIRED COMPETENCIES LISTED BELOW CORRESPOND TO THE GLOSSARY COMPETENCY DEFINITION ID NUMBERS)**   *Required & Demonstrable Knowledge: Familiarity with and understanding of a subject*   *Required & Demonstrable Skill: Expertise to perform a specific activity or function*

Knowledge: Internet Service Delivery		
1	•	Ontario Government's ESD Initiative
2	•	The World Wide Web
3	•	Internet, Intranets, Extranets
4	•	Internet Security
Knowledge: Systems Hardware & Software		
67	•	Mainframes/Minis/Micros
68	•	Database Management Systems
Knowledge: Architecture		
69	•	Architecture Principles
Knowledge: Application and/or System Software Construction		
82	•	Software Engineering Principles
83	•	System Development Life Cycle (SDLC)
84	•	Modelling
85	•	Methodologies
86	•	Documentation
Knowledge: Integration		
87	•	System Integration Principles
88	•	Testing/Validation
Knowledge: Networks		
89	•	Telecommunications Principles
90	•	WAN
91	•	LAN
92	•	Gateways
93	•	VPN
Knowledge: Management of IT Support Processes		
150	•	Operations Related Support Processes
151	•	Network Management Related Support Processes
152	•	Repository Administration
153	•	IT Security Management
154	•	Change Management
155	•	Release Management
156	•	Problem Management

157	• Performance Measurement
158	• Configuration Management
159	• Capacity Planning
Knowledge: Call Centre	
174	• Voice over IP
175	• Voice Messaging
176	• Fax Messaging
177	• Interactive Voice Response (IVR) Application Systems
178	• Automated Voice Recognition (AVR) Application Systems
Skill: Call Centre	
185	• Automated Call Distribution (ACD)
186	• Service Request Management Systems
187	• Equipment, Networks, Services
188	• Operations
189	• Analyze Telephony Service Needs
190	• Recommend Telephony Plan of Action
Knowledge: Web Development	
191	• Web Site Design
197	• Web Site Databases
198	• Internet Security Technology
199	• Internet Protocols
200	• Internet Browsers
201	• Internet Browser Plugins
Skill: Web Development	
209	• Internet Security Technology Implementation

Role	**Wireless Application Services Specialist**
Minimum years of related experience	5 years IT
Minimum years of experience in this role	2 years

Responsibilities could include but are not limited to :

- Defines service requirements;
- Designs wireless application services; and
- Advises developers of Web based application systems on the wireless access implication of their designs.

Competencies:
See definitions in attached Competency Glossary – no other interpretations will be considered
(NOTE: THE ID NUMBERS TO THE LEFT OF THE REQUIRED COMPETENCIES LISTED BELOW CORRESPOND TO THE GLOSSARY COMPETENCY DEFINITION ID NUMBERS)

Required & Demonstrable Knowledge: Familiarity with and understanding of a subject
Required & Demonstrable Skill: Expertise to perform a specific activity or function

Knowledge: Internet Service Delivery		
1	•	Ontario Government's ESD Initiative
2	•	The World Wide Web
3	•	Internet, Intranets, Extranets
4	•	Internet Security
Knowledge: Systems Hardware & Software		
67	•	Mainframes/Minis/Micros
68	•	Database Management Systems
Knowledge: Architecture		
69	•	Architecture Principles
Knowledge: Application and/or System Software Construction		
82	•	Software Engineering Principles
83	•	System Development Life Cycle (SDLC)
84	•	Modelling
85	•	Methodologies
86	•	Documentation
Knowledge: Integration		
87	•	System Integration Principles
88	•	Testing/Validation
Knowledge: Networks		
89	•	Telecommunications Principles
90	•	WAN
91	•	LAN
92	•	Gateways
93	•	VPN
Knowledge: Wireless Application Services		
169	•	Wireless Hand-held Devices, Associated Hardware & Software
170	•	Wireless Manipulation Language
171	•	Wireless Application Protocol (WAP)
172	•	Cellular Radio Multiple Access Protocols (CDMA, TDMA, CDPD, GSM)
173	•	Geo-position Sensing (GPS)
Knowledge: Web Development		
198	•	Internet Security Technology

	Role	IT Security Specialist
	Minimum years of related experience	5 years IT
	Minimum years of experience in this role	3 years

Responsibilities could include but are not limited to :

- Develops IT security policies, standards, guidelines and procedures;
- Reviews existing security policies, standards, guidelines, and procedures and providing advice as to their appropriateness and effectiveness;
- Conducts compliance audits of IT operations, application systems and infrastructure;
- Conducts security threat and risk assessments of IT facilities, application systems and communications;
- Conducts reviews of backup and recovery plans;
- Investigates security incidents and reporting causes and related weaknesses and recommending remedies;
- Designs the security framework and the security components of IT infrastructure required to protect assets and to support application systems;
- Provides advice on the security aspects of application systems under development; and
- Develops and delivers IT Security awareness and training programs.

Competencies:
See definitions in attached Competency Glossary – no other interpretations will be considered

(NOTE: THE ID NUMBERS TO THE LEFT OF THE REQUIRED COMPETENCIES LISTED BELOW CORRESPOND TO THE GLOSSARY COMPETENCY DEFINITION ID NUMBERS)

Required & Demonstrable Knowledge: Familiarity with and understanding of a subject
Required & Demonstrable Skill: Expertise to perform a specific activity or function

Knowledge: Electronic Service Delivery

1	• Ontario Government's ESD initiative
2	• World Wide Web
3	• Internet, Intranet , Extranet
4	• Internet Security and Privacy

Skill: Project Management

20	• Risk Management

Skill: Strategic Planning

47	• Gather and Consolidate Relevant Data/Information
48	• Perform Environmental Scans
49	• Develop and Write a Strategic Plan
50	• Build Consensus on Strategy and Direction

Skill: Policy Development

55	• Identify Policy Need/Concerns
56	• Perform Comparative Analysis of Policies
57	• Develop Policies
58	• Validate/Adjust Policies

Skill: Standards Development

63	• Identify Standards Need/Concerns
64	• Perform Comparative Analysis of Standards
65	• Develop Standards
66	• Validate/Adjust Standards

Knowledge: Systems Hardware & Software

67	• Mainframes/Minis/Micros
68	• Database Management Systems

Knowledge: Architecture

70	• Business Architecture

71	• Work Architecture
72	• Information Architecture
73	• Applications Architecture
74	• Technology Architecture
Knowledge: Application and/or System Software Construction	
82	• Software Engineering Principles
83	• System Development Life Cycle (SDLC)
Knowledge: Integration	
87	• System Integration Principles
88	• Testing/Validation
Knowledge: Management of IT Support Processes	
150	• Operations Related Support Processes
151	• Network Management Related Support Processes
152	• Repository Administration
153	• IT Security Management
154	• Change Management
155	• Release Management
156	• Problem Management
Skill: Management of IT Support Processes	
164	• Define Security Management Procedures
Knowledge: Security Systems	
166	• Encryption Concepts & Standards
167	• Secure Applications
168	• Personnel Identification & Authentication Concepts & Technology
Knowledge: Call Centre	
181	• Equipment, Networks, Services
182	• Operations
Knowledge: Web Development	
198	• Internet Security Technology

Role	**Web Multi-media Content Specialist**
Minimum years of related experience	4 Years general Multi-media design and development
Minimum years of experience in this role	2 years

Responsibilities could include but are not limited to :

- Develops and tests usability, analyzes results and modifies design accordingly;
- Develops flowcharts (Site Maps) depicting navigation and basic content;
- Develops line drawings or block diagrams illustrating the priority of information, links navigation and space requirements;
- Develops content diagrams showing the interactive connection between pages;
- Develops interactive prototypes showing basic form and functionality that are used for both usability testing and presentations; and
- Works closely with programming team for creating effective WEB pages.

Competencies:
See definitions in attached Competency Glossary – no other interpretations will be considered
(NOTE: THE ID NUMBERS TO THE LEFT OF THE REQUIRED COMPETENCIES LISTED BELOW CORRESPOND TO THE GLOSSARY COMPETENCY DEFINITION ID NUMBERS)

Required & Demonstrable Knowledge: Familiarity with and understanding of a subject
Required & Demonstrable Skill: Expertise to perform a specific activity or function

Knowledge: Internet Service Delivery	
1	• Ontario Government's ESD Initiative
2	• The World Wide Web
3	• Internet, Intranets, Extranets
4	• Internet Security
Knowledge: Web Development	
191	• Web Site Design
192	• Web Site Authoring Tools
193	• Web Site Graphics
194	• Website Multimedia
195	• Virtual Reality Modeling Language (VRML)
198	• Internet Security Technology
199	• Internet Protocols
200	• Internet Browsers
201	• Internet Browser Plugins
Skill: Web Development	
207	• Usability
208	• Web Site Databases
209	• Internet Security Technology Implementation
210	• Skill in the use of Desktop Publishing Packages
211	• Skill in the use of Web site Content Development Packages

Role	**Systems Auditor**
Minimum years of related experience	10 years IT
Minimum years of experience in this role	4 years

Responsibilities could include but are not limited to :

- Reviews organizational IT policy, standards and procedures and providing advice on their adequacy.
- Conducts systems under development reviews by reviewing project documentation, conducting interviews, assessing work completed, and based on findings reporting on compliance with policy, standards and procedures; and progress against plan.
- Conducts reviews of systems recently implemented and reporting:
    - Benefits actually achieved versus projected benefits,
    - Features actually delivered versus stated requirements,
    - The adequacy of controls and system security features,
    - User satisfaction based on surveys or interviews,
    - System performance and reliability; and
- Reviews systems that have been in production status for some time and reporting on issues and deficiencies.

Competencies:
See definitions in attached Competency Glossary – no other interpretations will be considered

(NOTE: THE ID NUMBERS TO THE LEFT OF THE REQUIRED COMPETENCIES LISTED BELOW CORRESPOND TO THE GLOSSARY COMPETENCY DEFINITION ID NUMBERS)

Required & Demonstrable Knowledge: Familiarity with and understanding of a subject
Required & Demonstrable Skill: Expertise to perform a specific activity or function

Knowledge: Internet Service Delivery		
1	•	Ontario Government's ESD Initiative
2	•	The World Wide Web
3	•	Internet, Intranets, Extranets
4	•	Internet Security
Skill: Project Management		
19	•	Quality Management
20	•	Risk Management
Skill: Financial Management		
24	•	Cost Analysis
Knowledge: Business Planning		
35	•	Implement Business Plans
Knowledge: Standards Development		
60	•	Perform Comparative Analysis of Standards
61	•	Develop Standards
62	•	Validate/Adjust Standards
Knowledge: Systems Hardware & Software		
67	•	Mainframes/Minis/Micros
68	•	Database Management Systems
Knowledge: Architecture		
70	•	Business Architecture
71	•	Work Architecture
72	•	Information Architecture
73	•	Applications Architecture
74	Technology Architecture	
Knowledge: Application and/or System Software Construction		
82	•	Software Engineering Principles
83	•	System Development Life Cycle (SDLC)

84	•	Modelling
85	•	Methodologies
86	•	Documentation
Knowledge: Integration		
87	•	System Integration Principles
88	•	Testing/Validation
Knowledge: Networks		
89	•	Telecommunications Principles
90	•	WAN
91	•	LAN
92	•	Gateways
93	•	VPN
Skill: Application Construction & Integration: *Implementation*		
140	•	Evaluate System - Post Implementation
Knowledge: Management of IT Support Processes		
150	•	Operations Related Support Processes
151	•	Network Management Related Support Processes
152	•	Repository Administration
153	•	IT Security Management
154	•	Change Management
155	•	Release Management
156	•	Problem Management
157	•	Performance Measurement
158	•	Configuration Management
159	•	Capacity Planning
Knowledge: Security Systems		
166	•	Encryption Concepts & Standards
167	•	Secure Applications
168	•	Personnel Identification & Authentication Concepts & Technology
Knowledge: Web Development		
191	•	Web Site Design
198	•	Internet Security Technology
200	•	Internet Browsers

	Role	Quality and Performance Management Specialist
	Minimum years of related experience	6 years IT
	Minimum years of experience in this role	3 years

Responsibilities could include but are not limited to :

- Designs methodology to monitor and assess the benefits of ESD projects;
- Assesses and evaluates the ESD projects to determine how stakeholders are benefiting from the electronic delivery of services and provides feedback;
- Prepares reports and makes recommendations for improvement in the delivery of ESD;
- Develops quality assurance policies, procedures, metrics, forms and tools;
- Develops software development standards;
- Confirms that the quality assurance process is being adhered to.
- Makes recommendations for improvement; and
- Quality management.

Competencies:
See definitions in attached Competency Glossary – no other interpretations will be considered

(NOTE: THE ID NUMBERS TO THE LEFT OF THE REQUIRED COMPETENCIES LISTED BELOW CORRESPOND TO THE GLOSSARY COMPETENCY DEFINITION ID NUMBERS)

Required & Demonstrable Knowledge: Familiarity with and understanding of a subject
Required & Demonstrable Skill: Expertise to perform a specific activity or function

Knowledge: Internet Service Delivery	
1	• Government-On-Line (GOL) Initiative
2	• The World Wide Web
3	• Internet, Intranets, Extranets
4	• Internet Security
Skill: Project Management	
19	• Quality Management
Knowledge: Standards Development	
60	• Perform Comparative Analysis of Standards
61	• Develop Standards
62	• Validate/Adjust Standards
Knowledge: Systems Hardware & Software	
67	• Mainframes/Minis/Micros
68	• Database Management Systems
Knowledge: Architecture	
70	• Business Architecture
71	• Work Architecture
72	• Information Architecture
73	• Applications Architecture
74	• Technology Architecture
Knowledge: Application and/or System Software Construction	
82	• Software Engineering Principles
83	• System Development Life Cycle (SDLC)
84	• Modelling
85	• Methodologies
86	• Documentation
Knowledge: Integration	
87	• System Integration Principles

88	•	Testing/Validation
Knowledge: Networks		
89	•	Telecommunications Principles
90	•	WAN
91	•	LAN
92	•	Gateways
93	•	VPN
Knowledge: System Testing		
141	•	Testing Tools & Techniques
Knowledge: Management of IT Support Processes		
150	•	Operations Related Support Processes
151	•	Network Management Related Support Processes
152	•	Repository Administration
153	•	IT Security Management
154	•	Change Management
155	•	Release Management
156	•	Problem Management
157	•	Performance Measurement
158	•	Configuration Management
159	•	Capacity Planning
Knowledge: Security Systems		
166	•	Encryption Concepts & Standards
167	•	Secure Applications
168	•	Personnel Identification & Authentication Concepts & Technology
Knowledge: Web Development		
191	•	Web Site Design
198	•	Internet Security Technology
200	•	Internet Browsers

Role	Language Translation Specialist
Minimum years of experience in this role	3 years

Responsibilities could include but are not limited to :

- Ensures all translations for ESD are undertaken in accordance with the French Language Services Act and related policies;
- Selects the appropriate supplier for the job from list of approved suppliers based on information available in the Translation Tracking System;
- Provides complete instructions to suppliers, including special requirements for ESD; and
- Proficiency in English and French.

Competencies: *See definitions in attached Competency Glossary – no other interpretations will be considered* **(NOTE: THE ID NUMBERS TO THE LEFT OF THE REQUIRED COMPETENCIES LISTED BELOW CORRESPOND TO THE GLOSSARY COMPETENCY DEFINITION ID NUMBERS)** *Required & Demonstrable Knowledge: Familiarity with and understanding of a subject* *Required & Demonstrable Skill: Expertise to perform a specific activity or function*

Knowledge: Electronic Service Delivery	
1	Ontario Government's ESD initiative
2	World Wide Web
3	Internet, Intranet , Extranet
Knowledge: Web Development	
204	Web Site Authoring Tools
Knowledge: French Translation and Proof Reading Services	
	Competency in French language translation and French Language Services Act and related policies

Role	**Privacy Specialist**
Minimum years of related experience	6 years IT
Minimum years of experience in this category	3 years

Responsibilities could include but are not limited to :

- Ensures the privacy issues have been covered through policies and standards to:
- Builds trust in data integrity
- Builds confidence and trust in the minds of customers that their records conform to industry standards
- Supports authentication of electronic records
- Ensures the integrity of the computer system to be reliable and trustworthy for all intended purposes
- Defines the standards for Electronic Information and Record Management (EIRM) programs in accordance to ISO 15489 Records Management Standards;
- Works with technical staff to ensure proper software has been implemented to ensure the privacy of the information;
- Provides guidance and framework for compliance to ISO 9000 and ISO 14000 standards; and
- Creates and manages procedures manuals or Internet web pages which covers the following issues:
    - Data Capture
    - Data migration
    - Index entry, retention, recovery process
    - Authentication process
    - File transmission
    - Information retention, destruction
    - System maintenance programs
    - Security and protection
    - Electronic signatures

Competencies:
See definitions in attached Competency Glossary – no other interpretations will be considered

(NOTE: THE ID NUMBERS TO THE LEFT OF THE REQUIRED COMPETENCIES LISTED BELOW CORRESPOND TO THE GLOSSARY COMPETENCY DEFINITION ID NUMBERS)

Required & Demonstrable Knowledge: Familiarity with and understanding of a subject
Required & Demonstrable Skill: Expertise to perform a specific activity or function

Knowledge: Electronic Service Delivery	
1	Ontario Government's ESD initiative
2	World Wide Web
3	Internet, Intranet , Extranet
4	Internet Security and Privacy
Skill: Project Management	
20	• Risk Management
Skill: Strategic Planning	
47	• Gather and Consolidate Relevant Data/Information
48	• Perform Environmental Scans
49	• Develop and Write a Strategic Plan
50	• Build Consensus on Strategy and Direction
Skill: Policy Development	
55	• Identify Policy Need/Concerns
56	• Perform Comparative Analysis of Policies
57	• Develop Policies
58	• Validate/Adjust Policies
Skill: Standards Development	

63	•	Identify Standards Need/Concerns
64	•	Perform Comparative Analysis of Standards
65	•	Develop Standards
66	•	Validate/Adjust Standards
Knowledge: Systems Hardware & Software		
67	•	Mainframes/Minis/Micros
68	•	Database Management Systems
Knowledge: Architecture		
70	•	Business Architecture
71	•	Work Architecture
72	•	Information Architecture
73	•	Applications Architecture
74	•	Technology Architecture
Knowledge: Application and/or System Software Construction		
82	•	Software Engineering Principles
83	•	System Development Life Cycle (SDLC)
Knowledge: Integration		
87	•	System Integration Principles
88	•	Testing/Validation
Knowledge: Management of IT Support Processes		
150	•	Operations Related Support Processes
151	•	Network Management Related Support Processes
152	•	Repository Administration
153	•	IT Security Management
154	•	Change Management
155	•	Release Management
156	•	Problem Management
Skill: Management of IT Support Processes		
164	•	Define Security Management Procedures
Knowledge: Security Systems		
166	•	Encryption Concepts & Standards
167	•	Secure Applications
168	•	Personnel Identification & Authentication Concepts & Technology
Knowledge: Call Centre		
181	•	Equipment, Networks, Services
182	•	Operations
Knowledge: Web Development		
198	•	Internet Security Technology

Role	**Customer Relationship Management (CRM) Specialist**
Minimum years of related experience	6 years IT
Minimum years of experience in this role	2 years

Responsibilities could include but are not limited to :

- Establishes, maintains and shares knowledge of the industry's best practices in the electronic delivery services;
- Reviews and provides input regarding ESD project plans, providing customer feedback related to technical requirements;
- Maintains current knowledge of all products and applications by participating in training sessions, release notes, development team meeting, project management, and Q&A;
- Understands clients' requirements and assists in resolving highly technical problems;
- Maintains an advanced understand of the CRM and Loss Prevention applications;
- Creates awareness of how business process improvements can be further enhanced by ESD technology;
- Develops the technology infrastructure to more effectively and efficiently manage portfolio of clients within the G2C, G2G and G2B space of the connected economy;
- Utilizes a comprehensive methodology that includes client segmentation strategies, database marketing, application integration using CRM solution providers products such as Siebel, Clarify, Genesys, Remedy and Scopus.

Competencies:
See definitions in attached Competency Glossary – no other interpretations will be considered
(NOTE: THE ID NUMBERS TO THE LEFT OF THE REQUIRED COMPETENCIES LISTED BELOW CORRESPOND TO THE GLOSSARY COMPETENCY DEFINITION ID NUMBERS)
Required & Demonstrable Knowledge: Familiarity with and understanding of a subject   *Required & Demonstrable Skill: Expertise to perform a specific activity or function*

	Knowledge: Electronic Service Delivery
1	Ontario Government's ESD initiative
2	World Wide Web
3	Internet, Intranet , Extranet
4	Internet Security and Privacy
Skill: Strategic Planning	
47	• Gather and Consolidate Relevant Data/Information
48	• Perform Environmental Scans
49	• Develop and Write a Strategic Plan
50	• Build Consensus on Strategy and Direction
Skill: Policy Development	
55	• Identify Policy Need/Concerns
56	• Perform Comparative Analysis of Policies
57	• Develop Policies
58	• Validate/Adjust Policies
Skill: Standards Development	
63	• Identify Standards Need/Concerns
64	• Perform Comparative Analysis of Standards
65	• Develop Standards
66	• Validate/Adjust Standards
Knowledge: Systems Hardware & Software	
67	• Mainframes/Minis/Micros
68	• Database Management Systems
Knowledge: Architecture	

72	• Information Architecture
73	• Applications Architecture
74	• Technology Architecture
Skill: Architecture	
75	• Business Architecture
76	• Work Architecture
Knowledge: Application and/or System Software Construction	
82	• Software Engineering Principles
83	• System Development Life Cycle (SDLC)
84	• Modelling
85	• Methodologies
86	• Documentation
Knowledge: Security Systems	
166	Encryption Concepts and Standards
167	Secure Applications
Knowledge: Call Centre	
174	Voice over IP
175	Voice Messaging
176	Fax Messaging
177	Interactive Voice Response (IVR) Application Systems
178	Automated Voice Recognition (AVR) Application Systems
179	Automated Call Distribution (ACD)
180	Service Request Management Systems
Knowledge: Web Development	
191	Web Site Design
193	Web Site Graphics
194	Website Multimedia
198	Internet Security Technology
200	Internet Browsers

APPENDIX M

STREAM "B"
Enabled IT Services Stream

ESD SERVICES VOR
ROLES & RESPONSIBILITIES OF PERSONNEL

Role:	**Senior ESD Project Manager, IT**
Minimum years of related experience:	10 years Project Management *including* 6 years IT
Minimum years of experience in this specific Role:	5 years

Responsibilities *could* include but are not limited to:

- Manages several IT Stream Project Managers, each responsible for an individual ESD IT stream;
- Manages the project during the development, design and operations startup by ensuring that resources are made available and that the application/system is developed and is fully operational within previously agreed time, cost and performance parameters;
- Formulates statements of management, scientific and business problems, establishes procedures for the development and design of significant, new or modified applications/systems to solve these problems, and obtains approval thereof;
- Defines and documents the objectives for the project; determines budgetary requirements and the composition, roles and responsibilities and terms of reference for the project team;
- Reports progress of the project on an ongoing basis and at scheduled points in the life cycle to the sponsors of the project;
- Meets in conference with project managers and other stakeholders and states problems in a form capable of being solved;
- Prepares plans, charts, tables and diagrams to assist in analyzing or displaying problems;
- Works with a variety of scientific, business or engineering tools requiring a sound knowledge of mathematics and management sciences; and
- Project sign-off.

Competencies:
See definitions in attached Competency Glossary – no other interpretations will be considered

(NOTE: THE ID NUMBERS TO THE LEFT OF THE REQUIRED COMPETENCIES LISTED BELOW CORRESPOND TO THE GLOSSARY COMPETENCY DEFINITION ID NUMBERS)
Required & Demonstrable Knowledge: Familiarity with and understanding of a subject
Required & Demonstrable Skill: Expertise to perform a specific activity or function

Knowledge: Electronic Service Delivery (ESD)		
1	•	Electronic Service Delivery (ESD) Initiative
2	•	The World Wide Web
3	•	Internet, Intranets, Extranets
4	•	Internet Security
5	•	Internet Service Delivery Principles and Theories
Skill: Project Management		
15	•	Planning a Project
16	•	Organizing a Project
17	•	Controlling a Project
18	•	Leading a Project Team
19	•	Quality Management

20	•	Risk Management
22	•	Managing Concurrent Multiple Sub-projects
23	•	Project Management Packages
Skill: Financial Management		
24	•	Cost Analysis
25	•	Budget Preparation
26	•	Budget Control
Skill: Opportunity Evaluation		
27	•	Conduct Opportunity Evaluation
28	•	Write Project Proposal
Knowledge: Business Planning		
29	•	Define Business
30	•	Establish a Vision for the Business
31	•	Perform an Environmental Scan
32	•	Develop Strategic Direction
33	•	Prepare Business Plans
34	•	Communicate/Market Business Plans
35	•	Implement Business Plans
Knowledge: Strategic Planning		
43	•	Gather and Consolidate Relevant Data/Information
44	•	Perform Environmental Scans
45	•	Develop and Write a Strategic Plan
46	•	Build Consensus on Strategy and Direction
Knowledge: Policy Development		
51	•	Identify Policy Need/Concerns
52	•	Perform Comparative Analysis of Policies
53	•	Develop Policies
54	•	Validate/Adjust Policies
Knowledge: Standards Development		
59	•	Identify Standards Need/Concerns
60	•	Perform Comparative Analysis of Standards
61	•	Develop Standards
62	•	Validate/Adjust Standards
Knowledge: Systems Hardware & Software		
67	•	Mainframes/Minis/Micros
68	•	Database Management Systems
Knowledge: Architecture		
69	•	Architecture Principles
Knowledge: Application and/or System Software Construction		
82	•	Software Engineering Principles
83	•	System Development Life Cycle (SDLC)
84	•	Modelling
85	•	Methodologies
86	•	Documentation
Knowledge: Integration		
87	•	System Integration Principles
88	•	Testing/Validation
Knowledge: Networks		
89	•	Telecommunications Principles
90	•	WAN
91	•	LAN
92	•	Gateways
93	•	VPN
Knowledge: Management of IT Support Processes		
150	•	Operations Related Support Processes

151	•	Network Management Related Support Processes
152	•	Repository Administration
153	•	IT Security Management
154	•	Change Management
155	•	Release Management
156	•	Problem Management
157	•	Performance Measurement
158	•	Configuration Management
159	•	Capacity Planning
Knowledge: Wireless m-Commerce		
169	•	Wireless Solutions Products
170	•	Wireless Manipulation Language
171	•	Wireless Application Protocol (WAP)
172	•	Cellular Radio Multiple Access Protocols
173	•	Geo-Position Sensing (GPS)
174	•	Voice over IP (VOIP)
Knowledge: Call Centre		
175	•	Voice Messaging
176	•	Fax Messaging
177	•	Interactive Voice Response (IVR) Application Systems
178	•	Automated Voice Recognition (AVR) Application Systems
179	•	Automated Call Distribution (ACD)
180	•	Service Request Management Systems
181	•	Equipment, Networks, Services
182	•	Operations
183	•	Analyze Telephony Service Needs
184	•	Recommend Telephony Plan of Action
Knowledge: Web Development		
191	•	Web Site Design
192	•	Web Site Authoring Tools
198	•	Internet Security Technology
199	•	Internet Protocols
200	•	Internet Browsers
201	•	Internet Browser Plugins
202	•	Web Servers
Knowledge: e-Commerce		
212	•	E-Commerce Standards
213	•	E-Commerce Architecture
214	•	E-Commerce Security Issues
215	•	E-Commerce Protocols

Role:	**Project Integration Manager**
Minimum years of related experience:	10 years IT
Minimum years of experience in this specific Role:	4 years

Responsibilities could include but are not limited to:

- Acts as the singular contact between different project managers;
- Advises management about the different phases of the project and resources required to complete it;
- Accounts for the 24 hour by 7 day support of the business, in so far as design and maintenance of systems are concerned;
- Plans the integration at the subsystem and system levels;
- Creates integration workspaces;
- Creates baselines;
- Verifies changes in building and promoting baselines;
- Works closely with the team members, e.g. Technology Coordinator, to integrate the project;
- Establishes and/or approves priorities and schedules; provides technical specifications for RFPs and participates in selection and contract/SLA negotiations from Architectural standpoint; allocates work to staff or consultants; leads and co-ordinates; ensures compliance with relevant corporate I&IT strategy, standards, policies and protocols;
- Provides milestone reports to client's senior management, I&IT senior management and other project stakeholders on an ongoing basis and at scheduled points in the life cycle to the project manager;
- Works closely with the project manager and other team members to prepare plans, charts, tables and diagrams to assist in analyzing or displaying problems;
- Works with a variety of scientific, business or engineering tools requiring a sound knowledge of mathematics and management sciences;
- Provides leadership to direct the planning, organization and control of development projects from concept to the design of the solutions;
- Understands the business and technology priorities and effectively communicates technology changes to the business; and
- Accounts for the 24 hour by 7-day support of the business, in so far as design and maintenance of systems are concerned.

Competencies:
See definitions in attached Competency Glossary – no other interpretations will be considered

(NOTE: THE ID NUMBERS TO THE LEFT OF THE REQUIRED COMPETENCIES LISTED BELOW CORRESPOND TO THE GLOSSARY COMPETENCY DEFINITION ID NUMBERS)
Required & Demonstrable Knowledge: Familiarity with and understanding of a subject
Required & Demonstrable Skill: Expertise to perform a specific activity or function

Knowledge: Electronic Service Delivery (ESD)		
1	•	Electronic Service Delivery (ESD) Initiative
2	•	The World Wide Web
3	•	Internet, Intranets, Extranets
4	•	Internet Security
5	•	Internet Service Delivery Principles and Theories
Knowledge: Business Planning		
29	•	Define Business
30	•	Establish a Vision for the Business
31	•	Perform an Environmental Scan
32	•	Develop Strategic Direction
33	•	Prepare Business Plans
34	•	Communicate/Market Business Plans
35	•	Implement Business Plans

Skill: Policy Development		
55	•	Identify Policy Need/Concerns
56	•	Perform Comparative Analysis of Policies
57	•	Develop Policies
58	•	Validate/Adjust Policies
Skill: Standards Development		
63	•	Identify Standards Need/Concerns
64	•	Perform Comparative Analysis of Standards
65	•	Develop Standards
66	•	Validate/Adjust Standards
Knowledge: Systems Hardware & Software		
67	•	Mainframes/Minis/Micros
68	•	Database Management Systems
Knowledge: Architecture		
70	•	Business Architecture
71	•	Work Architecture
73	•	Applications Architecture
74	•	Technology Architecture
Knowledge: Application and/or System Software Construction		
82	•	Software Engineering Principles
83	•	System Development Life Cycle (SDLC)
84	•	Modelling
85	•	Methodologies
86	•	Documentation
Knowledge: Integration		
87	•	System Integration Principles
88	•	Testing/Validation
Knowledge: Networks		
89	•	Telecommunications Principles
90	•	WAN
91	•	LAN
92	•	Gateways
93	•	VPN
Knowledge: Management of IT Support Processes		
150	•	Operations Related Support Processes
151	•	Network Management Related Support Processes
152	•	Repository Administration
153	•	IT Security Management
154	•	Change Management
155	•	Release Management
156	•	Problem Management
157	•	Performance Measurement
158	•	Configuration Management
159	•	Capacity Planning
Knowledge: Security Systems		
166	•	Encryption Concepts & Standards
167	•	Secure Applications
168	•	Personnel Identification & Authentication Concepts & Technology
Skill: Application Construction & Integration: *Functional Design*		
127	•	Build Functional Data Model
Skill: Management of IT Support Processes		
160	•	Define Configuration Management Procedures
161	•	Define Change Management Procedures
162	•	Define Release Management Procedures

163	•	Define Problem Management Procedures
Skill: Application Construction & Integration: *Preliminary Analysis*		
116	•	Build Conceptual Data Model
Skill: Application Construction & Integration: *Functional Design*		
127	•	Build Functional Data Model
Skill: Architecture		
77	•	Information Architecture
Knowledge: Wireless m-Commerce		
169	•	Wireless Solutions Products
170	•	Wireless Manipulation Language
171	•	Wireless Application Protocol (WAP)
172	•	Cellular Radio Multiple Access Protocols
173	•	Geo-Position Sensing (GPS)
174	•	Voice over IP (VOIP)
Knowledge: Call Centre		
175	•	Voice Messaging
176	•	Fax Messaging
177	•	Interactive Voice Response (IVR) Application Systems
178	•	Automated Voice Recognition (AVR) Application Systems
179	•	Automated Call Distribution (ACD)
180	•	Service Request Management Systems
181	•	Equipment, Networks, Services
182	•	Operations
183	•	Analyze Telephony Service Needs
184	•	Recommend Telephony Plan of Action
Knowledge: Web Development		
191	•	Web Site Design
192	•	Web Site Authoring Tools
198	•	Internet Security Technology
199	•	Internet Protocols
200	•	Internet Browsers
201	•	Internet Browser Plugins
202	•	Web Servers
Knowledge: e-Commerce		
212	•	e-Commerce Standards
213	•	e-Commerce Architecture
214	•	e-Commerce Security Issues
215	•	e-Commerce Protocols
Skill: Transitioning to the Virtual Workplace		
243	•	Preliminary Activities
244	•	Identify Virtual Workplace Opportunities
245	•	Understand the Existing Process
246	•	Design the Virtual Workplace Process
247	•	Blueprint the Virtual Workplace
248	•	Design and develop the Transformation

Role:	**Technology Coordinator**
Minimum years of related experience:	10 years IT
Minimum years of experience in this specific Role:	4 years

Responsibilities <u>could</u> include but are not limited to:

- Works closely with the members of the hardware, software and network teams to integrate the project;
- Compiles information about the progress of the project on an ongoing basis and at scheduled points in the life cycle to the project manager;
- Works closely with the project manager and other team members to ensure information is shared;
- Provide leadership to direct the planning, organization and control of development projects from concept to the design of the solutions;
- Conducts technical feasibility studies of proposed solutions in order to evaluate the technical issues and options of the proposals as well as the technical impact, costs and risks to the projects;
- Conducts technical research into evolving technologies;
- Organizes and presents technical information in a lucid and convincing manner;
- Typical related service delivery processes including client access procedures, security and contingency procedures, performance monitoring procedures and standards to plan and design architectural components of the overall Project and ensure delivery of services according to standards or client agreements;
- Provides assistance to other team members in designing and managing multiple stream architecture on diverse hardware platforms;
- Understands the business and technology priorities and effectively communicates technology changes to the business; and
- Accounts for the 24 hour by 7-day support of the business, in so far as design and maintenance of systems are concerned.

Competencies:
<u>*See definitions in attached Competency Glossary – no other interpretations will be considered*</u>

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Required & Demonstrable Skill: <u>Expertise to perform a specific activity or function</u>

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1	• Electronic Service Delivery (ESD) Initiative
2	• The World Wide Web
3	• Internet, Intranets, Extranets
4	• Internet Security
5	• Internet Service Delivery Principles and Theories
Skill: Policy Development	
55	• Identify Policy Need/Concerns
56	• Perform Comparative Analysis of Policies
57	• Develop Policies
58	• Validate/Adjust Policies
Skill: Standards Development	
63	• Identify Standards Need/Concerns
64	• Perform Comparative Analysis of Standards
65	• Develop Standards
66	• Validate/Adjust Standards
Knowledge: Systems Hardware & Software	
67	• Mainframes/Minis/Micros
68	• Database Management Systems
Knowledge: Architecture	
70	• Business Architecture

71	•	Work Architecture
72	•	Information Architecture
73	•	Applications Architecture
Skill: Architecture		
79	•	Technology Architecture
Knowledge: Application and/or System Software Construction		
82	•	Software Engineering Principles
83	•	System Development Life Cycle (SDLC)
84	•	Modelling
85	•	Methodologies
86	•	Documentation
Knowledge: Integration		
87	•	System Integration Principles
88	•	Testing/Validation
Knowledge: Networks		
89	•	Telecommunications Principles
90	•	WAN
91	•	LAN
92	•	Gateways
93	•	VPN
Skill: Network Integration		
94	•	Develop Plan
95	•	Conduct Capacity Planning
96	•	Design Network
97	•	Perform Cost/Benefit Analysis
Skill: Hardware Integration		
100	•	Develop Plan
101	•	Conduct Capacity Planning
102	•	Define Hardware Platform
103	•	Perform Cost/Benefit Analysis
Skill: Software Integration		
107	•	Develop Plan
108	•	Conduct Capacity Planning
109	•	Define System/Infrastructure
110	•	Perform Cost/Benefit Analysis
Knowledge: Management of IT Support Processes		
150	•	Operations Related Support Processes
151	•	Network Management Related Support Processes
152	•	Repository Administration
153	•	IT Security Management
154	•	Change Management
155	•	Release Management
156	•	Problem Management
157	•	Performance Measurement
158	•	Configuration Management
159	•	Capacity Planning
Skill: Management of IT Support Processes		
160	•	Define Configuration Management Procedures
161	•	Define Change Management Procedures
162	•	Define Release Management Procedures
163	•	Define Problem Management Procedures
165	•	Define Documentation Maintenance Procedures
Knowledge: Security Systems		
166	•	Encryption Concepts & Standards

167	•	Secure Applications
168	•	Personnel Identification & Authentication Concepts & Technology
Knowledge: Wireless m-Commerce		
169	•	Wireless Solutions Products
170	•	Wireless Manipulation Language
171	•	Wireless Application Protocol (WAP)
172	•	Cellular Radio Multiple Access Protocols
173	•	Geo-Position Sensing (GPS)
Knowledge: Call Centre		
174	•	Voice over IP
175	•	Voice Messaging
176	•	Fax Messaging
177	•	Interactive Voice Response (IVR) Application Systems
178	•	Automated Voice Recognition (AVR) Application Systems
179	•	Automated Call Distribution (ACD)
180	•	Service Request Management Systems
181	•	Equipment, Networks, Services
182	•	Operations
183	•	Analyze Telephony Service Needs
184	•	Recommend Telephony Plan of Action
Knowledge: Web Development		
191	•	Web Site Design
192	•	Web Site Authoring Tools
198	•	Internet Security Technology
199	•	Internet Protocols
200	•	Internet Browsers
201	•	Internet Browser Plugins
202	•	Web Servers
Knowledge: e-Commerce		
212	•	e-Commerce Standards
213	•	e-Commerce Architecture
214	•	e-Commerce Security Issues
215	•	e-Commerce Protocols

Role:	**Project Manager, WEB**
Minimum years of related experience:	4 years Project Management *plus* 5 years IT
Minimum years of experience in this Role:	3 years

Responsibilities could include but are not limited to:

- Manages the project during the development, design and operations startup by ensuring that resources are made available and that the application/system is developed and is fully operational within previously agreed time, cost and performance parameters;
- Formulates statements of management, scientific and business problems, establishes procedures for the development and design of significant, new or modified applications/systems to solve these problems, and obtains approval thereof;
- Defines and documents the objectives for the project; determines budgetary requirements, the composition, roles and responsibilities and terms of reference for the project team;
- Reports progress of the project on an ongoing basis to the client and at scheduled points in the life cycle to the sponsors of the project;
- Prepares plans, charts, tables and diagrams to assist in analyzing or displaying problems;
- Works with a variety of scientific, business or engineering tools requiring a sound knowledge of mathematics and management sciences;
- Provides leadership to direct the planning, organization and control of development projects from concept to the design of the solutions;
- Works with business partners and other technology areas to identify prospective business needs and develop strategies to match those needs;
- Understands the business and technology priorities and effectively communicates technology changes to the business;
- Accounts for the 24 hour by 7 day support of the business, in so far as design and maintenance of systems are concerned;
- Holds regular one-on-one meetings with staff for feedback, coaching, career development and performance status;
- Conducts mid-year and year-end performance reviews with each team member; and
- Project sign-off.

Competencies:
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Required & Demonstrable Skill: Expertise to perform a specific activity or function

Knowledge: Electronic Service Delivery (ESD)		
1	•	Electronic Service Delivery (ESD) Initiative
2	•	The World Wide Web
3	•	Internet, Intranets, Extranets
4	•	Internet Security
5	•	Internet Service Delivery Principles and Theories
Skill: Project Management		
15	•	Planning a Project
16	•	Organizing a Project
17	•	Controlling a Project
18	•	Leading a Project Team
19	•	Quality Management
20	•	Risk Management
23	•	Project Management Packages
Skill: Financial Management		

24	•	Cost Analysis
25	•	Budget Preparation
26	•	Budget Control
Skill: Opportunity Evaluation		
27	•	Conduct Opportunity Evaluation
28	•	Write Project Proposal
Knowledge: Business Planning		
29	•	Define Business
30	•	Establish a Vision for the Business
31	•	Perform an Environmental Scan
32	•	Develop Strategic Direction
33	•	Prepare Business Plans
34	•	Communicate/Market Business Plans
35	•	Implement Business Plans
Knowledge: Strategic Planning		
43	•	Gather and Consolidate Relevant Data/Information
44	•	Perform Environmental Scans
45	•	Develop and Write a Strategic Plan
46	•	Build Consensus on Strategy and Direction
Knowledge: Policy Development		
51	•	Identify Policy Need/Concerns
52	•	Perform Comparative Analysis of Policies
53	•	Develop Policies
54	•	Validate/Adjust Policies
Knowledge: Standards Development		
59	•	Identify Standards Need/Concerns
60	•	Perform Comparative Analysis of Standards
61	•	Develop Standards
62	•	Validate/Adjust Standards
Knowledge: Systems Hardware & Software		
67	•	Mainframes/Minis/Micros
68	•	Database Management Systems
Knowledge: Architecture		
69	•	Architecture Principles
Knowledge: Application and/or System Software Construction		
82	•	Software Engineering Principles
83	•	System Development Life Cycle (SDLC)
84	•	Modelling
85	•	Methodologies
86	•	Documentation
Knowledge: Integration		
87	•	System Integration Principles
88	•	Testing/Validation
Knowledge: Networks		
89	•	Telecommunications Principles
90	•	WAN
91	•	LAN
92	•	Gateways
93	•	VPN
Knowledge: Management of IT Support Processes		
150	•	Operations Related Support Processes
151	•	Network Management Related Support Processes
152	•	Repository Administration
153	•	IT Security Management
154	•	Change Management

155	•	Release Management
156	•	Problem Management
157	•	Performance Measurement
158	•	Configuration Management
159	•	Capacity Planning
Knowledge: **Security Systems**		
166	•	Encryption Concepts & Standards
167	•	Secure Applications
168	•	Personnel Identification & Authentication Concepts & Technology
Knowledge: Web Development		
191	•	Web Site Design
192	•	Web Site Authoring Tools
198	•	Internet Security Technology
199	•	Internet Protocols
200	•	Internet Browsers
201	•	Internet Browser Plugins
202	•	Web Servers
Skill: Web Development		
203	•	Web Site design
204	•	Web Site Authoring Tools
205	•	Web Site Graphics
206	•	Website Multimedia
207	•	Usability
208	•	Web Site Databases
209	•	Internet Security Technology Implementation

Role:	**WEB Technology Architect**
Minimum years of related experience:	5 years IT
Minimum years of experience in this specific Role:	4 years

Responsibilities *could include* but are not limited to:

- Develops technical architectures, frameworks and strategies, either for an organization or for a major application area, to meet the business and application requirements;
- Identifies the policies and requirements that drive out a particular solution;
- Analyzes and evaluates alternative technology solutions to meet business problems;
- Ensures the integration of all aspects of technology solutions;
- Enables the introduction, integration and use of technologies across the Web platform using Netscape Enterprise Server, Netscape application Servers, Java/J2EE, Enterprise Java Beans (EJB), Weblogic, ADO/JDBC, MQ Series, CORBA, and KANA;
- Develops technical architecture designs to meet specific project requirements while adhering to standards and overall direction;
- Conducts technical feasibility studies of proposed solutions in order to evaluate the technical issues and options of the proposals as well as the technical impact, costs and risks to the projects;
- Develops plans for the internet architectural components of the Project and provides input into I&IT operational plans;
- Designs web applications using programming languages (C++, JAVA), operating systems (NT, UNIX), network protocols and standards (TCP/IP, ISDN, SNMP, X.25) and Web technologies (HTML, XML, ASP, XSLT, SOAP,CSS, DTD, JSP and Coldfusion);
- Provides ongoing services related to Web for the full cycle of the project;
- Conducts architectural research into evolving technologies;
- Organizes and presents technical information in a lucid and convincing manner;
- Provides policy development process to participate in the development of standard architectural infrastructure and service delivery recommendations as part of the Project team; and
- Provides assistance to other team members for designing and managing n-tier Web architecture and web sites on diverse hardware platforms.

Competencies:
See definitions in attached Competency Glossary – no other interpretations will be considered

(NOTE: THE ID NUMBERS TO THE LEFT OF THE REQUIRED COMPETENCIES LISTED BELOW CORRESPOND TO THE GLOSSARY COMPETENCY DEFINITION ID NUMBERS)
Required & Demonstrable Knowledge: Familiarity with and understanding of a subject
Required & Demonstrable Skill: Expertise to perform a specific activity or function

	Knowledge: Electronic Service Delivery (ESD)
1	• Electronic Service Delivery (ESD) Initiative
2	• The World Wide Web
3	• Internet, Intranets, Extranets
4	• Internet Security
5	• Internet Service Delivery Principles and Theories
	Skill: Policy Development
55	• Identify Policy Need/Concerns
56	• Perform Comparative Analysis of Policies
57	• Develop Policies
58	• Validate/Adjust Policies
	Skill: Standards Development
63	• Identify Standards Need/Concerns
64	• Perform Comparative Analysis of Standards
65	• Develop Standards
66	• Validate/Adjust Standards

Knowledge: Systems Hardware & Software		
67	•	Mainframes/Minis/Micros
68	•	Database Management Systems
Knowledge: Architecture		
70	•	Business Architecture
71	•	Work Architecture
72	•	Information Architecture
73	•	Applications Architecture
Skill: Architecture		
79	•	Technology Architecture
Knowledge: Application and/or System Software Construction		
82	•	Software Engineering Principles
83	•	System Development Life Cycle (SDLC)
84	•	Modelling
85	•	Methodologies
86	•	Documentation
Knowledge: Integration		
87	•	System Integration Principles
88	•	Testing/Validation
Knowledge: Networks		
89	•	Telecommunications Principles
90	•	WAN
91	•	LAN
92	•	Gateways
93	•	VPN
Skill: Network Integration		
94	•	Develop Plan
95	•	Conduct Capacity Planning
96	•	Design Network
97	•	Perform Cost/Benefit Analysis
Skill: Hardware Integration		
100	•	Develop Plan
101	•	Conduct Capacity Planning
102	•	Define Hardware Platform
103	•	Perform Cost/Benefit Analysis
Skill: Software Integration		
107	•	Develop Plan
108	•	Conduct Capacity Planning
109	•	Define System/Infrastructure
110	•	Perform Cost/Benefit Analysis
Knowledge: Management of IT Support Processes		
150	•	Operations Related Support Processes
151	•	Network Management Related Support Processes
152	•	Repository Administration
153	•	IT Security Management
154	•	Change Management
155	•	Release Management
156	•	Problem Management
157	•	Performance Measurement
158	•	Configuration Management
159	•	Capacity Planning
Skill: Management of IT Support Processes		
160	•	Define Configuration Management Procedures
161	•	Define Change Management Procedures

162	•	Define Release Management Procedures
163	•	Define Problem Management Procedures
165	•	Define Documentation Maintenance Procedures
Knowledge: Security Systems		
166	•	Encryption Concepts & Standards
167	•	Secure Applications
168	•	Personnel Identification & Authentication Concepts & Technology
Knowledge: Security Systems		
166	•	Encryption Concepts & Standards
167	•	Secure Applications
168	•	Personnel Identification & Authentication Concepts & Technology
Knowledge: Web Development		
191	•	Web Site Design
192	•	Web Site Authoring Tools
198	•	Internet Security Technology
199	•	Internet Protocols
200	•	Internet Browsers
201	•	Internet Browser Plugins
202	•	Web Servers
Skill: Web Development		
203	•	Web Site Design
204	•	Web Site Authoring Tools
205	•	Web Site Graphics
206	•	Website Multimedia
207	•	Usability
208	•	Web Site Databases
209	•	Internet Security Technology Implementation

Role:	**Web Product Specialist**
Minimum years of related experience:	5 years IT
Minimum years of experience in this specific Role:	4 years

Responsibilities could include but are not limited to:

- Performs design reviews, and acts as a mentor for project team members;
- Researches, evaluates and recommends technologies for projects;
- Develops and maintains technical specifications and object models for Internet products and services;
- Uses leading edge Web technologies (including JST, EJB, RMI, SOAP, CORBA, XML/XSL, WAP, XSLT, SOAP, CSS, DTD,and HTML) etc;
- Evaluates and recommends architecture design for web applications;
- Collaborates with users to determine content, data processing and capacity requirements, user access levels, software and hardware requirements;
- Recommends and utilizes technologies to secure data and ensure access only to qualified users;
- Provides technical advice and support to other staff members;
- Designs web interface to related database;
- Coordinates the design of new contents to Web by working across the entire production team on a daily basis, and working specifically with other producers, designers and Web developers; and
- Works with other team members to define, design and develop scalable and reliable server-side web applications using one or more of the following: HTML, XML,XHTML, JavaScript, Java, JDBC, ADO, C++, CGI, ActiveX, EJB, J2EE, RMI, CORBA/IIop, COM/DCOM, XSLT, SOAP, CSS and DTD.

Competencies:
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Required & Demonstrable Skill: Expertise to perform a specific activity or function

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	Skill: Policy Development
55	• Identify Policy Need/Concerns
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57	• Develop Policies
58	• Validate/Adjust Policies
	Skill: Standards Development
63	• Identify Standards Need/Concerns
64	• Perform Comparative Analysis of Standards
65	• Develop Standards
66	• Validate/Adjust Standards
	Knowledge: Systems Hardware & Software
67	• Mainframes/Minis/Micros
68	• Database Management Systems
	Knowledge: Architecture
70	• Business Architecture
71	• Work Architecture

72	•	Information Architecture
73	•	Applications Architecture
Skill: Architecture		
79	•	Technology Architecture
Knowledge: Application and/or System Software Construction		
82	•	Software Engineering Principles
83	•	System Development Life Cycle (SDLC)
84	•	Modelling
85	•	Methodologies
86	•	Documentation
Knowledge: Integration		
87	•	System Integration Principles
88	•	Testing/Validation
Knowledge: Networks		
89	•	Telecommunications Principles
90	•	WAN
91	•	LAN
92	•	Gateways
93	•	VPN
Skill: Network Integration		
94	•	Develop Plan
95	•	Conduct Capacity Planning
96	•	Design Network
97	•	Perform Cost/Benefit Analysis
Skill: Hardware Integration		
100	•	Develop Plan
101	•	Conduct Capacity Planning
102	•	Define Hardware Platform
103	•	Perform Cost/Benefit Analysis
Skill: Software Integration		
107	•	Develop Plan
108	•	Conduct Capacity Planning
109	•	Define System/Infrastructure
110	•	Perform Cost/Benefit Analysis
Knowledge: Management of IT Support Processes		
150	•	Operations Related Support Processes
151	•	Network Management Related Support Processes
152	•	Repository Administration
153	•	IT Security Management
154	•	Change Management
155	•	Release Management
156	•	Problem Management
157	•	Performance Measurement
158	•	Configuration Management
159	•	Capacity Planning
Skill: Management of IT Support Processes		
160	•	Define Configuration Management Procedures
161	•	Define Change Management Procedures
162	•	Define Release Management Procedures
163	•	Define Problem Management Procedures
165	•	Define Documentation Maintenance Procedures
Knowledge: Security Systems		
166	•	Encryption Concepts & Standards
167	•	Secure Applications

168	•	Personnel Identification & Authentication Concepts & Technology
Knowledge: Web Development		
191	•	Web Site Design
192	•	Web Site Authoring Tools
198	•	Internet Security Technology
199	•	Internet Protocols
200	•	Internet Browsers
201	•	Internet Browser Plugins
202	•	Web Servers
Skill: Web Development		
203	•	Web Site Design
204	•	Web Site Authoring Tools
205	•	Web Site Graphics
206	•	Website Multimedia
207	•	Usability
208	•	Web Site Databases
209	•	Internet Security Technology Implementation

Role:	**Web Database Analyst**
Minimum years of related experience:	5 years IT
Minimum years of experience in this specific Role:	2 years

Responsibilities _could_ include but are not limited to:

- Generates new Web-enabled database with the client in one or more of the following environments such as Oracle, DB2 and SQL;
- Define data conversion strategy ;
- Define database conversion specifications;
- Customize database conversion routines;
- Finalize Conversion Strategy;
- Works very closely with the users in order to maintain and safeguard the database;
- Identifies requirements for improvements to existing databases by determining users' information requirements and system performance and functional requirements;
- Maintains data dictionaries;
- Develops and designs procedures that will ensure the accuracy, completeness, and timeliness of data stored in the database;
- Mediates and resolves conflicts among users' needs for data;
- Develops and designs security procedures for the database, including access and user account management;
- Create, design and maintain Web based databases using JDBC in multiple environment including Java Servlets, Entity Beans, Session Beans with Java Server Pages;
- Advises programmers, analysts, and users about the efficient use of data;
- Controls and co-ordinates changes to the database, including the deletion of records, changes to the existing records, additions to the database and
- Develops and co-ordinates back-up, disaster recovery and virus protection procedures.

Competencies:
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Required & Demonstrable Skill: Expertise to perform a specific activity or function

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4	• Internet Security
5	• Internet Service Delivery Principles and Theories
Knowledge: Systems Hardware & Software	
67	• Mainframes/Minis/Micros
68	• Database Management Systems
Knowledge: Architecture	
72	• Information Architecture
73	• Applications Architecture
74	• Technology Architecture
Skill: Database Administration	
80	• Database Backup and Restore
81	• Database Replication
Knowledge: Application and/or System Software Construction	

82	•	Software Engineering Principles
83	•	System Development Life Cycle (SDLC)
84	•	Modelling
85	•	Methodologies
86	•	Documentation
Knowledge: Integration		
87	•	System Integration Principles
88	•	Testing/Validation
Knowledge: Networks		
89	•	Telecommunications Principles
90	•	WAN
91	•	LAN
92	•	Gateways
93	•	VPN
Skill: Application Construction & Integration: *System Construction*		
129	•	Define Physical Data Model
131	•	Program Physical Data Model
134	•	Prepare Installation
Knowledge: Management of IT Support Processes		
150	•	Operations Related Support Processes
151	•	Network Management Related Support Processes
152	•	Repository Administration
153	•	IT Security Management
154	•	Change Management
155	•	Release Management
156	•	Problem Management
157	•	Performance Measurement
158	•	Configuration Management
159	•	Capacity Planning
Knowledge: Security Systems		
166	•	Encryption Concepts & Standards
167	•	Secure Applications
168	•	Personnel Identification & Authentication Concepts & Technology
Knowledge: Web Development		
191	•	Web Site Design
192	•	Web Site Authoring Tools
198	•	Internet Security Technology
199	•	Internet Protocols
200	•	Internet Browsers
201	•	Internet Browser Plugins
202	•	Web Servers
Skill: Web Development		
203	•	Web Site Design
204	•	Web Site Authoring Tools
205	•	Web Site Graphics
206	•	Website Multimedia
207	•	Usability
208	•	Web Site Databases
209	•	Internet Security Technology Implementation

Role:	**Web Applications Designer**
Minimum years of related experience:	5 years IT
Minimum years of experience in this specific Role:	2 years

*Responsibilities **could** include but are not limited to:*

- Designs, develops Internet applications using programming languages (C++, JAVA), operating systems (NT,UNIX), network protocols and standards (TCP/IP, ISDN, SNMP, X.25) and Web technologies (HTML, XML, XSLT, SOAP, CSS, DTD, and JSP);
- Develops and documents a detailed statement of requirements for the proposed application;
- Analyzes functional requirements to identify information, procedures and decision flows;
- Evaluates existing procedures and methods, identifies and documents database content, structure, and application sub-systems, and develops data dictionarries;
- Defines and documents interfaces of manual to automated operations within sub-systems, to external systems and between new and existing systems;
- Defines input/output sources, including detail plan for technical design phase, and obtains approval of the system proposal;
- Designs and documents in detail all system components, their interfaces and operational environment;
- Designs data structures and files, sub-systems and modules, programs, batch, on line, and production monitoring procedures, testing strategy and systems;
- Documents system design, concepts and facilities, presents and obtains approval of detailed system design;
- Produces an operational system including all forms, manuals, programs, data files and procedures
- Coordinates the design of new contents to the Web by working across the entire production team on a daily basis, and working specifically with other producers, designers and Web developers;
- Works with other team members to define, design and develop scalable and reliable server-side web applications using one or more of the following: HTML, XML,XHTML, JavaScript, Java, Java Server Pages, Entity Beans, Session Beans, JDBC, ADO, C++, CGI, EJB, J2EE, DHTML, CSS and ActiveX Controls.

Competencies:
See definitions in attached Competency Glossary – no other interpretations will be considered

(NOTE: THE ID NUMBERS TO THE LEFT OF THE REQUIRED COMPETENCIES LISTED BELOW CORRESPOND TO THE GLOSSARY COMPETENCY DEFINITION ID NUMBERS)
Required & Demonstrable Knowledge: Familiarity with and understanding of a subject
Required & Demonstrable Skill: Expertise to perform a specific activity or function

Knowledge: Electronic Service Delivery (ESD)	
1	• Electronic Service Delivery (ESD) Initiative
2	• The World Wide Web
3	• Internet, Intranets, Extranets
4	• Internet Security
5	• Internet Service Delivery Principles and Theories
Knowledge: Systems Hardware & Software	
67	• Mainframes/Minis/Micros
68	• Database Management Systems
Knowledge: Architecture	
73	• Applications Architecture
74	• Technology Architecture
Knowledge: Application and/or System Software Construction	
82	• Software Engineering Principles
83	• System Development Life Cycle (SDLC)
84	• Modelling
85	• Methodologies
86	• Documentation
Knowledge: Integration	

87	•	System Integration Principles
88	•	Testing/Validation

Knowledge: Networks		
89	•	Telecommunications Principles
90	•	WAN
91	•	LAN
92	•	Gateways
93	•	VPN

Skill: Application Construction & Integration: *Preliminary Analysis*		
114	•	Examine Current System
115	•	Define System Context/Objectives
116	•	Build Conceptual Data Model
117	•	Build Conceptual Process Model

Skill: Application Construction & Integration: *System Architecture*		
125	•	Outline Physical Process Model

Skill: Application Construction & Integration: *Functional Design*		
126	•	Plan Release Implementation
127	•	Build Functional Data Model
128	•	Write Unit Process Specification

Skill: Application Construction & Integration: *System Construction*		
129	•	Define Physical Data Model
130	•	Define Physical Process Model
131	•	Program Physical Data Model
132	•	Program Physical Process Model
133	•	Prepare Implementation Document
134	•	Prepare Installation
135	•	Prepare Test Environment
136	•	Conduct Functional Test

Skill: Application Construction & Integration: *Implementation*		
137	•	Install System
138	•	Conduct System Tests
139	•	Start Production

Knowledge: Management of IT Support Processes		
150	•	Operations Related Support Processes
151	•	Network Management Related Support Processes
152	•	Repository Administration
153	•	IT Security Management
154	•	Change Management
155	•	Release Management
156	•	Problem Management
157	•	Performance Measurement
158	•	Configuration Management
159	•	Capacity Planning

Knowledge: Security Systems		
166	•	Encryption Concepts & Standards
167	•	Secure Applications
168	•	Personnel Identification & Authentication Concepts & Technology

Knowledge: Web Development		
191	•	Web Site Design
192	•	Web Site Authoring Tools
198	•	Internet Security Technology
199	•	Internet Protocols
200	•	Internet Browsers
201	•	Internet Browser Plugins

202	• Web Servers
Skill: Web Development	
203	• Web Site Design
204	• Web Site Authoring Tools
205	• Web Site Graphics
206	• Website Multimedia
207	• Usability
208	• Web Site Databases
209	• Internet Security Technology Implementation

Role:	**Web Administrator**
Minimum years of related experience:	5 years IT
Minimum years of experience in this specific Role:	2 years

Responsibilities <u>could</u> include but are not limited to:

- Administrates the web servers for creating, updating user accounts and file access in one or more of these platforms running under IIS, Apache or Lotus Domino;
- Assesses document requirements to build the web contents;
- Performs quality assurance testing, creates and maintains systems and end user documentation;
- Assists the development group in providing technical support to complete projects involving web-enabled solutions;
- Evaluates and recommends emerging technologies as they pertain to the Internet environment;
- Analyzes system problems, recommends improvements and fixes;
- Analyzes server logs and documents them;
- Prepares user interface design of site development, including navigational rules, organization of information, site maps and planning documents;
- Develops and designs security procedures for the system, including access and user account management;
- Advises programmers, analysts, and users about the efficient use of Internet;
- Maintains configuration control of the database using Java Servlets and Java Server Pages;
- Performs and/or co-ordinates updates to the database design;
- Controls and co-ordinates changes to the web site information and
- Develops and co-ordinates back-up, disaster recovery and virus protection procedures.

Competencies:
<u>See definitions in attached Competency Glossary – no other interpretations will be considered</u>

(NOTE: THE ID NUMBERS TO THE LEFT OF THE REQUIRED COMPETENCIES LISTED BELOW CORRESPOND TO THE GLOSSARY COMPETENCY DEFINITION ID NUMBERS)

Required & Demonstrable Knowledge: <u>Familiarity with and understanding of a subject</u>
Required & Demonstrable Skill: <u>Expertise to perform a specific activity or function</u>

Knowledge: Electronic Service Delivery (ESD)		
1	•	Electronic Service Delivery (ESD) Initiative
2	•	The World Wide Web
3	•	Internet, Intranets, Extranets
4	•	Internet Security
5	•	Internet Service Delivery Principles and Theories
Knowledge: Systems Hardware & Software		
67	•	Mainframes/Minis/Micros
68	•	Database Management Systems
Knowledge: Architecture		
72	•	Information Architecture
73	•	Applications Architecture
74	•	Technology Architecture
Skill: Database Administration		
80	•	Database Backup and Restore
81	•	Database Replication
Knowledge: Application and/or System Software Construction		
82	•	Software Engineering Principles
83	•	System Development Life Cycle (SDLC)
84	•	Modelling
85	•	Methodologies

86	•	Documentation
Knowledge: Integration		
87	•	System Integration Principles
88	•	Testing/Validation
Knowledge: Networks		
89	•	Telecommunications Principles
90	•	WAN
91	•	LAN
92	•	Gateways
93	•	VPN
Skill: Application Construction & Integration: *System Construction*		
129	•	Define Physical Data Model
131	•	Program Physical Data Model
134	•	Prepare Installation
Knowledge: Management of IT Support Processes		
150	•	Operations Related Support Processes
151	•	Network Management Related Support Processes
152	•	Repository Administration
153	•	IT Security Management
154	•	Change Management
155	•	Release Management
156	•	Problem Management
157	•	Performance Measurement
158	•	Configuration Management
159	•	Capacity Planning
Knowledge: Security Systems		
166	•	Encryption Concepts & Standards
167	•	Secure Applications
168	•	Personnel Identification & Authentication Concepts & Technology
Knowledge: Security Systems		
166	•	Encryption Concepts & Standards
167	•	Secure Applications
168	•	Personnel Identification & Authentication Concepts & Technology
Knowledge: Web Development		
191	•	Web Site Design
192	•	Web Site Authoring Tools
198	•	Internet Security Technology
199	•	Internet Protocols
200	•	Internet Browsers
201	•	Internet Browser Plugins
Skill: Web Development		
203	•	Web Site Design
204	•	Web Site Authoring Tools
205	•	Web Site Graphics
206	•	Website Multimedia
208	•	Web Site Databases
209	•	Internet Security Technology Implementation

Role:	**Multi Media WEB Developer**
Minimum years of related experience:	5 years IT
Minimum years of experience in this specific Role:	2 years

Responsibilities could include but are not limited to:

- Designs and develops Internet applications using programming languages (C++, JAVA), operating systems (NT,UNIX), network protocols and standards (TCP/IP, ISDN, SNMP, X.25) and Web technologies (HTML, XML, XSLT, SOAP, CSS, DTD, and JSP);
- Develops and documents a detailed statement of requirements for the proposed application;
- Analyzes functional requirements to identify information, procedures and decision flows;
- Evaluates existing procedures and methods, identifies and documents database content, structure, and application sub-systems, and develops data dictionaries;
- Defines and documents interfaces of manual to automated operations within sub-systems, to external systems and between new and existing systems;
- Defines input/output sources, including detail plan for technical design phase, and obtains approval of the system proposal;
- Develops flowcharts (Site Maps) depicting navigation and basic content;
- Develops line drawings or block diagrams illustrating the priority of information, links navigation and space requirements;
- Develops content diagrams showing the interactive connection between pages;
- Develops interactive prototypes showing basic form and functionality that are used for both usability testing and presentations;
- Develop the 3D projects through all stages of the system development cycle with focus on interface design to create web pages using one or more of following web technologies such as Adobe Illustrator, Adobe Photoshop, Macromedia Flash, Dreamweaver, Freehand, 3D, Shockwave, JavaScript, streaming media, DHTML, CSS and ActiveX Controls;
- Designs various multimedia applications e.g. MPEG-4 and H.263 codes based on JPEG and JPEG 2000 standards to enable services like video conferencing, video streaming and audio streaming;
- Coordinates the design of new contents to the Web by working across the entire production team on a daily basis, and working specifically with other producers, designers and Web developers;
- Works with other team members to define, design and develop scalable and reliable server-side web applications using one or more of the following: HTML, XHTML, XML, JavaScript, Java, JDBC, ADO, C++, CGI, EJB, J2EE, DHTML, CSS, DTD, XML Schemas, SOAP and ActiveX Controls; and
- Creates web pages (visual execution including brand, tone, and multi-media design).

Competencies:
See definitions in attached Competency Glossary – no other interpretations will be considered

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Required & Demonstrable Knowledge: Familiarity with and understanding of a subject
Required & Demonstrable Skill: Expertise to perform a specific activity or function

Knowledge: Electronic Service Delivery (ESD)	
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2	• The World Wide Web
3	• Internet, Intranets, Extranets
4	• Internet Security
5	• Internet Service Delivery Principles and Theories
Knowledge: Systems Hardware & Software	
67	• Mainframes/Minis/Micros
68	• Database Management Systems

Knowledge: Architecture		
73	•	Applications Architecture
74	•	Technology Architecture
Knowledge: Application and/or System Software Construction		
82	•	Software Engineering Principles
83	•	System Development Life Cycle (SDLC)
84	•	Modelling
85	•	Methodologies
86	•	Documentation
Knowledge: Integration		
87	•	System Integration Principles
88	•	Testing/Validation
Knowledge: Networks		
89	•	Telecommunications Principles
90	•	WAN
91	•	LAN
92	•	Gateways
93	•	VPN
Skill: Application Construction & Integration: *Preliminary Analysis*		
114	•	Examine Current System
115	•	Define System Context/Objectives
116	•	Build Conceptual Data Model
117	•	Build Conceptual Process Model
Skill: Application Construction & Integration: *System Architecture*		
125	•	Outline Physical Process Model
Skill: Application Construction & Integration: *Functional Design*		
126	•	Plan Release Implementation
127	•	Build Functional Data Model
128	•	Write Unit Process Specification
Skill: Application Construction & Integration: *System Construction*		
129	•	Define Physical Data Model
130	•	Define Physical Process Model
131	•	Program Physical Data Model
132	•	Program Physical Process Model
133	•	Prepare Implementation Document
134	•	Prepare Installation
135	•	Prepare Test Environment
136	•	Conduct Functional Test
Skill: Application Construction & Integration: *Implementation*		
137	•	Install System
138	•	Conduct System Tests
139	•	Start Production
Knowledge: Management of IT Support Processes		
150	•	Operations Related Support Processes
151	•	Network Management Related Support Processes
152	•	Repository Administration
153	•	IT Security Management
154	•	Change Management
155	•	Release Management
156	•	Problem Management
157	•	Performance Measurement
158	•	Configuration Management
159	•	Capacity Planning

Knowledge: Security Systems		
166	•	Encryption Concepts & Standards
167	•	Secure Applications
168	•	Personnel Identification & Authentication Concepts & Technology
Knowledge: Web Development		
191	•	Web Site Design
192	•	Web Site Authoring Tools
198	•	Internet Security Technology
199	•	Internet Protocols
200	•	Internet Browsers
201	•	Internet Browser Plugins
202	•	Web Servers
Skill: Web Development		
203	•	Web Site design
204	•	Web Site Authoring Tools
205	•	Web Site Graphics
206	•	Website Multimedia
207	•	Usability
208	•	Web Site Databases
209	•	Internet Security Technology Implementation

Role:	**Technical Writer Web User Interface**
Minimum years of related experience:	5 years IT
Minimum years of experience in this specific Role:	3 years

Responsibilities <u>could</u> include but are not limited to:

- Prepares documentation includes help text, user manuals, technical documentation, web page content, etc;
- Reviews documentation standards and the existing project documentation;
- Determines documentation requirements and makes plans for meeting them;
- Gathers information concerning the features and functions provided by the developers;
- Surveys the clients to determine their requirements for the documents/manuals and prepares a statement of purpose and scope for each documents/manuals;
- Develops a table of contents for each document/manual and writes or edits the required content;
- Investigates the accuracy of the information collected by making direct use of the material being documented;
- Prepares or co-ordinates the preparation of any required illustrations and diagrams;
- Designs the layout of the documents/manuals; and
- Uses word-processing, desktop publishing and graphics software packages to produce final camera-ready copy.

Competencies:
See definitions in attached Competency Glossary – no other interpretations will be considered

(NOTE: THE ID NUMBERS TO THE LEFT OF THE REQUIRED COMPETENCIES LISTED BELOW CORRESPOND TO THE GLOSSARY COMPETENCY DEFINITION ID NUMBERS)

Required & Demonstrable Knowledge: Familiarity with and understanding of a subject
Required & Demonstrable Skill: Expertise to perform a specific activity or function

Knowledge: Electronic Service Delivery (ESD)	
1	• Electronic Service Delivery (ESD) Initiative
2	• The World Wide Web
3	• Internet, Intranets, Extranets
4	• Internet Security
5	• Internet Service Delivery Principles and Theories
Knowledge: Systems Hardware & Software	
67	• Mainframes/Minis/Micros
68	• Database Management Systems
Knowledge: Architecture	
69	• Architecture Principles
Knowledge: Application and/or System Software Construction	
82	• Software Engineering Principles
83	• System Development Life Cycle (SDLC)
84	• Modelling
85	• Methodologies
86	• Documentation
Knowledge: Integration	
87	• System Integration Principles
88	• Testing/Validation
Knowledge: Networks	
89	• Telecommunications Principles
90	• WAN
91	• LAN
92	• Gateways
93	• VPN
Skill: Application Construction & Integration: *System Construction*	

133	•	Prepare Implementation Document
134	•	Prepare Installation
Knowledge: Management of IT Support Processes		
150	•	Operations Related Support Processes
151	•	Network Management Related Support Processes
152	•	Repository Administration
153	•	IT Security Management
157	•	Performance Measurement
Knowledge: Security Systems		
166	•	Encryption Concepts & Standards
167	•	Secure Applications
168	•	Personnel Identification & Authentication Concepts & Technology
Knowledge: Web Development		
191	•	Web Site Design
192	•	Web Site Authoring Tools
198	•	Internet Security Technology
199	•	Internet Protocols
200	•	Internet Browsers
201	•	Internet Browser Plugins
202	•	Web Servers
Skill: Web Development		
203	•	Web Site design
204	•	Web Site Authoring Tools
205	•	Web Site Graphics
206	•	Website Multimedia
207	•	Usability
208	•	Web Site Databases
209	•	Internet Security Technology Implementation
Skill: Writing Tools		
213	•	Skill in the use of Desktop Publishing Packages
214	•	Skill in the use of Web Site Content Development Packages
Skill: Communicating		
230	•	Listening to Clients/Peers
231	•	Writing Clearly and Concisely

Role:	**WEB Security Specialist**
Minimum years of related experience:	5 years IT
Minimum years of experience in this specific Role:	3 years

Responsibilities could include but are not limited to:

- Develops Internet/Intranet security policies, standards, guidelines and procedures;
- Reviews existing security policies, standards, guidelines and procedures and provides advice as to their appropriateness and effectiveness;
- Conducts compliance audits of Internet operations, application systems and infrastructure SSL encryption under one or more security software packages such as PKI, Network Magic, and Xcert;
- Conducts security threat and risk assessments of Web facilities, application systems and communications;
- Conducts reviews of backup and recovery plans;
- Investigates security incidents and reporting causes and related weaknesses and recommending remedies;
- Designs the security framework and the security components of IT & Internet/Intranet infrastructure required to protect assets and to support application systems;
- Provides advice on the security aspects of application systems under development; and
- Develops and delivers Internet/Intranet Security awareness and training programs.

Competencies:
See definitions in attached Competency Glossary – no other interpretations will be considered

(NOTE: THE ID NUMBERS TO THE LEFT OF THE REQUIRED COMPETENCIES LISTED BELOW CORRESPOND TO THE GLOSSARY COMPETENCY DEFINITION ID NUMBERS)

Required & Demonstrable Knowledge: Familiarity with and understanding of a subject
Required & Demonstrable Skill: Expertise to perform a specific activity or function

Knowledge: Electronic Service Delivery (ESD)		
1	•	Electronic Service Delivery (ESD) Initiative
2	•	The World Wide Web
3	•	Internet, Intranets, Extranets
4	•	Internet Security
5	•	Internet Service Delivery Principles and Theories
Skill: Project Management		
20	•	Risk Management
Skill: Strategic Planning		
47	•	Gather and Consolidate Relevant Data/Information
48	•	Perform Environmental Scans
49	•	Develop and Write a Strategic Plan
50	•	Build Consensus on Strategy and Direction
Skill: Policy Development		
55	•	Identify Policy Need/Concerns
56	•	Perform Comparative Analysis of Policies
57	•	Develop Policies
58	•	Validate/Adjust Policies
Skill: Standards Development		
63	•	Identify Standards Need/Concerns
64	•	Perform Comparative Analysis of Standards
65	•	Develop Standards
66	•	Validate/Adjust Standards
Knowledge: Systems Hardware & Software		
67	•	Mainframes/Minis/Micros
68	•	Database Management Systems

Knowledge: Architecture		
70	•	Business Architecture
71	•	Work Architecture
72	•	Information Architecture
73	•	Applications Architecture
74	•	Technology Architecture
Knowledge: Application and/or System Software Construction		
82	•	Software Engineering Principles
83	•	System Development Life Cycle (SDLC)
Knowledge: Integration		
87	•	System Integration Principles
88	•	Testing/Validation
Knowledge: Management of IT Support Processes		
150	•	Operations Related Support Processes
151	•	Network Management Related Support Processes
152	•	Repository Administration
153	•	IT Security Management
154	•	Change Management
155	•	Release Management
156	•	Problem Management
Skill: Management of IT Support Processes		
164	•	Define Security Management Procedures
Knowledge: Security Systems		
166	•	Encryption Concepts & Standards
167	•	Secure Applications
168	•	Personnel Identification & Authentication Concepts & Technology
Knowledge: e-Commerce Development		
214	•	E-Commerce Security Issues
Knowledge: Web Development		
191	•	Web Site Design
192	•	Web Site Authoring Tools
198	•	Internet Security Technology
199	•	Internet Protocols
200	•	Internet Browsers
201	•	Internet Browser Plugins
202	•	Web Servers
Skill: Web Development		
203	•	Web Site design
204	•	Web Site Authoring Tools
205	•	Web Site Graphics
206	•	Website Multimedia
207	•	Usability
208	•	Web Site Databases
209	•	Internet Security Technology Implementation

Role:	**Internet Portal Specialist**
Minimum years of related experience:	5 years IT
Minimum years of experience in this specific Role:	2 years

Responsibilities _could_ include but are not limited to:

- Develops and prepares diagrammatic plans for web based service delivery over the Internet;
- Analyzes the problems outlined by systems analysts/designers in terms of such factors as style and extent of information to be transferred across the Internet;
- Selects and uses the best available web development tools for linking the internet based client to the departmental "back end" information delivery programs and databases;
- Designs high-usability web pages to meet the requirement;
- Verifies accuracy and completeness of programs by preparing sample data, and testing them by means of system acceptance test runs made by operating personnel;
- Corrects program errors by revising instructions or altering the sequence of operations;
- Tests instructions, and assembles specifications, flow charts, diagrams, layouts, programming and operating instructions to document applications for later modification or references;
- Delivers quality applications in a dynamic, fast paced environment providing participation in the testing, debugging and integration of web based applications using JSP, JavaScript, HTML, XHTML, XML, Java and Adobe Web packages;
- Develops content diagrams showing the interactive connection between pages;
- Develops interactive prototypes showing basic form and functionality that are used for both usability testing and presentations;
- Develop the 3D projects through all stages of the system development cycle with focus on interface design to create web pages using cutting-edge web technologies such as Adobe Illustrator, Adobe Photoshop, Macromedia Flash, Dreamweaver, Freehand, 3D, Shockwave, JavaScript, streaming media, DHTML, CSS and ActiveX Controls;
- Designs various multimedia applications e.g. MPEG-4 and H.263 codes based on JPEG and JPEG 2000 standards to enable services like video conferencing, video streaming and audio streaming;
- Coordinates the design of new contents to the Web by working across the entire production team on a daily basis, and working specifically with other producers, designers and Web developers;
- Works with other team members to define, design and develop scalable and reliable server-side web applications using one or more of the following: HTML, XHTML, XML, JavaScript, Java, JDBC, ADO, C++, CGI, EJB, J2EE, DHTML, CSS and ActiveX Controls; and
- Creates web pages (visual execution including brand, tone, and multi-media design); and
- Works closely with e-Commerce department regarding the connectivity to the internet and different links between multi-Tier Applications.

Competencies:
See definitions in attached Competency Glossary – no other interpretations will be considered

(NOTE: THE ID NUMBERS TO THE LEFT OF THE REQUIRED COMPETENCIES LISTED BELOW CORRESPOND TO THE GLOSSARY COMPETENCY DEFINITION ID NUMBERS)

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67	• Mainframes/Minis/Micros

68	•	Database Management Systems
Knowledge: Architecture		
73	•	Applications Architecture
74	•	Technology Architecture
Knowledge: Application and/or System Software Construction		
82	•	Software Engineering Principles
83	•	System Development Life Cycle (SDLC)
84	•	Modelling
85	•	Methodologies
86	•	Documentation
Knowledge: Integration		
87	•	System Integration Principles
88	•	Testing/Validation
Knowledge: Networks		
89	•	Telecommunications Principles
90	•	WAN
91	•	LAN
92	•	Gateways
93	•	VPN
Skill: Application Construction & Integration: *Preliminary Analysis*		
114	•	Examine Current System
115	•	Define System Context/Objectives
116	•	Build Conceptual Data Model
117	•	Build Conceptual Process Model
Skill: Application Construction & Integration: *System Architecture*		
125	•	Outline Physical Process Model
Skill: Application Construction & Integration: *Functional Design*		
126	•	Plan Release Implementation
127	•	Build Functional Data Model
128	•	Write Unit Process Specification
Skill: Application Construction & Integration: *System Construction*		
129	•	Define Physical Data Model
130	•	Define Physical Process Model
131	•	Program Physical Data Model
132	•	Program Physical Process Model
133	•	Prepare Implementation Document
134	•	Prepare Installation
135	•	Prepare Test Environment
136	•	Conduct Functional Test
Skill: Application Construction & Integration: *Implementation*		
137	•	Install System
138	•	Conduct System Tests
139	•	Start Production
Knowledge: Management of IT Support Processes		
150	•	Operations Related Support Processes
151	•	Network Management Related Support Processes
152	•	Repository Administration
153	•	IT Security Management
154	•	Change Management
155	•	Release Management
156	•	Problem Management
157	•	Performance Measurement
158	•	Configuration Management
159	•	Capacity Planning

Knowledge: Security Systems		
166	•	Encryption Concepts & Standards
167	•	Secure Applications
168	•	Personnel Identification & Authentication Concepts & Technology
Knowledge: Web Development		
191	•	Web Site Design
192	•	Web Site Authoring Tools
198	•	Internet Security Technology
199	•	Internet Protocols
200	•	Internet Browsers
201	•	Internet Browser Plugins
202	•	Web Servers
Skill: Web Development		
203	•	Web Site design
204	•	Web Site Authoring Tools
205	•	Web Site Graphics
206	•	Website Multimedia
207	•	Usability
208	•	Web Site Databases
209	•	Internet Security Technology Implementation

Role:	**Business Analyst, Web User Interface**
Minimum years of related experience:	5 years IT
Minimum years of experience in this specific Role:	2 years

Responsibilities <u>could</u> include but are not limited to:

- Develops and documents a detailed statement of requirements for the proposed system;
- Works with the Product Development Team on the User Interface (Web, GUI, IVR), facilitates Application Design Workshops with the marketing department, and develops functional specifications for applications;
- Provides guidance and cross-training to the development team leaders, and works with documentation specialists to design online help facilities;
- Analyzes functional requirements to identify information, procedures and decision flows;
- Evaluates existing procedures and methods, identifies and documents database content, structure, and application sub-systems, and develops data dictionaries;
- Defines and documents interfaces of manual to automated operations within sub-systems, to external systems and between new and existing systems;
- Defines input/output sources, including detail plan for technical design phase, and obtains approval of the system proposal;
- Designs and documents in detail all system components, their interfaces and operational environment;
- Designs data structures and files, sub-systems and modules, programs, batch, on line, and production monitoring procedures, testing strategy and systems;
- Documents system design, concepts and facilities, presents and obtains approval of detailed system design; and
- Produces an operational system including all forms, manuals, programs, data files and procedures.

Competencies:
<u>See definitions in attached Competency Glossary – no other interpretations will be considered</u>

(NOTE: THE ID NUMBERS TO THE LEFT OF THE REQUIRED COMPETENCIES LISTED BELOW CORRESPOND TO THE GLOSSARY COMPETENCY DEFINITION ID NUMBERS)

Required & Demonstrable Knowledge: <u>Familiarity with and understanding of a subject</u>
Required & Demonstrable Skill: <u>Expertise to perform a specific activity or function</u>

	Knowledge: Electronic Service Delivery (ESD)
1	• Electronic Service Delivery (ESD) Initiative
2	• The World Wide Web
3	• Internet, Intranets, Extranets
4	• Internet Security
5	• Internet Service Delivery Principles and Theories
	Skill: Policy Development
55	• Identify Policy Need/Concerns
56	• Perform Comparative Analysis of Policies
57	• Develop Policies
58	• Validate/Adjust Policies
	Skill: Standards Development
63	• Identify Standards Need/Concerns
64	• Perform Comparative Analysis of Standards
65	• Develop Standards
66	• Validate/Adjust Standards
	Knowledge: Systems Hardware & Software
67	• Mainframes/Minis/Micros
68	• Database Management Systems
	Knowledge: Architecture

72	•	Information Architecture
73	•	Applications Architecture
74	•	Technology Architecture
Skill: Database Administration		
80	•	Database Backup and Restore
81	•	Database Replication
Knowledge: Application and/or System Software Construction		
82	•	Software Engineering Principles
83	•	System Development Life Cycle (SDLC)
84	•	Modelling
85	•	Methodologies
86	•	Documentation
Knowledge: Integration		
87	•	System Integration Principles
88	•	Testing/Validation
Knowledge: Networks		
89	•	Telecommunications Principles
90	•	WAN
91	•	LAN
92	•	Gateways
93	•	VPN
Skill: Application Construction & Integration: *System Construction*		
129	•	Define Physical Data Model
131	•	Program Physical Data Model
134	•	Prepare Installation
Knowledge: Management of IT Support Processes		
150	•	Operations Related Support Processes
151	•	Network Management Related Support Processes
152	•	Repository Administration
153	•	IT Security Management
154	•	Change Management
155	•	Release Management
156	•	Problem Management
157	•	Performance Measurement
158	•	Configuration Management
159	•	Capacity Planning
Knowledge: Security Systems		
166	•	Encryption Concepts & Standards
167	•	Secure Applications
168	•	Personnel Identification & Authentication Concepts & Technology
Knowledge: Web Development		
191	•	Web Site Design
192	•	Web Site Authoring Tools
198	•	Internet Security Technology
199	•	Internet Protocols
200	•	Internet Browsers
201	•	Internet Browser Plugins
202	•	Web Servers
Skill: Web Development		
203	•	Web Site design
204	•	Web Site Authoring Tools
205	•	Web Site Graphics
206	•	Website Multimedia
207	•	Usability

208	•	Web Site Databases
209	•	Internet Security Technology Implementation

Role:	**Project Manager, e-Commerce**
Minimum years of related experience:	4 years Project Management *plus* 5 years IT
Minimum years of experience in this Role:	2 years

Responsibilities could include but are not limited to:

- Manages projects related to the design and integration of e-Commerce with existing systems;
- Manages the project during the development, design and operations startup by ensuring that resources are made available and that the application/system is developed and is fully operational within previously agreed time, cost and performance parameters;
- Develops strategies, plans and complex solutions based on sound business and technical architecture including product management, project management, proposal development and system integration;
- Leads a project team in delivering a detailed analysis, design, development, problem solving and issue resolution;
- Provides high level consulting expertise across projects or project teams;
- Formulates statements of management, scientific and business problems, establishes procedures for the development and design of significant, new or modified applications/systems to solve these problems, and obtains approval thereof;
- Defines and documents the objectives for the project; determines budgetary requirements, the composition, roles and responsibilities and terms of reference for the project team;
- Reports progress of the project on an ongoing basis to the client and at scheduled points in the life cycle to the sponsors of the project;
- Meets in conference with project managers and other stakeholders and states problems in a form capable of being solved;
- Prepares plans, charts, tables and diagrams to assist in analyzing or displaying problems;
- Works with a variety of scientific, business or engineering tools requiring a sound knowledge of mathematics and management sciences;
- Selects vendors, partners and alliances in e-commerce related areas such as reporting, analytics and applications server;
- Provides assistance to team members for issues related to G2G, G2B and G2C electronic commerce, procurement, system management products and other infrastructure services; and
- Project sign-off

Competencies:
See definitions in attached Competency Glossary – no other interpretations will be considered

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Required & Demonstrable Knowledge: Familiarity with and understanding of a subject
Required & Demonstrable Skill: Expertise to perform a specific activity or function

	Knowledge: Electronic Service Delivery (ESD)
1	• Electronic Service Delivery (ESD) Initiative
2	• The World Wide Web
3	• Internet, Intranets, Extranets
4	• Internet Security
5	• Internet Service Delivery Principles and Theories
	Skill: Project Management
15	• Planning a Project
16	• Organizing a Project
17	• Controlling a Project
18	• Leading a Project Team
19	• Quality Management
20	• Risk Management

23	•	Project Management Packages
Skill: Financial Management		
24	•	Cost Analysis
25	•	Budget Preparation
26	•	Budget Control
Skill: Opportunity Evaluation		
27	•	Conduct Opportunity Evaluation
28	•	Write Project Proposal
Knowledge: Business Planning		
29	•	Define Business
30	•	Establish a Vision for the Business
31	•	Perform an Environmental Scan
32	•	Develop Strategic Direction
33	•	Prepare Business Plans
34	•	Communicate/Market Business Plans
35	•	Implement Business Plans
Knowledge: Strategic Planning		
43	•	Gather and Consolidate Relevant Data/Information
44	•	Perform Environmental Scans
45	•	Develop and Write a Strategic Plan
46	•	Build Consensus on Strategy and Direction
Knowledge: Policy Development		
51	•	Identify Policy Need/Concerns
52	•	Perform Comparative Analysis of Policies
53	•	Develop Policies
54	•	Validate/Adjust Policies
Knowledge: Standards Development		
59	•	Identify Standards Need/Concerns
60	•	Perform Comparative Analysis of Standards
61	•	Develop Standards
62	•	Validate/Adjust Standards
Knowledge: Systems Hardware & Software		
67	•	Mainframes/Minis/Micros
68	•	Database Management Systems
Knowledge: Architecture		
69	•	Architecture Principles
Knowledge: Application and/or System Software Construction		
82	•	Software Engineering Principles
83	•	System Development Life Cycle (SDLC)
84	•	Modelling
85	•	Methodologies
86	•	Documentation
Knowledge: Integration		
87	•	System Integration Principles
88	•	Testing/Validation
Knowledge: Networks		
89	•	Telecommunications Principles
90	•	WAN
91	•	LAN
92	•	Gateways
93	•	VPN
Knowledge: Management of IT Support Processes		
150	•	Operations Related Support Processes
151	•	Network Management Related Support Processes
152	•	Repository Administration

153	•	IT Security Management
154	•	Change Management
155	•	Release Management
156	•	Problem Management
157	•	Performance Measurement
158	•	Configuration Management
159	•	Capacity Planning
Knowledge: Web Development		
191	•	Web Site Design
192	•	Web Site Authoring Tools
193	•	Web Site Graphics
194	•	Web Site Multimedia
197	•	Web Site Databases
198	•	Internet Security Technology
199	•	Internet Protocols
200	•	Internet Browsers
201	•	Internet Browser Plugins
202	•	Web Servers
Skill: Web Development		
203	•	Web Site design
204	•	Web Site Authoring Tools
205	•	Web Site Graphics
206	•	Website Multimedia
207	•	Usability
208	•	Web Site Databases
209	•	Internet Security Technology Implementation
Knowledge: e-Commerce		
212	•	e-Commerce Standards
213	•	e-Commerce Architecture
214	•	e-Commerce Security Issues
215	•	e-Commerce Protocols
Skill: e-Commerce		
216	•	e-Commerce Architecture
217	•	e-Commerce Security Issues
218	•	e-Commerce Protocols
219	•	Establish & Implement Principles of Operational Competencies
220	•	Develop e-Commerce Policies & Standards
221	•	e-Commerce Servers

Role:	**Enterprise Application Integration Specialist**
Minimum years of related experience:	5 years IT
Minimum years of experience in this specific Role:	2 years

Responsibilities could include but are not limited to:

- Develops technical architectures, frameworks and strategies, either for an organization or for a major application requirements in the e-Commerce environment;
- Defines user requirements and assesses technology options for EAI (Enterprise Application Integration) and e-Commerce solutions for designing the distributed applications for secure transaction processing;
- Identifies the policies and requirements that drive out a particular solution;
- Analyzes and evaluates alternative technology solutions to meet business problems;
- Designs e-business solutions with consideration for perfect integration with existing business applications;
- Ensures the integration of all aspects of technology solutions;
- Monitors industry trends to ensure that solutions fit with government and industry directions for technology;
- Analyzes functional requirements to identify information procedures and decision flows;
- Evaluates existing procedures and methods, identifies and documents database content, structure, and application sub-systems and develops data dictionaries;
- Defines and documents interfaces of manual to automated operations within application sub-systems, to external systems and between new and existing systems;
- Defines input/output sources, including detail plan for technical design phase; and obtains approval of the system proposal; and
- Identifies and documents system specific standards relating to programming documentation and testing covering program libraries, data dictionaries, naming conventions etc.

Competencies:
See definitions in attached Competency Glossary – no other interpretations will be considered

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Required & Demonstrable Knowledge: Familiarity with and understanding of a subject
Required & Demonstrable Skill: Expertise to perform a specific activity or function

Knowledge: Electronic Service Delivery (ESD)	
1	• Electronic Service Delivery (ESD) Initiative
2	• The World Wide Web
3	• Internet, Intranets, Extranets
4	• Internet Security
5	• Internet Service Delivery Principles and Theories
Skill: Policy Development	
55	• Identify Policy Need/Concerns
56	• Perform Comparative Analysis of Policies
57	• Develop Policies
58	• Validate/Adjust Policies
Skill: Standards Development	
63	• Identify Standards Need/Concerns
64	• Perform Comparative Analysis of Standards
65	• Develop Standards
66	• Validate/Adjust Standards
Knowledge: Systems Hardware & Software	
67	• Mainframes/Minis/Micros
68	• Database Management Systems
Knowledge: Architecture	

70	• Business Architecture
71	• Work Architecture
72	• Information Architecture
73	• Applications Architecture
Skill: Architecture	
79	• Technology Architecture
Knowledge: Application and/or System Software Construction	
82	• Software Engineering Principles
83	• System Development Life Cycle (SDLC)
84	• Modelling
85	• Methodologies
86	• Documentation
Knowledge: Integration	
87	• System Integration Principles
88	• Testing/Validation
Knowledge: Networks	
89	• Telecommunications Principles
90	• WAN
91	• LAN
92	• Gateways
93	• VPN
Skill: Network Integration	
94	• Develop Plan
95	• Conduct Capacity Planning
96	• Design Network
97	• Perform Cost/Benefit Analysis
Skill: Hardware Integration	
100	• Develop Plan
101	• Conduct Capacity Planning
102	• Define Hardware Platform
103	• Perform Cost/Benefit Analysis
Skill: Software Integration	
107	• Develop Plan
108	• Conduct Capacity Planning
109	• Define System/Infrastructure
110	• Perform Cost/Benefit Analysis
Knowledge: Management of IT Support Processes	
150	• Operations Related Support Processes
151	• Network Management Related Support Processes
152	• Repository Administration
153	• IT Security Management
154	• Change Management
155	• Release Management
156	• Problem Management
157	• Performance Measurement
158	• Configuration Management
159	• Capacity Planning

Skill: Management of IT Support Processes		
160	•	Define Configuration Management Procedures
161	•	Define Change Management Procedures
162	•	Define Release Management Procedures
163	•	Define Problem Management Procedures
165	•	Define Documentation Maintenance Procedures
Knowledge: Security Systems		
166	•	Encryption Concepts & Standards
167	•	Secure Applications
168	•	Personnel Identification & Authentication Concepts & Technology
Knowledge: Web Development		
191	•	Web Site Design
192	•	Web Site Authoring Tools
193	•	Web Site Graphics
194	•	Web Site Multimedia
198	•	Internet Security Technology
199	•	Internet Protocols
200	•	Internet Browsers
201	•	Internet Browser Plugins
202	•	Web Servers
Skill: Web Development		
203	•	Web Site design
204	•	Web Site Authoring Tools
205	•	Web Site Graphics
206	•	Website Multimedia
207	•	Usability
208	•	Web Site Databases
209	•	Internet Security Technology Implementation
Knowledge: e-Commerce		
212	•	e-Commerce Standards
213	•	e-Commerce Architecture
214	•	e-Commerce Security Issues
215	•	e-Commerce Protocols
Skill: e-Commerce		
216	•	e-Commerce Architecture
217	•	e-Commerce Security Issues
218	•	e-Commerce Protocols
219	•	Establish & Implement Principles of Operational Competencies
220	•	Develop e-Commerce Policies & Standards
221	•	e-Commerce Servers

Role:	**Enterprise Application Integration Database Architect**
Minimum years of related experience:	5 years IT
Minimum years of experience in this specific Role:	2 years

Responsibilities *could* include but are not limited to:

- Defines user requirements and assesses technology options for EAI (Enterprise Application Integration) and e-Commerce solutions;

- Provides assessment of current state and future state design of data architecture environment in relation to Enterprise Application Integration (EAI) tools and e-Commerce;

- Develops e-Commerce applications through object-oriented analysis design and development using distributed technologies (such as Java, C++, Smalltalk, Eiffel, CORBA, RMI, COD/DCOM, Ada), and middleware technologies (such as IBM MQSeries, CICS and TIBCO);

- Manages e-Commerce database using Object transaction Managers and Applications Servers (such as Iona Orbix, Netscape Application Server, Visigenix Visibroker, NetDynamics, IBM Component Broker, IBM WebSphere, BEA WebLogic);

- Design e-business solutions with consideration for perfect integration with existing database applications;

- Defines database component architecture and assists in task estimates and project scope; and

- Designs overall architecture, selects the appropriate tools and products to facilitate the design of the database architecture using Enterprise Application Integration (EAI) and Middleware products such as Crossworlds Software, Active Software, Neon, Vitria, Mercator, and Tibco.

Competencies:
See definitions in attached Competency Glossary – no other interpretations will be considered

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Required & Demonstrable Knowledge: Familiarity with and understanding of a subject
Required & Demonstrable Skill: Expertise to perform a specific activity or function

Knowledge: Electronic Service Delivery (ESD)		
1	•	Electronic Service Delivery (ESD) Initiative
2	•	The World Wide Web
3	•	Internet, Intranets, Extranets
4	•	Internet Security
5	•	Internet Service Delivery Principles and Theories
Skill: Policy Development		
55	•	Identify Policy Need/Concerns
56	•	Perform Comparative Analysis of Policies
57	•	Develop Policies
58	•	Validate/Adjust Policies
Skill: Standards Development		
63	•	Identify Standards Need/Concerns
64	•	Perform Comparative Analysis of Standards
65	•	Develop Standards
66	•	Validate/Adjust Standards
Knowledge: Systems Hardware & Software		
67	•	Mainframes/Minis/Micros
68	•	Database Management Systems
Knowledge: Architecture		
70	•	Business Architecture
71	•	Work Architecture

72	•	Information Architecture
73	•	Applications Architecture
Skill: Architecture		
79	•	Technology Architecture
Knowledge: Application and/or System Software Construction		
82	•	Software Engineering Principles
83	•	System Development Life Cycle (SDLC)
84	•	Modelling
85	•	Methodologies
86	•	Documentation
Knowledge: Integration		
87	•	System Integration Principles
88	•	Testing/Validation
Knowledge: Networks		
89	•	Telecommunications Principles
90	•	WAN
91	•	LAN
92	•	Gateways
93	•	VPN
Knowledge: Management of IT Support Processes		
150	•	Operations Related Support Processes
151	•	Network Management Related Support Processes
152	•	Repository Administration
153	•	IT Security Management
154	•	Change Management
155	•	Release Management
156	•	Problem Management
157	•	Performance Measurement
158	•	Configuration Management
159	•	Capacity Planning
Skill: Management of IT Support Processes		
160	•	Define Configuration Management Procedures
161	•	Define Change Management Procedures
162	•	Define Release Management Procedures
163	•	Define Problem Management Procedures
165	•	Define Documentation Maintenance Procedures
Knowledge: Security Systems		
166	•	Encryption Concepts & Standards
167	•	Secure Applications
168	•	Personnel Identification & Authentication Concepts & Technology
Knowledge: Web Development		
191	•	Web Site Design
192	•	Web Site Authoring Tools
193	•	Web Site Graphics
194	•	Web Site Multimedia
198	•	Internet Security Technology
199	•	Internet Protocols
200	•	Internet Browsers
201	•	Internet Browser Plugins
202	•	Web Servers
Skill: Web Development		
203	•	Web Site design
204	•	Web Site Authoring Tools
205	•	Web Site Graphics

206	•	Website Multimedia
207	•	Usability
208	•	Web Site Databases
209	•	Internet Security Technology Implementation
Knowledge: e-Commerce		
212	•	e-Commerce Standards
213	•	e-Commerce Architecture
214	•	e-Commerce Security Issues
215	•	e-Commerce Protocols
Skill: e-Commerce		
216	•	e-Commerce Architecture
217	•	e-Commerce Security Issues
218	•	e-Commerce Protocols
219	•	Establish & Implement Principles of Operational Competencies
220	•	Develop e-Commerce Policies & Standards
221	•	e-Commerce Servers

Role:	**e-Commerce Portal Specialist**
Minimum years of related experience:	5 years IT
Minimum years of experience in this specific Role:	2 years

Responsibilities could include but are not limited to:

- Designs high-usability web pages to meet the requirement in an e-commerce environment;
- Verifies accuracy and completeness of programs by preparing sample data, and testing them by means of system acceptance test runs made by operating personnel;
- Participates in work related to customized portal services with internal/external clients, consultants and other areas on specific transactions to gain insight into the general market needs;
- Corrects program errors by revising instructions or altering the sequence of operations;
- Tests instructions, and assembles specifications, flow charts, diagrams, layouts, programming and operating instructions to document applications for later modification or references;
- Delivers quality applications in a dynamic, fast paced environment providing participation in the testing, debugging and integration of web based applications using JSP, JavaScript, HTML, XML, Java and Adobe Web packages in a e-commerce environment using COM+, J2EE architecture;
- Develops content diagrams showing the interactive connection between pages;
- Develops interactive prototypes showing basic form and functionality that are used for both usability testing and presentations;
- Participates in the analysis, design and development of e-Commerce applications, G2G, G2C and G2B e-commerce applications and systems for supplier, invoice/bill presentment, payment, and data interchange;
- Works with Web development team to develop the 3D projects through all stages of the system development cycle with focus on interface design to create web pages using cutting-edge web technologies such as Adobe Illustrator, Adobe Photoshop, Macromedia Flash, Dreamweaver, Freehand, 3d, Shockwave, JavaScript, streaming media, DHTML, CSS and ActiveX Controls;
- Designs various multimedia applications e.g. MPEG-4 and H.263 codes based on JPEG and JPEG 2000 standards to enable services like video conferencing, video streaming and audio streaming;
- Coordinates the design of new contents to the e-commerce platform by working across the entire production team on a daily basis, and working specifically with other producers, designers and Web developers; and
- Works with other team members to define, design and develop scalable and reliable server-side web applications using one or more of the following: HTML, XML, JavaScript, Java, JDBC, ADO, C++, CGI, EJB, J2EE, DHTML, CSS and ActiveX Controls.

Competencies:
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Required & Demonstrable Skill: Expertise to perform a specific activity or function

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1	• Electronic Service Delivery (ESD) Initiative
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4	• Internet Security
5	• Internet Service Delivery Principles and Theories
Knowledge: Systems Hardware & Software	
67	• Mainframes/Minis/Micros
68	• Database Management Systems
Knowledge: Architecture	
73	• Applications Architecture

74	• Technology Architecture
Knowledge: Application and/or System Software Construction	
82	• Software Engineering Principles
83	• System Development Life Cycle (SDLC)
84	• Modelling
85	• Methodologies
86	• Documentation
Knowledge: Integration	
87	• System Integration Principles
88	• Testing/Validation
Knowledge: Networks	
89	• Telecommunications Principles
90	• WAN
91	• LAN
92	• Gateways
93	• VPN
Skill: Application Construction & Integration: *Preliminary Analysis*	
114	• Examine Current System
115	• Define System Context/Objectives
116	• Build Conceptual Data Model
117	• Build Conceptual Process Model
Skill: Application Construction & Integration: *System Architecture*	
125	• Outline Physical Process Model
Skill: Application Construction & Integration: *Functional Design*	
126	• Plan Release Implementation
127	• Build Functional Data Model
128	• Write Unit Process Specification
Skill: Application Construction & Integration: *System Construction*	
129	• Define Physical Data Model
130	• Define Physical Process Model
131	• Program Physical Data Model
132	• Program Physical Process Model
133	• Prepare Implementation Document
134	• Prepare Installation
135	• Prepare Test Environment
136	• Conduct Functional Test
Skill: Application Construction & Integration: *Implementation*	
137	• Install System
138	• Conduct System Tests
139	• Start Production
Knowledge: Management of IT Support Processes	
150	• Operations Related Support Processes
151	• Network Management Related Support Processes
152	• Repository Administration
153	• IT Security Management
154	• Change Management
155	• Release Management
156	• Problem Management
157	• Performance Measurement
158	• Configuration Management
159	• Capacity Planning
Knowledge: Security Systems	
166	• Encryption Concepts & Standards
167	• Secure Applications

168	•	Personnel Identification & Authentication Concepts & Technology
Knowledge: Web Development		
191	•	Web Site Design
192	•	Web Site Authoring Tools
193	•	Web Site Graphics
194	•	Web Site Multimedia
198	•	Internet Security Technology
199	•	Internet Protocols
200	•	Internet Browsers
201	•	Internet Browser Plugins
202	•	Web Servers
Skill: Web Development		
203	•	Web Site design
204	•	Web Site Authoring Tools
205	•	Web Site Graphics
206	•	Website Multimedia
207	•	Usability
208	•	Web Site Databases
209	•	Internet Security Technology Implementation
Knowledge: e-Commerce		
212	•	e-Commerce Standards
213	•	e-Commerce Architecture
214	•	e-Commerce Security Issues
215	•	e-Commerce Protocols
Skill: e-Commerce		
216	•	e-Commerce Architecture
217	•	e-Commerce Security Issues
218	•	e-Commerce Protocols
219	•	Establish & Implement Principles of Operational Competencies
220	•	Develop e-Commerce Policies & Standards
221	•	e-Commerce Servers

Role:	**e-Commerce Solutions Specialist**
Minimum years of related experience:	5 years IT
Minimum years of experience in this specific Role:	2 years

Responsibilities <u>could</u> include but are not limited to:

- Assists in the delivery of e-Commerce-focused technology-based business solutions;
- Performs an integral role on project teams by managing team progress on a daily basis and interacting with team members throughout the execution of the project;
- Leads/assists with reviews and assessments to aid the development of e-commerce strategies, build prototypes, develop applications and build interfaces with legacy, enterprise resource planning and other enterprise systems;
- Develops, plans, designs and builds e-Commerce architectures using Java, C++, Visual Basic, Perl/CGI, HTML/DHML/XML, CSS, DTD, SOAP, XSLT, TCP/IP, Javascript, Enterprise Java Beans, Java Servlets, VB Script, Visual C++ languages and protocols;
- Collaborates with the project manager to develop plans and estimates;
- Arbitrates any discussions related to design issues that occur during the course of the project;
- Plans and designs G2G, G2C and G2B e-commerce applications and systems for supplier, invoice/bill presentment, payment, and data interchange; and
- Works cooperatively with other organizations including client service delivery, product management, development, technical support and operations.

Competencies:
See definitions in attached Competency Glossary – no other interpretations will be considered

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Required & Demonstrable Skill: <u>Expertise to perform a specific activity or function</u>

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55	•	Identify Policy Need/Concerns
56	•	Perform Comparative Analysis of Policies
57	•	Develop Policies
58	•	Validate/Adjust Policies
Skill: Standards Development		
63	•	Identify Standards Need/Concerns
64	•	Perform Comparative Analysis of Standards
65	•	Develop Standards
66	•	Validate/Adjust Standards
Knowledge: Systems Hardware & Software		
67	•	Mainframes/Minis/Micros
68	•	Database Management Systems
Knowledge: Architecture		
70	•	Business Architecture
71	•	Work Architecture
72	•	Information Architecture

73	• Applications Architecture
Skill: Architecture	
79	• Technology Architecture
Knowledge: Application and/or System Software Construction	
82	• Software Engineering Principles
83	• System Development Life Cycle (SDLC)
84	• Modelling
85	• Methodologies
86	• Documentation
Knowledge: Integration	
87	• System Integration Principles
88	• Testing/Validation
Knowledge: Networks	
89	• Telecommunications Principles
90	• WAN
91	• LAN
92	• Gateways
93	• VPN
Skill: Network Integration	
94	• Develop Plan
95	• Conduct Capacity Planning
96	• Design Network
97	• Perform Cost/Benefit Analysis
Skill: Hardware Integration	
100	• Develop Plan
101	• Conduct Capacity Planning
102	• Define Hardware Platform
103	• Perform Cost/Benefit Analysis
Skill: Software Integration	
107	• Develop Plan
108	• Conduct Capacity Planning
109	• Define System/Infrastructure
110	• Perform Cost/Benefit Analysis
Knowledge: Management of IT Support Processes	
150	• Operations Related Support Processes
151	• Network Management Related Support Processes
152	• Repository Administration
153	• IT Security Management
154	• Change Management
155	• Release Management
156	• Problem Management
157	• Performance Measurement
158	• Configuration Management
159	• Capacity Planning
Skill: Management of IT Support Processes	
160	• Define Configuration Management Procedures
161	• Define Change Management Procedures
162	• Define Release Management Procedures
163	• Define Problem Management Procedures
165	• Define Documentation Maintenance Procedures
Knowledge: Security Systems	
166	• Encryption Concepts & Standards
167	• Secure Applications
168	• Personnel Identification & Authentication Concepts & Technology

Knowledge: Web Development		
191	•	Web Site Design
192	•	Web Site Authoring Tools
193	•	Web Site Graphics
194	•	Web Site Multimedia
198	•	Internet Security Technology
199	•	Internet Protocols
200	•	Internet Browsers
201	•	Internet Browser Plugins
202	•	Web Servers
Skill: Web Development		
203	•	Web Site design
204	•	Web Site Authoring Tools
205	•	Web Site Graphics
206	•	Website Multimedia
207	•	Usability
208	•	Web Site Databases
209	•	Internet Security Technology Implementation
Knowledge: e-Commerce		
212	•	e-Commerce Standards
213	•	e-Commerce Architecture
214	•	e-Commerce Security Issues
215	•	e-Commerce Protocols
Skill: e-Commerce		
216	•	e-Commerce Architecture
217	•	e-Commerce Security Issues
218	•	e-Commerce Protocols
219	•	Establish & Implement Principles of Operational Competencies
220	•	Develop e-Commerce Policies & Standards
221	•	e-Commerce Servers

Role:	**e-Commerce Security Specialist**
Minimum years of related experience:	5 years IT
Minimum years of experience in this specific Role:	2 years

Responsibilities could include but are not limited to:

- Develops security policies, standards, guidelines and procedures for e-commerce applications and systems for supplier, invoice/bill presentment, payment, and data interchange;
- Reviews existing security policies, standards, guidelines and procedures and providing advice as to their appropriateness and effectiveness;
- Conducts compliance audits of Internet operations, application systems and infrastructure SSL encryption under one or more security software packages such as PKI, Network Magic, and Xcert;
- Conducts security threat and risk assessments of Web facilities, application systems and communications;
- Conducts reviews of backup and recovery plans;
- Investigates security incidents and reporting causes and related weaknesses and recommending remedies;
- Designs the security framework and the security components of IT & Internet/Intranet infrastructure required to protect assets and to support application systems;
- Provides advice on the security aspects of application systems under development; and
- Develops and delivers Internet Security awareness and training programs.

Competencies:
See definitions in attached Competency Glossary – no other interpretations will be considered

(NOTE: THE ID NUMBERS TO THE LEFT OF THE REQUIRED COMPETENCIES LISTED BELOW CORRESPOND TO THE GLOSSARY COMPETENCY DEFINITION ID NUMBERS)

Required & Demonstrable Knowledge: Familiarity with and understanding of a subject
Required & Demonstrable Skill: Expertise to perform a specific activity or function

Knowledge: Electronic Service Delivery (ESD)		
1	•	Electronic Service Delivery (ESD) Initiative
2	•	The World Wide Web
3	•	Internet, Intranets, Extranets
4	•	Internet Security
5	•	Internet Service Delivery Principles and Theories
Skill: Project Management		
20	•	Risk Management
Skill: Strategic Planning		
47	•	Gather and Consolidate Relevant Data/Information
48	•	Perform Environmental Scans
49	•	Develop and Write a Strategic Plan
50	•	Build Consensus on Strategy and Direction
Skill: Policy Development		
55	•	Identify Policy Need/Concerns
56	•	Perform Comparative Analysis of Policies
57	•	Develop Policies
58	•	Validate/Adjust Policies
Skill: Standards Development		
63	•	Identify Standards Need/Concerns
64	•	Perform Comparative Analysis of Standards
65	•	Develop Standards
66	•	Validate/Adjust Standards
Knowledge: Systems Hardware & Software		
67	•	Mainframes/Minis/Micros
68	•	Database Management Systems

Knowledge: Application and/or System Software Construction		
82	•	Software Engineering Principles
83	•	System Development Life Cycle (SDLC)
Knowledge: Management of IT Support Processes		
150	•	Operations Related Support Processes
151	•	Network Management Related Support Processes
152	•	Repository Administration
153	•	IT Security Management
154	•	Change Management
155	•	Release Management
156	•	Problem Management
Skill: Management of IT Support Processes		
164	•	Define Security Management Procedures
Knowledge: Security Systems		
166	•	Encryption Concepts & Standards
167	•	Secure Applications
168	•	Personnel Identification & Authentication Concepts & Technology
Knowledge: Web Development		
191	•	Web Site Design
192	•	Web Site Authoring Tools
193	•	Web Site Graphics
194	•	Web Site Multimedia
198	•	Internet Security Technology
199	•	Internet Protocols
200	•	Internet Browsers
201	•	Internet Browser Plugins
202	•	Web Servers
Skill: Web Development		
203	•	Web Site design
204	•	Web Site Authoring Tools
205	•	Web Site Graphics
206	•	Website Multimedia
207	•	Usability
208	•	Web Site Databases
209	•	Internet Security Technology Implementation
Knowledge: e-Commerce		
212	•	E-Commerce Standards
213	•	E-Commerce Architecture
214	•	E-Commerce Security Issues
215	•	E-Commerce Protocols
Skill: e-Commerce		
216	•	e-Commerce Architecture
217	•	e-Commerce Security Issues
218	•	e-Commerce Protocols
219	•	Establish & Implement Principles of Operational Competencies
220	•	Develop e-Commerce Policies & Standards
221	•	e-Commerce Servers

Role:	**Business Analyst, e-Commerce User Interface**
Minimum years of related experience:	5 years IT
Minimum years of experience in this specific Role:	2 years

Responsibilities <u>could</u> include but are not limited to:

- Develops and documents a detailed statement of requirements and solutions for the proposed integration of e-Commerce;
- Works with the Product Development Team on the User Interface (Web, GUI, IVR), facilitate Application Design Workshops with the marketing department, and develops functional specifications for applications;
- Provides guidance and cross-training to the development team leaders, and works with documentation specialists to design online help facilities;
- Analyzes functional requirements to identify information, procedures and decision flows;
- Evaluates existing procedures and methods, identifies and documents database content, structure, and application sub-systems, and develops data dictionaries;
- Defines and documents interfaces of manual to automated operations within sub-systems, to external systems and between new and existing systems;
- Defines input/output sources, including detail plan for technical design phase, and obtains approval of the system proposal;
- Designs and documents in detail all system components, their interfaces and operational environment;
- Designs data structures and files, sub-systems and modules, programs, batch, on line, and production monitoring procedures, testing strategy and systems;
- Documents system design, concepts and facilities, presents and obtains approval of detailed system design; and
- Produces an operational system including all forms, manuals, programs, data files and procedures.

Competencies:
See definitions in attached Competency Glossary – no other interpretations will be considered

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Required & Demonstrable Knowledge: <u>Familiarity with and understanding of a subject</u>
Required & Demonstrable Skill: <u>Expertise to perform a specific activity or function</u>

	Knowledge: Electronic Service Delivery (ESD)
1	• Electronic Service Delivery (ESD) Initiative
2	• The World Wide Web
3	• Internet, Intranets, Extranets
4	• Internet Security
5	• Internet Service Delivery Principles and Theories
	Skill: Policy Development
55	• Identify Policy Need/Concerns
56	• Perform Comparative Analysis of Policies
57	• Develop Policies
58	• Validate/Adjust Policies
	Skill: Standards Development
63	• Identify Standards Need/Concerns
64	• Perform Comparative Analysis of Standards
65	• Develop Standards
66	• Validate/Adjust Standards
	Knowledge: Systems Hardware & Software
67	• Mainframes/Minis/Micros
68	• Database Management Systems

Knowledge: Application and/or System Software Construction		
82	•	Software Engineering Principles
83	•	System Development Life Cycle (SDLC)
84	•	Modelling
85	•	Methodologies
86	•	Documentation
Knowledge: Networks		
89	•	Telecommunications Principles
90	•	WAN
91	•	LAN
92	•	Gateways
93	•	VPN
Knowledge: Management of IT Support Processes		
150	•	Operations Related Support Processes
151	•	Network Management Related Support Processes
152	•	Repository Administration
153	•	IT Security Management
154	•	Change Management
155	•	Release Management
156	•	Problem Management
157	•	Performance Measurement
158	•	Configuration Management
159	•	Capacity Planning
Knowledge: Security Systems		
166	•	Encryption Concepts & Standards
167	•	Secure Applications
168	•	Personnel Identification & Authentication Concepts & Technology
Knowledge: Web Development		
191	•	Web Site Design
192	•	Web Site Authoring Tools
193	•	Web Site Graphics
194	•	Web Site Multimedia
195	•	Virtual Reality Modeling Language (VRML)
198	•	Internet Security Technology
199	•	Internet Protocols
200	•	Internet Browsers
201	•	Internet Browser Plugins
202	•	Web Servers
Knowledge: e-Commerce		
212	•	E-Commerce Standards
213	•	E-Commerce Architecture
214	•	E-Commerce Security Issues
215	•	E-Commerce Protocols
Skill: e-Commerce		
216	•	e-Commerce Architecture
217	•	e-Commerce Security Issues
218	•	e-Commerce Protocols
219	•	Establish & Implement Principles of Operational Competencies
220	•	Develop e-Commerce Policies & Standards
221	•	e-Commerce Servers

Role:	**Technical Writer e-Commerce User Interface**
Minimum years of related experience:	5 years IT
Minimum years of experience in this specific Role:	2 years

Responsibilities *could* include but are not limited to:

- Prepares documentation including help text, user manuals, technical documentation, web page content connected to e-Commerce setup and transaction processes;
- Reviews documentation standards and the existing project documentation;
- Determines documentation requirements and makes plans for meeting them;
- Gathers information concerning the features and functions provided by the developers;
- Surveys the clients to determine their requirements for the documents/manuals and prepares a statement of purpose and scope for each documents/manuals;
- Develops a table of content for each document/manual and writes or edits the required content;
- Investigates the accuracy of the information collected by making direct use of the material being documented;
- Prepares or co-ordinates the preparation of any required illustrations and diagrams;
- Designs the layout of the documents/manuals; and
- Uses word-processing, desktop publishing and graphics software packages to produce final camera-ready copy.

Competencies:
See definitions in attached Competency Glossary – no other interpretations will be considered

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Required & Demonstrable Knowledge: Familiarity with and understanding of a subject
Required & Demonstrable Skill: Expertise to perform a specific activity or function

	Knowledge: Electronic Service Delivery (ESD)
1	• Electronic Service Delivery (ESD) Initiative
2	• The World Wide Web
3	• Internet, Intranets, Extranets
4	• Internet Security
5	• Internet Service Delivery Principles and Theories
	Knowledge: Systems Hardware & Software
67	• Mainframes/Minis/Micros
68	• Database Management Systems
	Knowledge: Application and/or System Software Construction
82	• Software Engineering Principles
83	• System Development Life Cycle (SDLC)
84	• Modelling
85	• Methodologies
86	• Documentation
	Knowledge: Networks
89	• Telecommunications Principles
90	• WAN
91	• LAN
92	• Gateways
93	• VPN
	Skill: Application Construction & Integration: *System Construction*
133	• Prepare Implementation Document
	Knowledge: Management of IT Support Processes

150	•	Operations Related Support Processes
151	•	Network Management Related Support Processes
152	•	Repository Administration
153	•	IT Security Management
157	•	Performance Measurement
Skill: Writing Tools		
213	•	Skill in the use of Desktop Publishing Packages
214	•	Skill in the use of Web Site Content Development Packages
Knowledge: Security Systems		
166	•	Encryption Concepts & Standards
167	•	Secure Applications
168	•	Personnel Identification & Authentication Concepts & Technology
Knowledge: Web Development		
191	•	Web Site Design
192	•	Web Site Authoring Tools
193	•	Web Site Graphics
194	•	Web Site Multimedia
198	•	Internet Security Technology
199	•	Internet Protocols
200	•	Internet Browsers
201	•	Internet Browser Plugins
202	•	Web Servers
Knowledge: e-Commerce		
212	•	E-Commerce Standards
213	•	E-Commerce Architecture
214	•	E-Commerce Security Issues
225	•	E-Commerce Protocols
Skill: Communicating		
230	•	Listening to Clients/Peers
231	•	Writing Clearly and Concisely

Role:	**Project Manager, m-Commerce**
Minimum years of related experience:	4 years Project Management *plus* 5 years IT
Minimum years of experience in this Role:	1 years

Responsibilities *could* include but are not limited to:

- Manages projects related to the design and integration of wireless systems;
- Manages the project during the development, design and operations startup by ensuring that resources are made available and that the application/system is developed and is fully operational within previously agreed time, cost and performance parameters;
- Formulates statements of management, scientific and business problems, establishes procedures for the development and design of significant, new or modified applications/systems to solve these problems, and obtains approval thereof;
- Defines and documents the objectives for the project; determines budgetary requirements, the composition, roles and responsibilities and terms of reference for the project team;
- Reports progress of the project on an ongoing basis to the client and at scheduled points in the life cycle to the sponsors of the project;
- Prepares plans, charts, tables and diagrams to assist in analyzing or displaying problems;
- Works with a variety of scientific, business or engineering tools requiring a sound knowledge of mathematics and management sciences;
- Provides leadership to direct the planning, organization and control of development projects concept to the design of the solutions;
- Works with business partners and other technology areas to identify prospective business needs and develop strategies to match those needs;
- Understands the business and technology priorities and effectively communicates technology changes to the business;
- Accounts for the 24 hour by 7 day support of the business, in so far as the design and maintenance of systems are concerned;
- Holds regular one-on-one meetings with staff for feedback, coaching, career development and performance status;
- Conducts mid-year and year-end performance reviews with each team member; and
- Project sign-off.

Competencies:
See definitions in attached Competency Glossary – no other interpretations will be considered

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Required & Demonstrable Knowledge: Familiarity with and understanding of a subject
Required & Demonstrable Skill: Expertise to perform a specific activity or function

Knowledge: Electronic Service Delivery (ESD)	
1	• Electronic Service Delivery (ESD) Initiative
2	• The World Wide Web
3	• Internet, Intranets, Extranets
4	• Internet Security
5	• Internet Service Delivery Principles and Theories

Skill: Project Management	
15	• Planning a Project
16	• Organizing a Project
17	• Controlling a Project
18	• Leading a Project Team

19	•	Quality Management
20	•	Risk Management
23	•	Project Management Packages

Skill: Financial Management

24	•	Cost Analysis
25	•	Budget Preparation
26	•	Budget Control

Skill: Opportunity Evaluation

27	•	Conduct Opportunity Evaluation
28	•	Write Project Proposal

Knowledge: Business Planning

29	•	Define Business
30	•	Establish a Vision for the Business
31	•	Perform an Environmental Scan
32	•	Develop Strategic Direction
33	•	Prepare Business Plans
34	•	Communicate/Market Business Plans
35	•	Implement Business Plans

Knowledge: Strategic Planning

43	•	Gather and Consolidate Relevant Data/Information
44	•	Perform Environmental Scans
45	•	Develop and Write a Strategic Plan
46	•	Build Consensus on Strategy and Direction

Knowledge: Policy Development

51	•	Identify Policy Need/Concerns
52	•	Perform Comparative Analysis of Policies
53	•	Develop Policies
54	•	Validate/Adjust Policies

Knowledge: Standards Development

59	•	Identify Standards Need/Concerns
60	•	Perform Comparative Analysis of Standards
61	•	Develop Standards
62	•	Validate/Adjust Standards

Knowledge: Systems Hardware & Software

67	•	Mainframes/Minis/Micros
68	•	Database Management Systems

Knowledge: Architecture

69	•	Architecture Principles

Knowledge: Application and/or System Software Construction

82	•	Software Engineering Principles
83	•	System Development Life Cycle (SDLC)
84	•	Modelling
85	•	Methodologies
86	•	Documentation

Knowledge: Integration

87	•	System Integration Principles
88	•	Testing/Validation

Knowledge: Networks

89	•	Telecommunications Principles
90	•	WAN
91	•	LAN
92	•	Gateways
93	•	VPN

Knowledge: Management of IT Support Processes		
150	•	Operations Related Support Processes
151	•	Network Management Related Support Processes
152	•	Repository Administration
153	•	IT Security Management
154	•	Change Management
155	•	Release Management
156	•	Problem Management
157	•	Performance Measurement
158	•	Configuration Management
159	•	Capacity Planning
Knowledge: Security Systems		
166	•	Encryption Concepts & Standards
167	•	Secure Applications
168	•	Personnel Identification & Authentication Concepts & Technology
Knowledge: Web Development		
191	•	Web Site Design
192	•	Web Site Authoring Tools
193	•	Web Site Graphics
194	•	Website Multimedia
198	•	Internet Security Technology
199	•	Internet Protocols
200	•	Internet Browsers
201	•	Internet Browser Plugins
202	•	Web Servers
Knowledge: e-Commerce		
212	•	E-Commerce Standards
213	•	E-Commerce Architecture
214	•	E-Commerce Security Issues
215	•	E-Commerce Protocols

Role:	**Wireless Technology Architect**
Minimum years of related experience:	5 years IT
Minimum years of experience in this specific Role:	2 years

Responsibilities could include but are not limited to:

- Enables the introduction, integration and use of technologies across the wireless platform;
- Develops technical architecture designs to meet specific project requirements while adhering to standards and overall direction;
- Conducts technical feasibility studies of proposed solutions in order to evaluate the technical issues and options of the proposals as well as the technical impact, costs and risks to the projects;
- Provides assistance to other team members to design wireless technology applications using programming languages (C++, JAVA), operating systems (NT, UNIX, CE), and WAP technologies (WML, WMLscript)
- Develops plans for the wireless architectural components of the Project and to provide input into I&IT operational plans;
- Develops and documents a detailed statement of requirements for the proposed wireless system;
- Adapts existing algorithms to SIMD architecture;
- Designs data structures and files, sub-systems and modules, programs, batch, on line, and production monitoring procedures, testing strategy and systems;
- Defines input/output sources, including detail plan for technical design phase, and obtains approval of the system proposal;
- Documents system design, concepts and facilities, presents and obtains approval of detailed system design;
- Produces an operational system including all forms, manuals, programs, data files and procedures;
- Prepares implementation plans for particular technologies;
- Provides ongoing services related to the Web for the full cycle of the project;
- Conducts architectural research into evolving technologies;
- Organizes and presents technical information in a lucid and convincing manner;
- Provides policy development process to participate in the development of standard architectural infrastructure and service delivery recommendations as part of the Project team; and
- Provides assistance to other team members for designing and managing wireless architecture diverse hardware platforms.

Competencies:
See definitions in attached Competency Glossary – no other interpretations will be considered

(NOTE: THE ID NUMBERS TO THE LEFT OF THE REQUIRED COMPETENCIES LISTED BELOW CORRESPOND TO THE GLOSSARY COMPETENCY DEFINITION ID NUMBERS)

Required & Demonstrable Knowledge: Familiarity with and understanding of a subject
Required & Demonstrable Skill: Expertise to perform a specific activity or function

	Knowledge: Electronic Service Delivery (ESD)
1	• Electronic Service Delivery (ESD) Initiative
2	• The World Wide Web
3	• Internet, Intranets, Extranets
4	• Internet Security
5	• Internet Service Delivery Principles and Theories
	Skill: Policy Development
55	• Identify Policy Need/Concerns
56	• Perform Comparative Analysis of Policies
57	• Develop Policies
58	• Validate/Adjust Policies
	Skill: Standards Development
63	• Identify Standards Need/Concerns
64	• Perform Comparative Analysis of Standards

65	•	Develop Standards
66	•	Validate/Adjust Standards
Knowledge: Systems Hardware & Software		
67	•	Mainframes/Minis/Micros
68	•	Database Management Systems
Knowledge: Architecture		
70	•	Business Architecture
71	•	Work Architecture
72	•	Information Architecture
73	•	Applications Architecture
Skill: Architecture		
79	•	Technology Architecture
Knowledge: Application and/or System Software Construction		
82	•	Software Engineering Principles
83	•	System Development Life Cycle (SDLC)
84	•	Modelling
85	•	Methodologies
86	•	Documentation
Knowledge: Integration		
87	•	System Integration Principles
88	•	Testing/Validation
Knowledge: Networks		
89	•	Telecommunications Principles
90	•	WAN
91	•	LAN
92	•	Gateways
93	•	VPN
Skill: Network Integration		
94	•	Develop Plan
95	•	Conduct Capacity Planning
96	•	Design Network
97	•	Perform Cost/Benefit Analysis
Skill: Hardware Integration		
100	•	Develop Plan
101	•	Conduct Capacity Planning
102	•	Define Hardware Platform
103	•	Perform Cost/Benefit Analysis
Skill: Software Integration		
107	•	Develop Plan
108	•	Conduct Capacity Planning
109	•	Define System/Infrastructure
110	•	Perform Cost/Benefit Analysis
Knowledge: Management of IT Support Processes		
150	•	Operations Related Support Processes
151	•	Network Management Related Support Processes
152	•	Repository Administration
153	•	IT Security Management
154	•	Change Management
155	•	Release Management
156	•	Problem Management
157	•	Performance Measurement
158	•	Configuration Management
159	•	Capacity Planning
Skill: Management of IT Support Processes		
160	•	Define Configuration Management Procedures

161	•	Define Change Management Procedures
162	•	Define Release Management Procedures
163	•	Define Problem Management Procedures
165	•	Define Documentation Maintenance Procedures

Knowledge: Security Systems

166	•	Encryption Concepts & Standards
167	•	Secure Applications
168	•	Personnel Identification & Authentication Concepts & Technology

Knowledge: Web Development

191	•	Web Site Design
192	•	Web Site Authoring Tools
193	•	Web Site Graphics
194	•	Website Multimedia
198	•	Internet Security Technology
199	•	Internet Protocols
200	•	Internet Browsers
201	•	Internet Browser Plugins
202	•	Web Servers

Skill: Web Development

203	•	Web Site design
204	•	Web Site Authoring Tools
205	•	Web Site Graphics
206	•	Website Multimedia
207	•	Usability
208	•	Web Site Databases
209	•	Internet Security Technology Implementation

Knowledge: Wireless m-Commerce

169	•	Wireless Solutions Products
170	•	Wireless Manipulation Language
171	•	Wireless Application Protocol (WAP)
172	•	Cellular Radio Multiple Access Protocols
173	•	Geo-Position Sensing (GPS)
174	•	Voice over IP (VOIP)

Skill: Wireless m-Commerce

222	•	Wireless Solutions Technology
223	•	Wireless Solutions Products
224	•	Wireless Standards and Protocols
225	•	Wireless Application Languages
226	•	Cellular Radio Multiple Access Protocols
227	•	Transmission Technology Concepts
228	•	Geo-Position Sensing (GPS)
229	•	Voice over IP (VOIP)

Role:	**Wireless Product Specialist**
Minimum years of related experience:	5 years IT
Minimum years of experience in this specific Role:	2 years

Responsibilities could include but are not limited to:

- Performs design reviews, and acts as a mentor for project team members;
- Researches, evaluates and recommends technologies for projects;
- Develops and maintains technical specifications and object models for wireless products and services using leading edge Wireless technologies; WAP;
- Evaluates and recommends architecture design for wireless applications;
- Collaborates with users to determine content, data processing and capacity requirements, user access levels, software and hardware requirements;
- Recommends and utilizes technologies to secure data and ensure access only to qualified users;
- Provides technical advice and support to other staff members;
- Designs wireless interfaces to relational database; and
- Designs m-commerce applications using programming languages (C++, JAVA), operating systems (NT, UNIX,CE), and WAP technologies (WML, WMLscript).

Competencies:
See definitions in attached Competency Glossary – no other interpretations will be considered

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Required & Demonstrable Skill: Expertise to perform a specific activity or function

Knowledge: Electronic Service Delivery (ESD)		
1	•	Electronic Service Delivery (ESD) Initiative
2	•	The World Wide Web
3	•	Internet, Intranets, Extranets
4	•	Internet Security
5	•	Internet Service Delivery Principles and Theories
Knowledge: Policy Development		
51	•	Identify Policy Need/Concerns
52	•	Perform Comparative Analysis of Policies
53	•	Develop Policies
54	•	Validate/Adjust Policies
Skill: Policy Development		
55	•	Identify Policy Need/Concerns
56	•	Perform Comparative Analysis of Policies
57	•	Develop Policies
58	•	Validate/Adjust Policies
Skill: Standards Development		
63	•	Identify Standards Need/Concerns
64	•	Perform Comparative Analysis of Standards
65	•	Develop Standards
66	•	Validate/Adjust Standards
Knowledge: Systems Hardware & Software		
67	•	Mainframes/Minis/Micros
68	•	Database Management Systems

Knowledge: Architecture		
70	•	Business Architecture
71	•	Work Architecture
72	•	Information Architecture
73	•	Applications Architecture
Knowledge: Application and/or System Software Construction		
82	•	Software Engineering Principles
83	•	System Development Life Cycle (SDLC)
84	•	Modelling
85	•	Methodologies
86	•	Documentation
Knowledge: Integration		
87	•	System Integration Principles
88	•	Testing/Validation
Knowledge: Networks		
89	•	Telecommunications Principles
90	•	WAN
91	•	LAN
92	•	Gateways
93	•	VPN
Knowledge: Management of IT Support Processes		
150	•	Operations Related Support Processes
151	•	Network Management Related Support Processes
152	•	Repository Administration
153	•	IT Security Management
154	•	Change Management
155	•	Release Management
156	•	Problem Management
157	•	Performance Measurement
158	•	Configuration Management
159	•	Capacity Planning
Knowledge: Security Systems		
166	•	Encryption Concepts & Standards
167	•	Secure Applications
168	•	Personnel Identification & Authentication Concepts & Technology
Knowledge: Web Development		
191	•	Web Site Design
192	•	Web Site Authoring Tools
193	•	Web Site Graphics
194	•	Website Multimedia
198	•	Internet Security Technology
199	•	Internet Protocols
200	•	Internet Browsers
201	•	Internet Browser Plugins
202	•	Web Servers
Knowledge: Wireless m-Commerce		
169	•	Wireless Solutions Products
170	•	Wireless Manipulation Language
171	•	Wireless Application Protocol (WAP)
172	•	Cellular Radio Multiple Access Protocols
173	•	Geo-Position Sensing (GPS)
174	•	Voice over IP (VOIP)
Skill: Wireless m-Commerce		
222	•	Wireless Solutions Technology

223	•	Wireless Solutions Products
224	•	Wireless Standards and Protocols
225	•	Wireless Application Languages
226	•	Cellular Radio Multiple Access Protocols
227	•	Transmission Technology Concepts
228	•	Geo-Position Sensing (GPS)
229	•	Voice over IP (VOIP)

Role:	**Wireless Solutions Developer**
Minimum years of related experience:	5 years IT
Minimum years of experience in this specific Role:	2 years

Responsibilities could include but are not limited to:

- Manages multiple initiatives with conflict resolution and persuasion skills;
- Works with Wireless Application Designers to support business development and solutions;
- Provides strategic technical guidance to other members of the team to develop cross platform - wireless and mobile systems;
- Evaluates and recommends architecture design for wireless applications using Java, C++, WAP, XML, HTTP, WebServer, TCP/IP HDML/WML protocols and emerging technologies such as Bluetooth;
- Applies background support for application testing to the Wireless Internet environment using wireless CDMA, TDMA and GSM interfaces;
- Works with the Product Development Team on the User Interface, facilitate Application Design Workshops, and develops functional specifications for applications;
- Analyzes functional requirements to identify information, procedures and decision flows;
- Evaluates existing procedures and methods, identifies and documents database content, structure, and application sub-systems, and develops data dictionaries;
- Collaborates with users to determine content, data processing and capacity requirements, user access levels, software and hardware requirements; and
- Recommends and utilize technologies to secure data and ensure access only to qualified users.

Competencies:
See definitions in attached Competency Glossary – no other interpretations will be considered

(NOTE: THE ID NUMBERS TO THE LEFT OF THE REQUIRED COMPETENCIES LISTED BELOW CORRESPOND TO THE GLOSSARY COMPETENCY DEFINITION ID NUMBERS)

Required & Demonstrable Knowledge: Familiarity with and understanding of a subject
Required & Demonstrable Skill: Expertise to perform a specific activity or function

Knowledge: Electronic Service Delivery (ESD)		
1	•	Electronic Service Delivery (ESD) Initiative
2	•	The World Wide Web
3	•	Internet, Intranets, Extranets
4	•	Internet Security
5	•	Internet Service Delivery Principles and Theories
Skill: Policy Development		
55	•	Identify Policy Need/Concerns
56	•	Perform Comparative Analysis of Policies
57	•	Develop Policies
58	•	Validate/Adjust Policies
Skill: Standards Development		
63	•	Identify Standards Need/Concerns
64	•	Perform Comparative Analysis of Standards
65	•	Develop Standards
66	•	Validate/Adjust Standards
Knowledge: Systems Hardware & Software		
67	•	Mainframes/Minis/Micros
68	•	Database Management Systems
Knowledge: Architecture		
70	•	Business Architecture
71	•	Work Architecture

72	•	Information Architecture
73	•	Applications Architecture
Skill: Architecture		
79	•	Technology Architecture
Knowledge: Application and/or System Software Construction		
82	•	Software Engineering Principles
83	•	System Development Life Cycle (SDLC)
84	•	Modelling
85	•	Methodologies
86	•	Documentation
Knowledge: Integration		
87	•	System Integration Principles
88	•	Testing/Validation
Knowledge: Networks		
89	•	Telecommunications Principles
90	•	WAN
91	•	LAN
92	•	Gateways
93	•	VPN
Skill: Network Integration		
94	•	Develop Plan
95	•	Conduct Capacity Planning
96	•	Design Network
97	•	Perform Cost/Benefit Analysis
Skill: Hardware Integration		
100	•	Develop Plan
101	•	Conduct Capacity Planning
102	•	Define Hardware Platform
103	•	Perform Cost/Benefit Analysis
Skill: Software Integration		
107	•	Develop Plan
108	•	Conduct Capacity Planning
109	•	Define System/Infrastructure
110	•	Perform Cost/Benefit Analysis
Knowledge: Management of IT Support Processes		
150	•	Operations Related Support Processes
151	•	Network Management Related Support Processes
152	•	Repository Administration
153	•	IT Security Management
154	•	Change Management
155	•	Release Management
156	•	Problem Management
157	•	Performance Measurement
158	•	Configuration Management
159	•	Capacity Planning
Skill: Management of IT Support Processes		
160	•	Define Configuration Management Procedures
161	•	Define Change Management Procedures
162	•	Define Release Management Procedures
163	•	Define Problem Management Procedures
165	•	Define Documentation Maintenance Procedures
Knowledge: Security Systems		
166	•	Encryption Concepts & Standards

167	•	Secure Applications
168	•	Personnel Identification & Authentication Concepts & Technology

Knowledge: Security Systems

166	•	Encryption Concepts & Standards
167	•	Secure Applications
168	•	Personnel Identification & Authentication Concepts & Technology

Knowledge: Web Development

191	•	Web Site Design
192	•	Web Site Authoring Tools
193	•	Web Site Graphics
194	•	Website Multimedia
198	•	Internet Security Technology
199	•	Internet Protocols
200	•	Internet Browsers
201	•	Internet Browser Plugins
202	•	Web Servers

Skill: Web Development

203	•	Web Site design
204	•	Web Site Authoring Tools
205	•	Web Site Graphics
206	•	Website Multimedia
207	•	Usability
208	•	Web Site Databases
209	•	Internet Security Technology Implementation

Knowledge: Wireless m-Commerce

169	•	Wireless Solutions Products
170	•	Wireless Manipulation Language
171	•	Wireless Application Protocol (WAP)
172	•	Cellular Radio Multiple Access Protocols
173	•	Geo-Position Sensing (GPS)
174	•	Voice over IP (VOIP)

Skill: Wireless m-Commerce

222	•	Wireless Solutions Technology
223	•	Wireless Solutions Products
224	•	Wireless Standards and Protocols
225	•	Wireless Application Languages
226	•	Cellular Radio Multiple Access Protocols
227	•	Transmission Technology Concepts
228	•	Geo-Position Sensing (GPS)
229	•	Voice over IP (VOIP)

	Role:	Wireless Applications Designer
	Minimum years of related experience:	5 years IT
	Minimum years of experience in this specific Role:	2 years

Responsibilities _could_ include but are not limited to:

- Defines service requirements for wireless applications in a Multi-Tier platform;
- Designs wireless application services;
- Designs SIMD (Single Instruction Stream Multiple Data Stream) algorithms needed in creating various real-time applications like Video compression (Mpeg, H.263), voice compression, speech recognition, still picture encoding (JPEG), and data encryption;
- Adapts existing algorithms to SIMD architecture;
- Prepares implementation plans for particular technologies;
- Installs and monitors particular facets of technology;
- Configures and optimizes technical installations;
- Maintains up to date knowledge of particular technologies; and products supporting that technology; and
- Advises developers of Web based application systems on the wireless access implication of their designs.

Competencies:
See definitions in attached Competency Glossary – no other interpretations will be considered

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4	• Internet Security
5	• Internet Service Delivery Principles and Theories
	Knowledge: Systems Hardware & Software
67	• Mainframes/Minis/Micros
68	• Database Management Systems
	Knowledge: Architecture
73	• Applications Architecture
74	• Technology Architecture
	Knowledge: Application and/or System Software Construction
82	• Software Engineering Principles
83	• System Development Life Cycle (SDLC)
84	• Modelling
85	• Methodologies
86	• Documentation
	Knowledge: Integration
87	• System Integration Principles
88	• Testing/Validation
	Knowledge: Networks
89	• Telecommunications Principles
90	• WAN
91	• LAN
92	• Gateways
93	• VPN

Skill: Application Construction & Integration: *Preliminary Analysis*		
114	•	Examine Current System
115	•	Define System Context/Objectives
116	•	Build Conceptual Data Model
117	•	Build Conceptual Process Model
Skill: Application Construction & Integration: *System Architecture*		
125	•	Outline Physical Process Model
Skill: Application Construction & Integration: *Functional Design*		
126	•	Plan Release Implementation
127	•	Build Functional Data Model
128	•	Write Unit Process Specification
Skill: Application Construction & Integration: *System Construction*		
129	•	Define Physical Data Model
130	•	Define Physical Process Model
131	•	Program Physical Data Model
132	•	Program Physical Process Model
133	•	Prepare Implementation Document
134	•	Prepare Installation
135	•	Prepare Test Environment
136	•	Conduct Functional Test
Skill: Application Construction & Integration: *Implementation*		
137	•	Install System
138	•	Conduct System Tests
139	•	Start Production
Knowledge: Management of IT Support Processes		
150	•	Operations Related Support Processes
151	•	Network Management Related Support Processes
152	•	Repository Administration
153	•	IT Security Management
154	•	Change Management
155	•	Release Management
156	•	Problem Management
157	•	Performance Measurement
158	•	Configuration Management
159	•	Capacity Planning
Knowledge: Security Systems		
166	•	Encryption Concepts & Standards
167	•	Secure Applications
168	•	Personnel Identification & Authentication Concepts & Technology
Knowledge: Web Development		
191	•	Web Site Design
192	•	Web Site Authoring Tools
193	•	Web Site Graphics
194	•	Website Multimedia
198	•	Internet Security Technology
199	•	Internet Protocols
200	•	Internet Browsers
201	•	Internet Browser Plugins
202	•	Web Servers
Knowledge: Wireless m-Commerce		
169	•	Wireless Solutions Products
170	•	Wireless Manipulation Language
171	•	Wireless Application Protocol (WAP)
172	•	Cellular Radio Multiple Access Protocols

173	• Geo-Position Sensing (GPS)
174	• Voice over IP (VOIP)
Skill: Wireless m-Commerce	
222	• Wireless Solutions Technology
223	• Wireless Solutions Products
224	• Wireless Standards and Protocols
225	• Wireless Application Languages
226	• Cellular Radio Multiple Access Protocols
227	• Transmission Technology Concepts
228	• Geo-Position Sensing (GPS)
229	• Voice over IP (VOIP)

Role:	**Technical Writer Wireless User Interface**
Minimum years of related experience:	5 years IT
Minimum years of experience in this specific Role:	2 years

Responsibilities could include but are not limited to:

- Prepares documentation including help text, user manuals, technical documentation, web page content connected to m-Commerce setup and transaction processes;
- Reviews documentation standards and the existing project documentation;
- Determines documentation requirements and ensures plans are met;
- Gathers information concerning the features and functions provided by the developers;
- Develops a table of contents for each document/manual and writes or edits the required content;
- Surveys the clients to determine their requirements for the documents/manuals and prepares a statement of purpose and scope for each documents/manuals;
- Defines and documents interfaces of manual to automated operations within sub-systems, to external systems and between new and existing systems;
- Documents, in detail, all system components, their interfaces and operational environment;
- Provides guidance and cross-training to the development team leaders, and works with documentation specialists to design online help facilities;
- Investigates the accuracy of the information collected by making direct use of the material being documented;
- Prepares or co-ordinates the preparation of any required illustrations and diagrams;
- Designs the layout of the documents/manuals; and
- Uses word-processing, desktop publishing and graphics software packages to produce final camera-ready copy.

Competencies:
See definitions in attached Competency Glossary – no other interpretations will be considered

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Required & Demonstrable Skill: Expertise to perform a specific activity or function

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4	• Internet Security
5	• Internet Service Delivery Principles and Theories
	Knowledge: Systems Hardware & Software
67	• Mainframes/Minis/Micros
68	• Database Management Systems
	Knowledge: Architecture
69	• Architecture Principles
	Knowledge: Application and/or System Software Construction
82	• Software Engineering Principles
83	• System Development Life Cycle (SDLC)
84	• Modelling
85	• Methodologies
86	• Documentation
	Knowledge: Integration
87	• System Integration Principles
88	• Testing/Validation
	Knowledge: Networks
89	• Telecommunications Principles

90	•	WAN
91	•	LAN
92	•	Gateways
93	•	VPN
Skill: Application Construction & Integration: *System Construction*		
133	•	Prepare Implementation Document
Knowledge: Management of IT Support Processes		
150	•	Operations Related Support Processes
151	•	Network Management Related Support Processes
152	•	Repository Administration
153	•	IT Security Management
157	•	Performance Measurement
Knowledge: Security Systems		
166	•	Encryption Concepts & Standards
167	•	Secure Applications
168	•	Personnel Identification & Authentication Concepts & Technology
Knowledge: Web Development		
198	•	Internet Security Technology
199	•	Internet Protocols
200	•	Internet Browsers
201	•	Internet Browser Plugins
202	•	Web Servers
Knowledge: Wireless m-Commerce		
169	•	Wireless Solutions Products
170	•	Wireless Manipulation Language
171	•	Wireless Application Protocol (WAP)
172	•	Cellular Radio Multiple Access Protocols
173	•	Geo-Position Sensing (GPS)
174	•	Voice over IP (VOIP)
Skill: Writing Tools		
213	•	Skill in the use of Desktop Publishing Packages
214	•	Skill in the use of Web Site Content Development Packages
Knowledge: Wireless m-Commerce		
169	•	Wireless Solutions Products
170	•	Wireless Manipulation Language
171	•	Wireless Application Protocol (WAP)
172	•	Cellular Radio Multiple Access Protocols
173	•	Geo-Position Sensing (GPS)
174	•	Voice over IP (VOIP)
Skill: Communicating		
230	•	Listening to Clients/Peers
231	•	Writing Clearly and Concisely

Role:	**Project Manager, Call Centre IVR Solutions**
Minimum years of related experience:	4 years Project Management *plus* 5 years IT
Minimum years of experience in this Role:	2 years

Responsibilities *could* include but are not limited to:

- Manages projects related to the design and integration of Call Centre IVR solutions;
- Manages the project during the development, design and operations startup by ensuring that resources are made available and that the application/system is developed and is fully operational within previously agreed time, cost and performance parameters;
- Formulates statements of management, scientific and business problems, establishes procedures for the development and design of significant, new or modified applications/systems to solve these problems, and obtains approval thereof;
- Defines and documents the objectives for the project;
- Provides guidance for budget, overall development and support of Voice System Solutions applications such as ACD (Automatic Call Distributors), CMS (Call Management Systems), Power Dialers, and Tele Dialers;
- Determines budgetary requirements, the composition, roles and responsibilities and terms of reference for the project team;
- Reports progress of the project on an ongoing basis to the client and at scheduled points in the life cycle to the sponsors of the project;
- Prepares plans, charts, tables and diagrams to assist in analyzing or displaying problems;
- Works with a variety of scientific, business or engineering tools requiring a sound knowledge of mathematics and management sciences;
- Provides leadership to direct the planning, organization and control of development projects from concept to the design of the solutions;
- Works with business partners and other technology areas to identify prospective business needs and develop strategies to match those needs;
- Understands the business and technology priorities and effectively communicates technology changes to the business;
- Accounts for the 24 hour by 7 day support of the business, in so far as the design and maintenance of systems are concerned;
- Holds regular one-on-one meetings with staff for feedback, coaching, career development and performance status;
- Conducts mid-year and year-end performance reviews with each team member; and
- Project sign-off.

Competencies:
See definitions in attached Competency Glossary – no other interpretations will be considered

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Required & Demonstrable Knowledge: Familiarity with and understanding of a subject
Required & Demonstrable Skill: Expertise to perform a specific activity or function

	Knowledge: Electronic Service Delivery (ESD)
1	• Electronic Service Delivery (ESD) Initiative
2	• The World Wide Web
3	• Internet, Intranets, Extranets
4	• Internet Security
5	• Internet Service Delivery Principles and Theories
	Skill: Project Management
15	• Planning a Project
16	• Organizing a Project
17	• Controlling a Project

18	•	Leading a Project Team
19	•	Quality Management
20	•	Risk Management
23	•	Project Management Packages
Skill: Financial Management		
24	•	Cost Analysis
25	•	Budget Preparation
26	•	Budget Control
Skill: Opportunity Evaluation		
27	•	Conduct Opportunity Evaluation
28	•	Write Project Proposal
Knowledge: Business Planning		
29	•	Define Business
30	•	Establish a Vision for the Business
31	•	Perform an Environmental Scan
32	•	Develop Strategic Direction
33	•	Prepare Business Plans
34	•	Communicate/Market Business Plans
35	•	Implement Business Plans
Knowledge: Strategic Planning		
43	•	Gather and Consolidate Relevant Data/Information
44	•	Perform Environmental Scans
45	•	Develop and Write a Strategic Plan
46	•	Build Consensus on Strategy and Direction
Knowledge: Policy Development		
51	•	Identify Policy Need/Concerns
52	•	Perform Comparative Analysis of Policies
53	•	Develop Policies
54	•	Validate/Adjust Policies
Knowledge: Standards Development		
59	•	Identify Standards Need/Concerns
60	•	Perform Comparative Analysis of Standards
61	•	Develop Standards
62	•	Validate/Adjust Standards
Knowledge: Systems Hardware & Software		
67	•	Mainframes/Minis/Micros
68	•	Database Management Systems
Knowledge: Architecture		
69	•	Architecture Principles
Knowledge: Application and/or System Software Construction		
82	•	Software Engineering Principles
83	•	System Development Life Cycle (SDLC)
84	•	Modelling
85	•	Methodologies
86	•	Documentation
Knowledge: Integration		
87	•	System Integration Principles
88	•	Testing/Validation
Knowledge: Networks		
89	•	Telecommunications Principles
90	•	WAN
91	•	LAN
92	•	Gateways
93	•	VPN
Knowledge: Management of IT Support Processes		

150	• Operations Related Support Processes
151	• Network Management Related Support Processes
152	• Repository Administration
153	• IT Security Management
154	• Change Management
155	• Release Management
156	• Problem Management
157	• Performance Measurement
158	• Configuration Management
159	• Capacity Planning
Knowledge: Security Systems	
166	• Encryption Concepts & Standards
167	• Secure Applications
168	• Personnel Identification & Authentication Concepts & Technology
Knowledge: Call Centre	
175	• Voice Messaging
176	• Fax Messaging
177	• Interactive Voice Response (IVR) Application Systems
178	• Automated Voice Recognition (AVR) Application Systems
179	• Automated Call Distribution (ACD)
180	• Service Request Management Systems
181	• Equipment, Networks, Services
182	• Operations
183	• Analyze Telephony Service Needs
184	• Recommend Telephony Plan of Action
Skill: Call Centre	
185	• Automated Call Distribution (ACD)
186	• Service Request Management Systems
187	• Equipment, Networks, Services
188	• Operations
189	• Analyze Telephony Service Needs
190	• Recommend Telephony Plan of Action

Role:	**Call Centre Specialist**
Minimum years of related experience:	5 years IT including 2 years Internet WEB
Minimum years of experience in this specific Role:	2 years

Responsibilities *could* include but are not limited to:

- Performs design reviews, and acts as a mentor for project team members;
- Researches, evaluates and recommends technologies for projects;
- Performs current state assessment and future design of data architecture in relation to Call Centre Solutions;
- Conducts feasibility and trade-off studies;
- Researches and analyzes different products related to Call Centre projects;
- Develops strategy as it relates to data capture and deployment of manual methods, ensuring standards are created and adhered to;
- Provides expert advice on and/or develops Interactive Voice Response (IVR) Application systems that permit callers to obtain information or enter transactions using the telephone keypad;
- Provides expert advice on and/or develops service request management application systems;
- Provides expert advice on and/or develops and designs computer enabled Call Centres that permit service agents to efficiently and effectively respond to client service requests received by telephone and other electronic media;
- Consults with Project Managers on Call Centre issues related to the project;
- Analyzes information requirements for divisions within the corporate data repositories;
- Applies existing skills in Call Centre functions, applications and operations to support the development of state-of-the art technology solutions within a variety of industry sectors;
- Participates in the design and planning of the infrastructure required to support complex distributed applications; i.e. work on Call Centre assessments, planning, designs;
- Conducts research, supports the development of project proposals, employs data gathering techniques and analysis to assist in presenting recommendations;
- Prepares architecture reviews, data flow diagrams, and system flowcharts;
- Develops, designs and maintains business applications using approved methodologies and programming languages;
- Develops Call Centre architecture and designs Call Centre solutions;
- Manages maintenance and development projects by utilizing a systems lifecycle development methodology;
- Understands and analyzes environmental and security specifications for assessing the effectiveness of existing architecture;
- Assists in keeping team members informed of project status and demonstrates progressive development of technical, industry and supervisory skills;
- Organizes and maintains checklists, procedure schedules and key project deliverables;
- Monitors the quality and consistency of IT Process Methodology;
- Provides technical assistance in the delivery of comprehensive decision support architectural specifications;
- Provides updates and enhancements to the Decision Support Strategic Plan; and
- Demonstrates system life cycle working with technologies such as: Automatic Call Distributors (ACD), Computer Telephone Integration (CTI), Integrated Voice Response units (IVR), Teledialers, PBX, Call Management packages (Siebel, Clarify, Genesys, Lucent, Scopus), LAN/WAN, Web-enabled call centre, customer support, Sales Force Automation, Workforce Management (Remedy, Aurora, TCS) and/or Voice Long Distance Services.

Competencies:
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55	•	Identify Policy Need/Concerns
56	•	Perform Comparative Analysis of Policies
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58	•	Validate/Adjust Policies
Skill: Standards Development		
63	•	Identify Standards Need/Concerns
64	•	Perform Comparative Analysis of Standards
65	•	Develop Standards
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67	•	Mainframes/Minis/Micros
68	•	Database Management Systems
Knowledge: Architecture		
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Skill: Architecture		
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84	•	Modelling
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86	•	Documentation
Knowledge: Integration		
87	•	System Integration Principles
88	•	Testing/Validation
Knowledge: Networks		
89	•	Telecommunications Principles
90	•	WAN
91	•	LAN
92	•	Gateways
93	•	VPN
Skill: Network Integration		
94	•	Develop Plan

95	• Conduct Capacity Planning
96	• Design Network
97	• Perform Cost/Benefit Analysis
Skill: Hardware Integration	
100	• Develop Plan
101	• Conduct Capacity Planning
102	• Define Hardware Platform
103	• Perform Cost/Benefit Analysis
Skill: Software Integration	
107	• Develop Plan
108	• Conduct Capacity Planning
109	• Define System/Infrastructure
110	• Perform Cost/Benefit Analysis
Knowledge: Management of IT Support Processes	
150	• Operations Related Support Processes
151	• Network Management Related Support Processes
152	• Repository Administration
153	• IT Security Management
154	• Change Management
155	• Release Management
156	• Problem Management
157	• Performance Measurement
158	• Configuration Management
159	• Capacity Planning
Skill: Management of IT Support Processes	
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161	• Define Change Management Procedures
162	• Define Release Management Procedures
163	• Define Problem Management Procedures
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168	• Personnel Identification & Authentication Concepts & Technology
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Knowledge: Web Development	
191	• Web Site Design

192	• Web Site Authoring Tools
198	• Internet Security Technology
199	• Internet Protocols
200	• Internet Browsers
201	• Internet Browser Plugins
202	• Web Servers
Skill: Web Development	
203	• Web Site design
204	• Web Site Authoring Tools
205	• Web Site Graphics
206	• Website Multimedia
207	• Usability
208	• Web Site Databases
209	• Internet Security Technology Implementation

Role:	**IVR Integration Specialist**
Minimum years of related experience:	5 years IT including 2 years Internet WEB
Minimum years of experience in this specific Role:	2 years

Responsibilities *could* include but are not limited to:

- Develops technical architectures, frameworks and strategies for major application requirements in the corporate directory environment;
- Defines user requirements and assesses technology options for Call Centres;
- Identifies the policies and requirements that drive a particular solution;
- Analyzes and evaluates alternative technology solutions to resolve business issues;
- Designs e-business solutions with consideration for integration with existing business applications;
- Ensures the integration of all aspects of technology solutions using Interactive Voice Response (IVR) System Management and Intersystem Messaging Gateway (IMG) standards;
- Manages Telco digital line CPE configuration for T1, ISDN, Frame Relay Technologies;
- Provides advise on IVR software upgrade, IVR content and IVR configuration;
- Assists in IVR prototype development and IVR product quality assurance;
- Assembles, configures, troubleshoots and optimizes data communication products including switches, hubs and routers using knowledge of Telco's 800/900 standard products and PBX phone systems;
- Monitors industry trends to ensure that solutions fit with government and industry directions for technology;
- Analyzes functional requirements to identify information procedures and decision flow;
- Evaluates existing procedures and methods, identifies and documents database content, structure, and application sub-systems and develops data dictionaries;
- Defines and documents interfaces of manual to automated operations within application sub-systems, to external systems and between new and existing systems;
- Defines input/output sources, including a detailed plan for technical design phase and obtains approval of the system proposal; and
- Identifies and documents system specific standards relating to programming documentation and testing covering program libraries, data dictionaries, naming conventions etc.

Competencies:
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57	• Develop Policies
58	• Validate/Adjust Policies
Skill: Standards Development	
63	• Identify Standards Need/Concerns
64	• Perform Comparative Analysis of Standards
65	• Develop Standards
66	• Validate/Adjust Standards

Knowledge: Systems Hardware & Software		
67	•	Mainframes/Minis/Micros
68	•	Database Management Systems
Knowledge: Architecture		
70	•	Business Architecture
71	•	Work Architecture
72	•	Information Architecture
73	•	Applications Architecture
Skill: Architecture		
79	•	Technology Architecture
Knowledge: Application and/or System Software Construction		
82	•	Software Engineering Principles
83	•	System Development Life Cycle (SDLC)
84	•	Modelling
85	•	Methodologies
86	•	Documentation
Knowledge: Integration		
87	•	System Integration Principles
88	•	Testing/Validation
Knowledge: Networks		
89	•	Telecommunications Principles
90	•	WAN
91	•	LAN
92	•	Gateways
93	•	VPN
Skill: Network Integration		
94	•	Develop Plan
95	•	Conduct Capacity Planning
96	•	Design Network
97	•	Perform Cost/Benefit Analysis
Skill: Hardware Integration		
100	•	Develop Plan
101	•	Conduct Capacity Planning
102	•	Define Hardware Platform
103	•	Perform Cost/Benefit Analysis
Skill: Software Integration		
107	•	Develop Plan
108	•	Conduct Capacity Planning
109	•	Define System/Infrastructure
110	•	Perform Cost/Benefit Analysis
Knowledge: Management of IT Support Processes		
150	•	Operations Related Support Processes
151	•	Network Management Related Support Processes
152	•	Repository Administration
153	•	IT Security Management
154	•	Change Management
155	•	Release Management
156	•	Problem Management
157	•	Performance Measurement
158	•	Configuration Management
159	•	Capacity Planning
Skill: Management of IT Support Processes		
160	•	Define Configuration Management Procedures
161	•	Define Change Management Procedures

162	•	Define Release Management Procedures
163	•	Define Problem Management Procedures
165	•	Define Documentation Maintenance Procedures

Knowledge: Security Systems		
166	•	Encryption Concepts & Standards
167	•	Secure Applications
168	•	Personnel Identification & Authentication Concepts & Technology

Knowledge: Call Centre Solutions		
174	•	Voice over IP
175	•	Voice Messaging
176	•	Fax Messaging
177	•	Interactive Voice Response (IVR) Application Systems
178	•	Automated Voice Recognition (AVR) Application Systems
179	•	Automated Call Distribution (ACD)
180	•	Service Request Management Systems
181	•	Equipment, Networks, Services
182	•	Operations
183	•	Analyze Telephony Service Needs
184	•	Recommend Telephony Plan of Action

Skills: Call Centre		
185	•	Automated Call Distribution (ACD)
186	•	Service Request Management Systems
187	•	Equipment, Networks, Services
188	•	Operations
189	•	Analyze Telephony Service Needs
190	•	Recommend Telephony Plan of Action

Knowledge: Web Development		
191	•	Web Site Design
192	•	Web Site Authoring Tools
198	•	Internet Security Technology
199	•	Internet Protocols
200	•	Internet Browsers
201	•	Internet Browser Plugins
202	•	Web Servers

Skill: Web Development		
203	•	Web Site design
204	•	Web Site Authoring Tools
205	•	Web Site Graphics
206	•	Website Multimedia
207	•	Usability
208	•	Web Site Databases
209	•	Internet Security Technology Implementation

Role:	**IVR Programmer/Analyst**
Minimum years of related experience:	5 years IT including 2 years Internet WEB
Minimum years of experience in this specific Role:	2 years

Responsibilities could include but are not limited to:

- Develops security policies, standards, guidelines and procedures for call centre applications;
- Reviews existing security policies, standards, guidelines and procedures and provides advice as to their appropriateness and effectiveness;
- Consults with Product Line Management and customers/clients;
- Analyses customer security requirements;
- Performs threat/risk assessment and mitigation strategies;
- Administers daily operations of both the local and remote PBX systems, cable plants and related servers/gateways;
- Provides advise on IVR software upgrade, IVR content and IVR configuration;
- Assists in managing a unified voice/data network service and the associated equipment;
- Maintains the telecommunications systems hardware/software and coordinates repairs with PBX vendor;
- Interacts with cross-functional teams within IT to fulfill basic and complex telecommunications requests for moves, additions, and changes;
- Conducts compliance audits of IVR operations, application systems and infrastructure;
- Conducts reviews of backup and recovery plans;
- Investigates security incidents and reports causes and related weaknesses and recommends remedies;
- Designs the security framework and the security components of IT & Internet/Intranet infrastructure required to protect assets and to support application systems;
- Provides advice on the security aspects of application systems under development;
- Ensures the integration of all aspects of technology solutions for IVR systems;
- Documents operational procedures for PBX system and network configurations; and
- Maintains associated inventory of the PBX and network systems.

Competencies:
See definitions in attached Competency Glossary – no other interpretations will be considered

(NOTE: THE ID NUMBERS TO THE LEFT OF THE REQUIRED COMPETENCIES LISTED BELOW CORRESPOND TO THE GLOSSARY COMPETENCY DEFINITION ID NUMBERS)

Required & Demonstrable Knowledge: Familiarity with and understanding of a subject
Required & Demonstrable Skill: Expertise to perform a specific activity or function

Knowledge: Electronic Service Delivery (ESD)		
1	•	Electronic Service Delivery (ESD) Initiative
2	•	The World Wide Web
3	•	Internet, Intranets, Extranets
4	•	Internet Security
5	•	Internet Service Delivery Principles and Theories
Skill: Project Management		
20	•	Risk Management
Skill: Strategic Planning		
47	•	Gather and Consolidate Relevant Data/Information
48	•	Perform Environmental Scans
49	•	Develop and Write a Strategic Plan
50	•	Build Consensus on Strategy and Direction
Skill: Policy Development		
55	•	Identify Policy Need/Concerns
56	•	Perform Comparative Analysis of Policies
57	•	Develop Policies
58	•	Validate/Adjust Policies
Skill: Standards Development		

63	•	Identify Standards Need/Concerns
64	•	Perform Comparative Analysis of Standards
65	•	Develop Standards
66	•	Validate/Adjust Standards
Knowledge: Systems Hardware & Software		
67	•	Mainframes/Minis/Micros
68	•	Database Management Systems
Knowledge: Architecture		
70	•	Business Architecture
71	•	Work Architecture
72	•	Information Architecture
73	•	Applications Architecture
74	•	Technology Architecture
Knowledge: Application and/or System Software Construction		
82	•	Software Engineering Principles
83	•	System Development Life Cycle (SDLC)
84	•	Modelling
85	•	Methodologies
86	•	Documentation
Knowledge: Integration		
87	•	System Integration Principles
88	•	Testing/Validation
Knowledge: Management of IT Support Processes		
150	•	Operations Related Support Processes
151	•	Network Management Related Support Processes
152	•	Repository Administration
153	•	IT Security Management
154	•	Change Management
155	•	Release Management
156	•	Problem Management
Skill: Management of IT Support Processes		
164	•	Define Security Management Procedures
Knowledge: Security Systems		
166	•	Encryption Concepts & Standards
167	•	Secure Applications
168	•	Personnel Identification & Authentication Concepts & Technology
Knowledge: Call Centre Solutions		
174	•	Voice over IP (VOIP)
175	•	Voice Messaging
176	•	Fax Messaging
177	•	Interactive Voice Response (IVR) Application Systems
178	•	Automated Voice Recognition (AVR) Application Systems
179	•	Automated Call Distribution (ACD)
180	•	Service Request Management Systems
181	•	Equipment, Networks, Services
182	•	Operations
183	•	Analyze Telephony Service Needs
184	•	Recommend Telephony Plan of Action
Skills: Call Centre		
185	•	Automated Call Distribution (ACD)
186	•	Service Request Management Systems
187	•	Equipment, Networks, Services
188	•	Operations
189	•	Analyze Telephony Service Needs

190	• Recommend Telephony Plan of Action
Knowledge: e-Commerce Development	
214	• E-Commerce Security Issues

Role:	**IVR-Web Developer**
Minimum years of related experience:	5 years IT including 2 years Internet WEB
Minimum years of experience in this specific Role:	2 years

Responsibilities could include but are not limited to:

- Develops and prepares diagrammatic plans for web-based service delivery for the IVR systems over the internet;
- Analyzes the problems identified by systems analysts/designers in terms of style and extent of information to be transferred across the internet;
- Develops outage management solutions using WAS (Web Application Server) and IVR (Interactive Voice Response) interface;
- Selects and uses the best available web development tools for linking the internet based client to the departmental backend information delivery programs and databases and designs high-usability web pages;
- Verifies accuracy and completeness of programs by preparing sample data, and testing by means of system acceptance test runs made by operating personnel;
- Corrects program errors by revising instructions or altering the sequence of operations; and
- Tests instructions, and assembles specifications, flow charts, diagrams, layouts, programming and operating instructions to document applications for later modification or references.

Competencies:
See definitions in attached Competency Glossary – no other interpretations will be considered

(NOTE: THE ID NUMBERS TO THE LEFT OF THE REQUIRED COMPETENCIES LISTED BELOW CORRESPOND TO THE GLOSSARY COMPETENCY DEFINITION ID NUMBERS)

Required & Demonstrable Knowledge: Familiarity with and understanding of a subject
Required & Demonstrable Skill: Expertise to perform a specific activity or function

Knowledge: Electronic Service Delivery (ESD)		
1	•	Electronic Service Delivery (ESD) Initiative
2	•	The World Wide Web
3	•	Internet, Intranets, Extranets
4	•	Internet Security
5	•	Internet Service Delivery Principles and Theories
Knowledge: Systems Hardware & Software		
67	•	Mainframes/Minis/Micros
68	•	Database Management Systems
Knowledge: Architecture		
73	•	Applications Architecture
74	•	Technology Architecture
Knowledge: Application and/or System Software Construction		
82	•	Software Engineering Principles
83	•	System Development Life Cycle (SDLC)
84	•	Modelling
85	•	Methodologies
86	•	Documentation
Knowledge: Integration		
87	•	System Integration Principles
88	•	Testing/Validation
Knowledge: Networks		
89	•	Telecommunications Principles

184	• Recommend Telephony Plan of Action
Skills: Call Centre	
185	• Automated Call Distribution (ACD)
186	• Service Request Management Systems
187	• Equipment, Networks, Services
188	• Operations
189	• Analyze Telephony Service Needs
190	• Recommend Telephony Plan of Action
Knowledge: Security Systems	
166	• Encryption Concepts & Standards
167	• Secure Applications
168	• Personnel Identification & Authentication Concepts & Technology
Knowledge: Web Development	
191	• Web Site Design
192	• Web Site Authoring Tools
198	• Internet Security Technology
199	• Internet Protocols
200	• Internet Browsers
201	• Internet Browser Plugins
202	• Web Servers
Skill: Web Development	
203	• Web Site design
204	• Web Site Authoring Tools
205	• Web Site Graphics
206	• Website Multimedia
207	• Usability
208	• Web Site Databases
209	• Internet Security Technology Implementation

Role:	**IVR User Interface Designer**
Minimum years of related experience:	5 years IT including 2 years Internet WEB
Minimum years of experience in this specific Role:	2 years

Responsibilities _could_ include but are not limited to:

- Develops and documents detailed statements of requirements for the proposed IVR system;
- Works with the Product Development Team on the User Interface;
- Facilitates Application Design Workshops with the marketing department, and develops functional specifications for applications;
- Provides guidance and cross-training to the development team leaders, and works with documentation specialists to design online help facilities;
- Analyzes functional requirements to identify information, procedures and decision flow;
- Evaluates existing procedures and methods, identifies and documents database content, structure, and application sub-systems, and develops data dictionaries;
- Defines and documents interfaces of manual to automated operations within sub-systems, to external systems and between new and existing systems;
- Defines input/output sources, including a detailed plan for technical design phase, and obtains approval of the system proposal;
- Designs and documents, in detail, all system components, their interfaces and operational environments;
- Designs data structures and files, sub-systems and modules, programs, batch, online, and production monitoring procedures, testing strategy and systems;
- Documents system design, concepts and facilities, presents and obtains approval of detailed system design; and
- Produces an operational system including all forms, manuals, programs, data files and procedures.

Competencies:
See definitions in attached Competency Glossary – no other interpretations will be considered

(NOTE: THE ID NUMBERS TO THE LEFT OF THE REQUIRED COMPETENCIES LISTED BELOW CORRESPOND TO THE GLOSSARY COMPETENCY DEFINITION ID NUMBERS)

Required & Demonstrable Knowledge: Familiarity with and understanding of a subject
Required & Demonstrable Skill: Expertise to perform a specific activity or function

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	Knowledge: Electronic Service Delivery (ESD)
1	• Electronic Service Delivery (ESD) Initiative
2	• The World Wide Web
3	• Internet, Intranets, Extranets
4	• Internet Security
5	• Internet Service Delivery Principles and Theories

	Skill: Policy Development
55	• Identify Policy Need/Concerns
56	• Perform Comparative Analysis of Policies
57	• Develop Policies
58	• Validate/Adjust Policies

	Skill: Standards Development
63	• Identify Standards Need/Concerns
64	• Perform Comparative Analysis of Standards
65	• Develop Standards
66	• Validate/Adjust Standards

	Knowledge: Systems Hardware & Software
67	• Mainframes/Minis/Micros
68	• Database Management Systems

Knowledge: Architecture

72	•	Information Architecture
73	•	Applications Architecture
74	•	Technology Architecture

Skill: Database Administration

80	•	Database Backup and Restore
81	•	Database Replication

Knowledge: Application and/or System Software Construction

82	•	Software Engineering Principles
83	•	System Development Life Cycle (SDLC)
84	•	Modelling
85	•	Methodologies
86	•	Documentation

Knowledge: Integration

87	•	System Integration Principles
88	•	Testing/Validation

Knowledge: Networks

89	•	Telecommunications Principles
90	•	WAN
91	•	LAN
92	•	Gateways
93	•	VPN

Skill: Application Construction & Integration: *System Construction*

129	•	Define Physical Data Model
131	•	Program Physical Data Model
134	•	Prepare Installation

Knowledge: Management of IT Support Processes

150	•	Operations Related Support Processes
151	•	Network Management Related Support Processes
152	•	Repository Administration
153	•	IT Security Management
154	•	Change Management
155	•	Release Management
156	•	Problem Management
157	•	Performance Measurement
158	•	Configuration Management
159	•	Capacity Planning

Knowledge: Security Systems

166	•	Encryption Concepts & Standards
167	•	Secure Applications
168	•	Personnel Identification & Authentication Concepts & Technology

Knowledge: Call Centre Solutions

174	•	Voice over IP (VOIP)
175	•	Voice Messaging
176	•	Fax Messaging
177	•	Interactive Voice Response (IVR) Application Systems
178	•	Automated Voice Recognition (AVR) Application Systems
179	•	Automated Call Distribution (ACD)
180	•	Service Request Management Systems
181	•	Equipment, Networks, Services
182	•	Operations

183	•	Analyze Telephony Service Needs
184	•	Recommend Telephony Plan of Action
Skill: Call Centre		
185	•	Automated Call Distribution (ACD)
186	•	Service Request Management Systems
187	•	Equipment, Networks, Services
188	•	Operations
189	•	Analyze Telephony Service Needs
190	•	Recommend Telephony Plan of Action
Knowledge: Web Development		
191	•	Web Site Design
192	•	Web Site Authoring Tools
198	•	Internet Security Technology
199	•	Internet Protocols
200	•	Internet Browsers
201	•	Internet Browser Plugins
202	•	Web Servers
Skill: Web Development		
203	•	Web Site design
204	•	Web Site Authoring Tools
205	•	Web Site Graphics
206	•	Website Multimedia
207	•	Usability
208	•	Web Site Databases
209	•	Internet Security Technology Implementation

Role:	**Technical Writer IVR**
Minimum years of related experience:	5 years IT including 2 years of Internet
Minimum years of experience in this specific Role:	2 years

Responsibilities *could* include but are not limited to:

- Prepares documentation including help text, user manuals, technical documentation for IVR projects;
- Reviews documentation standards and existing project documentation;
- Determines documentation requirements and ensures they are met;
- Gathers information concerning the features and functions provided by the developers;
- Surveys the clients to determine their requirements for the documents/manuals and prepares a statement of purpose and scope for each documents/manuals;
- Develops table of contents for each document/manual and writes or edits the required content;
- Investigates the accuracy of the information collected by making direct use of the material being documented;
- Prepares or co-ordinates the preparation of any required illustrations and diagrams;
- Designs the layout of the documents/manuals; and
- Uses word-processing, desktop publishing and graphics software packages to produce final camera-ready copy.

Competencies:
See definitions in attached Competency Glossary – no other interpretations will be considered

(NOTE: THE ID NUMBERS TO THE LEFT OF THE REQUIRED COMPETENCIES LISTED BELOW CORRESPOND TO THE GLOSSARY COMPETENCY DEFINITION ID NUMBERS)

Required & Demonstrable Knowledge: Familiarity with and understanding of a subject
Required & Demonstrable Skill: Expertise to perform a specific activity or function

Knowledge: Electronic Service Delivery (ESD)	
1	• Electronic Service Delivery (ESD) Initiative
2	• The World Wide Web
3	• Internet, Intranets, Extranets
4	• Internet Security
5	• Internet Service Delivery Principles and Theories
Knowledge: Systems Hardware & Software	
67	• Mainframes/Minis/Micros
68	• Database Management Systems
Knowledge: Application and/or System Software Construction	
82	• Software Engineering Principles
83	• System Development Life Cycle (SDLC)
84	• Modelling
85	• Methodologies
86	• Documentation
Knowledge: Networks	
89	• Telecommunications Principles
90	• WAN
91	• LAN
92	• Gateways
93	• VPN
Skill: Application Construction & Integration: *System Construction*	
133	• Prepare Implementation Document
Knowledge: Management of IT Support Processes	
150	• Operations Related Support Processes
151	• Network Management Related Support Processes
152	• Repository Administration

153	• IT Security Management
157	• Performance Measurement
Knowledge: Call Centre Solutions	
174	• Voice over IP (VOIP)
175	• Voice Messaging
176	• Fax Messaging
177	• Interactive Voice Response (IVR) Application Systems
178	• Automated Voice Recognition (AVR) Application Systems
179	• Automated Call Distribution (ACD)
180	• Service Request Management Systems
181	• Equipment, Networks, Services
Skill: Writing Tools	
213	• Skill in the use of Desktop Publishing Packages
214	• Skill in the use of Web Site Content Development Packages
Skill: Communicating	
230	• Listening to Clients/Peers
231	• Writing Clearly and Concisely

APPENDIX N

GLOSSARY

GLOSSARY
(no other competency interpretations will be considered)
Required & Demonstrable Knowledge: *Familiarity with and understanding of a subject* Required & Demonstrable Skill: *Ability to perform a specific activity or function*

ID	Competency Description		Competency Definition
1	Knowledge: Internet Service Delivery	Ontario Government's Electronic Service Delivery (ESD) Initiative	• Information concerning the business, and some of the technical aspects of the Ontario Government's ESD initiative can be obtained by visiting the Ontario Government's website at: http://www.cio.gov.on.ca/mbs/cio • It is expected that all vendors will have obtained and understood the most up-to-date information available on the ESD initiative before beginning any assignment.
2	Knowledge: Internet Service Delivery	The World Wide Web	The World Wide Web (WWW) refers to the multi-media client/server information access system that provides access to the universe of network–accessible information on the Internet.
3	Knowledge: Internet Service Delivery	Internet, Intranets, Extranets	The Internet is the global open network that is implemented according to the Internet Engineering Task Force (IETF) standards. Intranet refers to a physical network domain that is segregated from the Internet by some means such as a gateway or firewall. Extranet refers to a virtual network that uses the Internet to transport its traffic.
4	Knowledge: Internet Service Delivery	Internet Security	Internet Security refers to the measures and technology used to protect the integrity and privacy of information transported and to ensure the continuity of service provided over the Internet.
5	Knowledge: Internet Service Delivery	Internet Service Delivery Principles and Theories	The most current principles and theories with respect to the core transformational process of moving from a traditional service delivery system to an internet based model.
6	Skill: Internet Service Delivery	Establishing and Implementing Principles of Leadership	Providing expert advice on how to establish an organizational culture consisting of people, from the top down, who think and act in terms of ESD service delivery, use e-business tools and are accountable in measurable ways.
7	Skill: Internet Service Delivery	Establishing and Implementing Governance & Operations Framework	Governance defines an organization's structures, roles, responsibilities and accountabilities as well as the authority that supports decision making in an organization; it defines the framework and the tools, not the processes.

GLOSSARY

(no other competency interpretations will be considered)

Required & Demonstrable Knowledge: Familiarity with and understanding of a subject
Required & Demonstrable Skill: Ability to perform a specific activity or function

ID	Competency Description		Competency Definition
8	Skill: Internet Service Delivery	Establishing and Implementing Principles of Operational Competencies	Developing principles to guide the establishment and implementation of the operational competencies that are key to the ESD service delivery goals, they encompass: • Developing/acquiring staff with experience in managing multiple relationships • Rapid implementation change across an organization • Developing/acquiring the skills needed to identify and prioritize service delivery opportunities
9	Skill: Internet Service Delivery	Establishing and Implementing Principles of Technology	Developing and implementing standards across an organization: • Ensuring that the infrastructure (network hardware, software, security etc.) can be scaled upward to meet new and unforeseen requirements • Developing and implementing a strategy across an organization that is driven by service delivery and business content/requirements • Establishing a climate where human resources are aligned with ESD goals
10	Skill: Internet Service Delivery	Establishing and Implementing Portals as Infomediaries	An *Infomediary* provides content aggregation of information that adds value to internet service delivery. A *Portal* is a gateway for a web site and serves as a major starting point and anchor site for users; typical services provided by the portal include a directory of and links to associated web sites and a description of their content.
11	Skill: Internet Service Delivery	Business Process Transformation	The provision of expert advice on the key initiatives that enable enterprises to deploy high-impact web-enabled business processes that are focused, accountable and measurable. In particular: principles of leadership; governance; principles of operational competencies, and principles of technology. Includes the identification of candidate business processes for re-design; prototyping of potential solutions; provision of tradeoff information and course of action recommendations.
12	Knowledge: Project Administration	General Knowledge & Terminology	General knowledge of electronic delivery systems and their associated technical and business terminology.
13	Skill: Project Administration	Office Automation Suites	Working level expertise with office automation suites consisting of: • Word processor • Spreadsheet • Electronic mail • Presentation software • Voice mail • Scheduling

GLOSSARY

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Required & Demonstrable Knowledge: Familiarity with and understanding of a subject
Required & Demonstrable Skill: Ability to perform a specific activity or function

ID	Competency Description		Competency Definition
14	Skill: Project Administration	Project Libraries	Skill in establishing and maintaining project libraries (security & access control, files, records, logs, version control, change management)
15	Skill: Project Management	Planning a Project	Define the deliverables, estimate effort and cost, situate the effort and cost within the context of the project and distribute assignments to team members.
16	Skill: Project Management	Organizing a Project	This function deals with the operation of the project team in its environment. It consists of putting in place a highly productive environment in which each team member knows exactly what to do, when to do it, and how to do it.
17	Skill: Project Management	Controlling a Project	The detection of variances from the project plan in time to apply corrective measures resulting in the prevention of problems. It applies to both the quality and quantity of deliverables.
18	Skill: Project Management	Leading a Project Team	This function concerns the interpersonal relationships of team members. It consists of the project manager eliciting the best possible performance from project personnel. Critical factors are primarily human: motivation, team spirit, leadership, delegation.
19	Skill: Project Management	Quality Management	The management of Quality Assurance (planned and systematic actions necessary to provide adequate confidence that a service or product will serve satisfactorily for its intended and specific purpose) and Quality Control (development of a comprehensive program which includes the process of identifying objectives and strategy, of client interfacing and of organizing and coordinating planned and systematic controls for maintaining established standards; this in turn involves measuring and evaluating performance to the standards, reporting results and taking appropriate action to deal with deviations).
20	Skill: Project Management	Risk Management	Identifying, analyzing and responding to risk factors throughout the life of a project.
21	Skill: Project Management	Managing Concurrent Multiple Projects	Ability to manage several Senior Project Managers and, through them, their work; each Senior Project Manager being responsible for a clearly defined and discrete project.
22	Skill: Project Management	Managing Concurrent Multiple Sub-projects	Ability to manage several Project Managers and, through them, their work; each Project Manager being responsible for a clearly defined and discrete sub-project.
23	Skill: Project Management	Project Management Packages	Skill in the use project management packages that aid in the planning, tracking and recording of projects.
24	Skill: Financial Management	Cost Analysis	Analyzing the cost of goods and services in terms of the product life, maintenance, training, operation etc.

GLOSSARY

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Required & Demonstrable Knowledge: Familiarity with and understanding of a subject
Required & Demonstrable Skill: Ability to perform a specific activity or function

ID	Competency Description		Competency Definition
25	Skill: Financial Management	Budget Preparation	Preparation of a detailed budget containing expenditure and forecast information on some or all of the following: hardware and software purchase, lease and maintenance; facilities management; professional services; project and cyclical capital; and, other operating costs (i.e. supplies, training, travel, printing and publications, etc.)
26	Skill: Financial Management	Budget Control	Monitoring actual expenditures versus forecast on a regular basis; taking corrective action when necessary.
27	Skill: Opportunity Evaluation	Conduct Opportunity Evaluation	Determine whether the next step in system construction (a preliminary analysis) is appropriate by measuring the perceived need for a system against the business strategy of the organization (mission, objectives, critical success factors).
28	Skill: Opportunity Evaluation	Write Project Proposal	Write a proposal to management that clearly states why a preliminary analysis should be undertaken. The proposal should address the potential benefit to the organization and should be based on the organization's business strategy; it should also include cost and time estimates for performing a preliminary analysis.
29	Knowledge: Business Planning	Define Business	Identify the key activities that an organization performs and the direction in which it wishes to move.
30	Knowledge: Business Planning	Establish a Vision for the Business	Develop a brief but compelling document depicting what a business will be like in the future, generally after change has been accomplished. It includes narrative and pictorial vision statements, a summary of benefits and success metrics; it may also include a mission statement, objectives, and critical success factors.
31	Knowledge: Business Planning	Perform an Environmental Scan	Review/scan the business/technological/government policy environments in terms of trends that may impact the Department's direction through such means as literature reviews, interviews with clients, industry directions, surveys and questionnaires. The scan should result in a strategic document identifying changing conditions, both internal and external to the Department, which could impact the way the Department must operate.
32	Knowledge: Business Planning	Develop Strategic Direction	Identify the key elements required to be able to achieve the business vision.
33	Knowledge: Business Planning	Prepare Business Plans	Develop detailed plans (specific activities and related completion schedule) that will allow pursuit of the strategic direction, leading to achievement of the business vision.

GLOSSARY

(no other competency interpretations will be considered)

Required & Demonstrable Knowledge: Familiarity with and understanding of a subject
Required & Demonstrable Skill: Ability to perform a specific activity or function

ID	Competency Description		Competency Definition
34	Knowledge: Business Planning	Communicate/Market Business Plans	Inform all interested parties (employees, clients, suppliers etc.) of the activities being undertaken, what impact the business plans will have on them, and the advantages of the direction being taken.
35	Knowledge: Business Planning	Implement Business Plans	Undertake the specific set of activities required to implement the business plans, as per an established schedule; take corrective action if and when required.
36	Skill: Business Planning	Define Business	Identify the key activities that an organization performs and the direction in which it wishes to move.
37	Skill: Business Planning	Establish a Vision for the Business	Develop a brief but compelling document depicting what a business will be like in the future, generally after change has been accomplished. It includes narrative and pictorial vision statements, a summary of benefits and success metrics; it may also include a mission statement, objectives, and critical success factors.
38	Skill: Business Planning	Perform an Environmental Scan	Review/scan the business/technological/government policy environments in terms of trends that may impact the Department's direction through such means as literature reviews, interviews with clients, industry directions, surveys and questionnaires. The scan should result in a strategic document identifying changing conditions, both internal and external to the Department, which could impact the way the Department must operate.
39	Skill: Business Planning	Develop Strategic Direction	Identify the key elements required to be able to achieve the business vision.
40	Skill: Business Planning	Prepare Business Plans	Develop detailed plans (specific activities and related completion schedule) that will allow pursuit of the strategic direction, leading to achievement of the business vision.
41	Skill: Business Planning	Communicate/Market Business Plans	Inform all interested parties (employees, clients, suppliers etc.) of the activities being undertaken, what impact the business plans will have on them, and the advantages of the direction being taken.
42	Skill: Business Planning	Implement Business Plans	Undertake the specific set of activities required to implement the business plans, as per an established schedule; take corrective action if and when required.
43	Knowledge: Strategic Planning	Gather and Consolidate Relevant Data/Information	Researching, organizing, recording and comprehending pertinent information/data.

GLOSSARY

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Required & Demonstrable Knowledge: Familiarity with and understanding of a subject
Required & Demonstrable Skill: Ability to perform a specific activity or function

ID	Competency Description		Competency Definition
44	Knowledge: Strategic Planning	Perform Environmental Scans	Review/scan the business/technological/government policy environments in terms of trends that may impact the Department's direction through such means as literature reviews, interviews with clients, industry directions, surveys and questionnaires. The scan should result in a strategic document identifying changing conditions, both internal and external to the Department, which could impact the way the Department must operate.
45	Knowledge: Strategic Planning	Develop and Write a Strategic Plan	Use all the key information gathered (environmental scan results, interviews, etc.) refocus/develop the directions to be pursued and the specific plans to be implemented to allow the attainment of the vision.
46	Knowledge: Strategic Planning	Build Consensus on Strategy and Direction	Obtain management agreement.
47	Skill: Strategic Planning	Gather and Consolidate Relevant Data/Information	Research, organize, record and comprehend pertinent information/data.
48	Skill: Strategic Planning	Perform Environmental Scans	Review/scan the business/technological/government policy environments in terms of trends that may impact the Department's direction through such means as literature reviews, interviews with clients, industry directions, surveys and questionnaires. The scan should result in a strategic document identifying changing conditions, both internal and external to the Department, which could impact the way the Department must operate.
49	Skill: Strategic Planning	Develop and Write a Strategic Plan	Use all the key information gathered (environmental scan results, interviews, etc.) refocus/develop the directions to be pursued and the specific plans to be implemented to allow the attainment of the vision.
50	Skill: Strategic Planning	Build Consensus on Strategy and Direction	Obtain management agreement.
51	Knowledge: Policy Development	Identify Policy Need/Concerns	Recognize issues and concerns; translate them into written statements of policy (policy = management principles/expectations /direction); report to relevant areas of management for decision/action.
52	Knowledge: Policy Development	Perform Comparative Analysis of Policies	Analyze the relevance/value/use of similar policies existing in other organizations (federal departments, other levels of government, the private sector) in order to provide guidance in the resolution of issues throughout the policy development process.
53	Knowledge: Policy Development	Develop Policies	Produce statement(s) of policy including both summarized and detailed descriptions of the purpose, scope, application, roles and responsibilities, guidelines and supporting references and annexes) based on the identification of policy needs, consultation processes, and comparative analysis.

GLOSSARY
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Required & Demonstrable Knowledge: Familiarity with and understanding of a subject
Required & Demonstrable Skill: Ability to perform a specific activity or function

ID	Competency Description		Competency Definition
54	Knowledge: Policy Development	Validate/Adjust Policies	Confirm the validity/relevance of proposed or actual statements of policy through the review of policy proposals by policy proponents, steering committees, user groups, target audiences, and selected levels of management; amend policy statements, as required; re-validate the adjustments.
55	Skill: Policy Development	Identify Policy Need/Concerns	Recognize issues and concerns; translate them into written statements of policy (policy = management principles/expectations /direction); report to relevant areas of management for decision/action.
56	Skill: Policy Development	Perform Comparative Analysis of Policies	Analyze the relevance/value/use of similar policies existing in other organizations (federal departments, other levels of government, the private sector) in order to provide guidance in the resolution of issues throughout the policy development process.
57	Skill: Policy Development	Develop Policies	Produce statement(s) of policy including both summarized and detailed descriptions of the purpose, scope, application, roles and responsibilities, guidelines and supporting references and annexes) based on the identification of policy needs, consultation processes, and comparative analysis.
58	Skill: Policy Development	Validate/Adjust Policies	Confirm the validity/relevance of proposed or actual statements of policy through the review of policy proposals by policy proponents, steering committees, user groups, target audiences, and selected levels of management; amend policy statements, as required; re-validate the adjustments.
59	Knowledge: Standards Development	Identify Standards Need/Concerns	Recognize issues and concerns; translate them into written statements of standards (standards = management principles/ expectations/direction); report to relevant areas of management for decision/action.
60	Knowledge: Standards Development	Perform Comparative Analysis of Standards	Analyze the relevance/value/use of similar standards existing in other organizations (federal government, other levels of government, the private sector) in order to provide guidance in the resolution of issues throughout the standards development process.
61	Knowledge: Standards Development	Develop Standards	Produce statement(s) of standards including both summarized and detailed descriptions of the purpose, scope, application, roles and responsibilities, guidelines and supporting references and annexes based on the identification of standards needs, consultation processes, and comparative analysis.

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Required & Demonstrable Knowledge: Familiarity with and understanding of a subject
Required & Demonstrable Skill: Ability to perform a specific activity or function

ID	Competency Description		Competency Definition
62	Knowledge: Standards Development	Validate/Adjust Standards	Confirm the validity/relevance of proposed or actual statements of standards through the review of standards proposals by standards proponents, steering committees, user groups, target audiences, and selected levels of management; amend standards statements, as required; re-validate the adjustments.
63	Skill: Standards Development	Identify Standards Need/Concerns	Recognize issues and concerns; translate them into written statements of standards (standards = management principles/ expectations/direction); report to relevant areas of management for decision/action.
64	Skill: Standards Development	Perform Comparative Analysis of Standards	Analyze the relevance/value/use of similar standards existing in other organizations (federal departments, other levels of government, the private sector) in order to provide guidance in the resolution of issues throughout the standards development process.
65	Skill: Standards Development	Develop Standards	Produce statement(s) of standards including both summarized and detailed descriptions of the purpose, scope, application, roles and responsibilities, guidelines and supporting references and annexes based on the identification of standards needs, consultation processes, and comparative analysis.
66	Skill: Standards Development	Validate/Adjust Standards	Confirm the validity/relevance of proposed or actual statements of standards through the review of standards proposals by standards proponents, steering committees, user groups, target audiences, and selected levels of management; amend standards statements, as required; re-validate the adjustments.
67	Knowledge: Systems Hardware & Software	Mainframes/Minis/Micros	Hardware characteristics of mainframe computers, mini- and micro-computers (e.g. CPU, bus, channel, memory etc.).
68	Knowledge: Systems Hardware & Software	Database Management Systems	A major component of systems software that provides an interface between application programs and databases. It also includes a comprehensive set of tools for developing and operating application systems that build, maintain and use databases.
69	Knowledge: Architecture	Architecture Principles	Statements of preferred architectural direction and practice. They expand on the IT policies by explaining how the organization proposes to implement and enforce its policies and how information technology will be used to support the business. They encompass the fundamental structures of system architecture: technology, information, applications and telecommunications.

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ID	Competency Description		Competency Definition
70	Knowledge: Architecture	Business Architecture	The set of policies and rules that govern an organization's actual and planned arrangements of computers, data, human resources, communication facilities, software and management responsibilities. Business architecture specifies how and why the pieces fit together as they do, and where they go, when they are needed and why and how changes will be implemented; it touches on and augments organizational design, planning systems and financial controls.
71	Knowledge: Architecture	Work Architecture	The linking of systems (work flow/processes), people and technology so as to optimize productivity.
72	Knowledge: Architecture	Information Architecture	A structure expressed in terms of an entity relationship model and a function or process dependency model, based on which individual business systems can be developed in the knowledge that these may be readily integrated and share data at a future time.
73	Knowledge: Architecture	Applications Architecture	The design of an application and how its components are connected to, and operate with, each other.
74	Knowledge: Architecture	Technology Architecture	The design of the hardware, software, and telecommunication systems that provide the infrastructure on which business applications are developed and on which they run.
75	Skill: Architecture	Business Architecture	The architectural skill needed to establish the set of policies and rules that govern an organization's actual and planned arrangements of computers, data, human resources, communication facilities, software and management responsibilities. Business architecture specifies how and why the pieces fit together as they do, and where they go, when they are needed and why and how changes will be implemented; it touches on and augments organizational design, planning systems and financial controls.
76	Skill: Architecture	Work Architecture	The architectural skill needed to link systems, people and technology so as to optimize productivity through the application of work flow/process analysis and design.
77	Skill: Architecture	Information Architecture	The architectural skill needed to express an entity relationship model and a function or process dependency model, based on which individual business systems can be developed in the knowledge that these may be readily integrated and share data at a future time.
78	Skill: Architecture	Applications Architecture	The architectural skill needed to design an application, including how its components are connected to, and operate with, each other.

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ID	Competency Description		Competency Definition
79	Skill: Architecture	Technology Architecture	The architectural skill needed to design systems that provide the infrastructure on which business applications are developed and on which they run, using hardware, software, and telecommunication building blocks, or components.
80	Skill: Database Administration	Database Backup and Restore	Database Back-up and Restore refers to the measures taken and technology used to save databases in a protected form that can be used in case of loss of the active database to restore the database.
81	Skill: Database Administration	Database Replication	Database Replication refers to the use of a feature found in many database management systems that provides for making a copy or copies of all or part of a master database and automatically keeping the copies synchronized with the master database as it is changed.
82	Knowledge: Application and/or System Software Construction	Software Engineering Principles	A set of formal techniques used to design and develop software from concept through execution, testing, quality assurance, documentation, release and maintenance.
83	Knowledge: Application and/or System Software Construction	System Development Life Cycle (SDLC)	System Development Life Cycle refers to a process framework that an organization establishes for the phased development of systems from initiation of the project to post implementation evaluation of the resulting production system.
84	Knowledge: Application and/or System Software Construction	Modelling	The representation or pattern, in miniature, of something to be built; models may consist of text, diagrams, specification language, or free-form visual representations. The use of established modelling techniques to assist in the analysis of business data flows, data and database construction.
85	Knowledge: Application and/or System Software Construction	Methodologies	A systematic approach to the creation of application and systems software that defines development phases and specifies the activities, products, verification procedures, and completion criteria for each phase; applies equally to new application/systems software and that already in production.
86	Knowledge: Application and/or System Software Construction	Documentation	The standards and methods used in developing and maintaining a repository of information and processes.
87	Knowledge: Integration	System Integration Principles	The methods, practices and policies, both written and verbal, that are used during a system (hardware, software, network, applications) integration process.
88	Knowledge: Integration	Testing/Validation	The orderly progression of testing in which software elements, hardware elements, or both are combined and tested until the entire system has been integrated.

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ID	Competency Description		Competency Definition
89	Knowledge: Networks	Telecommunications Principles	The methods, practices and policies governing the design, development and use of the hardware and software used to transfer information (data, voice, images) between computer systems.
90	Knowledge: Networks	WAN	Knowledge of the components of a Wide Area Network: A geographically dispersed network formed by linking several computers and/or local area networks (LANs) together over long distances, usually using leased long-distance lines.
91	Knowledge: Networks	LAN	Knowledge of the components of a Local Area Network: A group of computers and peripheral devices usually dispersed over a relatively limited area and connected by a high speed communications link that enables any device to interact with any other on the network.
92	Knowledge: Networks	Gateways	A gateway is an entrance and exit point to a data network. As Gateways are generally used to connect incompatible networks, one of their main functions is to provide code and protocol conversions.
93	Knowledge: Networks	VPN	A network of permanent virtual circuits that generally uses asynchronous transfer mode or frame relay to transport IP packets or a network that uses encryption software or hardware to bring privacy to communications over a public or untrusted data network.
94	Skill: Network Integration	Develop Plan	Develop a telecommunications platform integration work plan which: a) defines the work to be done in terms of the sequence of deliverables and activities, b) estimates the effort required to perform the work and, c) provides a schedule.
95	Skill: Network Integration	Conduct Capacity Planning	Predict the performance of telecommunications platforms to ensure that projected future needs can be met; prepare plans for upgrading performance based on predictions.
96	Skill: Network Integration	Design Network	Design the network, based on the hardware and software components to be acquired, and how it will interface and function with other system components (other hardware and software platforms, applications) that form part of the overall system.
97	Skill: Network Integration	Perform Cost/Benefit Analysis	Calculate the benefit to the organization accruing from a particular cost - is the benefit to be gained from the additional cost in terms of quantifiable savings or improvements higher than setting up and maintaining a proposed service/product/feature?
98	Skill: Network Integration	System-Test Network	Verify that the network functions effectively, according to specifications, and in concert with the overall system (multiple applications, systems hardware and software).

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ID	Competency Description		Competency Definition
99	Skill: Network Integration	Monitor Network Performance	Use performance monitoring tools to measure actual performance vs. predicted/planned/specifications.
100	Skill: Hardware Integration	Develop Plan	Develop a technology integration work plan which: a) defines the work to be done in terms of the sequence of deliverables and activities, b) estimates the effort required to perform the work and, c) provides a schedule.
101	Skill: Hardware Integration	Conduct Capacity Planning	Predict the performance of hardware to ensure that projected future needs can be met; prepare plans for upgrading performance based on predictions.
102	Skill: Hardware Integration	Define Hardware Platform	Define the hardware to be acquired and how it will interface and function with other system components (software, applications, other hardware) that form part of the overall system.
103	Skill: Hardware Integration	Perform Cost/Benefit Analysis	Calculate the benefit to the organization accruing from a particular cost - is the benefit to be gained from the additional cost in terms of quantifiable savings or improvements higher than setting up and maintaining a proposed service/product/feature?
104	Skill: Hardware Integration	Install and Test Hardware Components	Perform installation, unit test hardware components/functions.
105	Skill: Hardware Integration	System-Test Hardware Platform	Verify that the hardware functions effectively, according to specifications, and in concert with the overall system (multiple applications, systems software, and other hardware).
106	Skill: Hardware Integration	Monitor Hardware Performance	Use performance monitoring tools to measure actual performance vs. predicted/planned/specifications.
107	Skill: Software Integration	Develop Plan	Develop a software integration work plan which: a) defines the work to be done in terms of the sequence of deliverables and activities, b) estimates the effort required to perform the work and, c) provides a schedule.
108	Skill: Software Integration	Conduct Capacity Planning	Predict the performance of software to ensure that projected future needs can be met; prepare plans for upgrading performance based on predictions.
109	Skill: Software Integration	Define System/Infrastructure	Define the software to be acquired and how it will interface and function with other system components (hardware, applications, other software) that form part of the overall system.
110	Skill: Software Integration	Perform Cost/Benefit Analysis	Calculate the benefit to the organization accruing from a particular cost - is the benefit to be gained from the additional cost in terms of quantifiable savings or improvements higher than setting up and maintaining a proposed service/product/feature?
111	Skill: Software Integration	Install and Test Software Components	Perform installation, unit test software components/functions.

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ID	Competency Description		Competency Definition
112	Skill: Software Integration	System-Test Software	Verify that the software functions effectively, according to specifications, and in concert with the overall system (hardware, multiple applications, and other systems software).
113	Skill: Software Integration	Monitor Software Performance	Use performance monitoring tools to measure actual performance vs. predicted/planned/specifications.
114	Skill: Application Construction & Integration: *Preliminary Analysis*	Examine Current System	Identify the users and diagnose problems with the current system.
115	Skill: Application Construction & Integration: *Preliminary Analysis*	Define System Context/Objectives	Determine the objectives to be met by a new system; define its scope in terms of the activities and data of the organization; define key issues.
116	Skill: Application Construction & Integration: *Preliminary Analysis*	Build Conceptual Data Model	Define the subject system, its facets, entities and relationships. This consists of a representation and definition of the entities (people, places, things) and events that constitute and influence the various aspects of a system and concerning which the system collects, stores and produces data. It also represents and defines the association and relationships occurring among the entities when the system causes or responds to an event, and of the attributes of the entities and relationships.
117	Skill: Application Construction & Integration: *Preliminary Analysis*	Build Conceptual Process Model	Define the system and subsystems. The conceptual process model is a representation and definition of the data flows describing situations or events to which the system responds and of the functions or processes stimulated by the data flows and producing the system's responses. It also represents and defines the external actors (people, organizations or other systems) originating or receiving data flow in the system's environment, and of data stores holding the data the system needs in order to respond to events.
118	Skill: Application Construction & Integration: *Preliminary Analysis*	Define Basic System Concepts	Define the fundamental guideline for system design, i.e. how the system should function so as to ensure the most effective operation.
119	Skill: Application Construction & Integration: *Preliminary Analysis*	Draft Functional Process Models	Decide which functions will be automated; define responsibilities of organizations. The functional process model is a representation and definition of the behaviour of processes and the communications between them; it defines basic system concepts and functional standards.
120	Skill: Application Construction & Integration: *Preliminary Analysis*	Determine Technical Feasibility	Build and experiment with a prototype; describe the technical alternatives, survey the market for products that could possibly satisfy the requirement; evaluate existing packages.

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ID	Competency Description		Competency Definition
121	Skill: Application Construction & Integration: *Preliminary Analysis*	Determine Cost Effectiveness	Define implementation strategy, describe impacts on the organization, calculate the benefit to the organization accruing from the system development and maintenance cost - is the benefit to be gained from the additional cost in terms of quantifiable savings or improvements higher than setting up and maintaining a proposed service/product/feature?
122	Skill: Application Construction & Integration: *System Architecture*	Evaluate Current System/Quality	Evaluate the quality of data of the current system; define conversion rules and describe conversion activities.
123	Skill: Application Construction & Integration: *System Architecture*	Define System Performance Criteria	Define the performance goals for the application system, e.g. transaction volume, response time.
124	Skill: Application Construction & Integration: *System Architecture*	Define Architecture Standards	Define system functional standards and operating environment; define the technical design standards.
125	Skill: Application Construction & Integration: *System Architecture*	Outline Physical Process Model	Prepare the development plan; draft tables of contents for user guides; establish the functional test strategy.
126	Skill: Application Construction & Integration: *Functional Design*	Plan Release Implementation	Determine the resources required to operate and maintain the system; analyze training needs and prepare a training strategy; develop an implementation plan.
127	Skill: Application Construction & Integration: *Functional Design*	Build Functional Data Model	Define functional entities, links and data elements.
128	Skill: Application Construction & Integration: *Functional Design*	Write Unit Process Specification	Describe operations and define functional views of data.
129	Skill: Application Construction & Integration: *System Construction*	Define Physical Data Model	Partition data elements into physical databases; define databases and files, physical records, physical data elements, and database utility runs.
130	Skill: Application Construction & Integration: *System Construction*	Define Physical Process Model	Partition the system into programming units; describe the programming units; define the internal views of data; define program communication data; write program specifications; write operations and production specifications.
131	Skill: Application Construction & Integration: *System Construction*	Program Physical Data Model	Install database packages (multi-function/multi-user databases, usually proprietary and commercially available); code database definitions, record definitions and internal views.
132	Skill: Application Construction & Integration: *System Construction*	Program Physical Process Model	Install program packages (multi-function/multi-user applications, usually proprietary and commercially available); code program communication data, screen layouts, programs, and job control statements.

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ID	Competency Description		Competency Definition
133	Skill: Application Construction & Integration: *System Construction*	Prepare Implementation Document	Write the installation plan, operations manual, user guide.
134	Skill: Application Construction & Integration: *System Construction*	Prepare Installation	Produce training package; write installation instructions.
135	Skill: Application Construction & Integration: *System Construction*	Prepare Test Environment	Define the functional test environment.
136	Skill: Application Construction & Integration: *System Construction*	Conduct Functional Test	Determine and order the test units of a functional test group; identify test conditions and expected results; perform the tests; write the functional test report.
137	Skill: Application Construction & Integration: *Implementation*	Install System	Develop a detailed installation plan; install the system.
138	Skill: Application Construction & Integration: *Implementation*	Conduct System Tests	Determine and order the system test units; define the system test plan; identify test conditions and expected results; perform the tests; write the system test report.
139	Skill: Application Construction & Integration: *Implementation*	Start Production	Obtain acceptance of the system; convert to the new system and cut over to production.
140	Skill: Application Construction & Integration: *Implementation*	Evaluate System - Post Implementation	Conduct post-implementation evaluation.
141	Knowledge: System Testing	Testing Tools & Techniques	Knowledge of test case design and regression testing to prove the functionality of the system under test. To ensure scalability, reliability and performance of an application system it is necessary to predict system behavior and performance under various load conditions. This can be done by simulating user traffic and measuring the performance of the application system in terms of response times under various load conditions.
142	Knowledge: System Testing	Management & Monitoring of Test Plans	Assembling the testing team, scheduling the tests, directing planned testing activities, performing analysis, tracking progress against plan, resolving issues and preparing reports of test results.
143	Skill: System Testing	Test Planning and Coordination	Establishing what aspects of system behaviour are required to be tested, designing the tests, scheduling the work, resourcing the plan and communicating with the participants.

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144	Skill: System Testing	Supervision of Testing in Accordance with Plan	Assembling the testing team, scheduling the tests, directing planned testing activities, performing analysis, tracking progress against plan, resolving issues and preparing reports of test results.
145	Skill: System Testing	Development of Test Scenarios and Test Scripts	Designing test cases and developing scripts that can be run and re-run when changes are made to ensure that changes have not inadvertently impacted system behaviour.
146	Skill: System Testing	Establishing and Maintaining Source and Object Code Libraries	Establishing control of libraries to ensure that the proper software version is tested.
147	Skill: System Testing	Establishing Software Testing Procedures	Preparing testing procedures, distributing the documented procedures and making sure that the procedures are understood and followed by staff.
148	Skill: System Testing	Establishing and Operating "Interoperability" Testing Procedures	Developing an approach and process to prove the systems under test operate as planned with interfacing systems.
149	Skill: System Testing	Establishing a Validation and Verification Capability	Putting in place processes, staff and related tools to permit independent validation of specifications against stated user requirements and verifying that systems comply with specifications.
150	Knowledge: Management of IT Support Processes	Operations Related Support Processes	The management of the human resources needed, and the set of procedures, software, equipment and processes designed, to keep a computer production and/or development system operating near maximum efficiency; includes both central and remote system installations.
151	Knowledge: Management of IT Support Processes	Network Management Related Support Processes	The management of a set of procedures, software, equipment and processes designed to keep a network operating near maximum efficiency.
152	Knowledge: Management of IT Support Processes	Repository Administration	The administration of a specialized database (repository) containing information about entities and their attributes, relationships, origin, usage etc..
153	Knowledge: Management of IT Support Processes	IT Security Management	The protection of resources from unauthorized destruction, modification or disclosure, whether accidental or intentional. It includes implementation and management of security tools that provide users different levels of access to different system resources, usually through password protection schemes. Security tools also encompasses virus detection and protection software.
154	Knowledge: Management of IT Support Processes	Change Management	Change management controls the planning, scheduling, distribution, application and tracking of changes to information systems.
155	Knowledge: Management of IT Support Processes	Release Management	The planned introduction of improvements/adjustments to system software/applications.
156	Knowledge: Management of IT Support Processes	Problem Management	The detection, reporting, analysis, recovery, resolution and tracking of problems occurring with or in information systems.

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157	Knowledge: Management of IT Support Processes	Performance Measurement	For a configuration of hardware and software, a quality that is measured by such dynamic characteristics as response time, turnaround time, frequency of failure, and frequency and duration of unavailability (outages).
158	Knowledge: Management of IT Support Processes	Configuration Management	The management of the physical and logical properties of resources and their relationships (such as connections and dependencies).
159	Knowledge: Management of IT Support Processes	Capacity Planning	The prediction of the performance of a system (hardware, software, telecommunications, applications) to ensure that projected future needs can be met.
160	Skill: Management of IT Support Processes	Define Configuration Management Procedures	Define configuration management roles and responsibilities; describe the processes and software tools to be used for the control of the physical and logical properties of resources and their relationships (such as connections and dependencies).
161	Skill: Management of IT Support Processes	Define Change Management Procedures	Define change management roles and responsibilities; describe the processes and software tools to be used for the control of the planning, scheduling, distribution, application and tracking of changes to information systems.
162	Skill: Management of IT Support Processes	Define Release Management Procedures	Define release management procedure roles and responsibilities; describe the processes and software tools to be used for the planned introduction of improvements/adjustments to system software/applications.
163	Skill: Management of IT Support Processes	Define Problem Management Procedures	Define problem management roles and responsibilities; describe the processes and software tools to be used for the control, detection, reporting, analysis, recovery, resolution and tracking of problems occurring with or in information systems.
164	Skill: Management of IT Support Processes	Define Security Management Procedures	Define security management roles and responsibilities; describe the processes and software tools to be used for the protection of resources from unauthorized destruction, modification or disclosure, whether accidental or intentional.
165	Skill: Management of IT Support Processes	Define Documentation Maintenance Procedures	Define documentation maintenance standards, roles and responsibilities; describe the processes and software tools to be used for document repository control and documentation format, changes, versioning and distribution.
166	Knowledge: Security Systems	Encryption Concepts & Standards	Encryption Concepts and Standards: Knowledge of symmetric and asymmetric key encryption and related algorithms, standards and key management issues and solutions
167	Knowledge: Security Systems	Secure Applications	Secure Applications: applications that are enabled by use of encryption techniques e.g. secure messaging, digital signature, access control, VPN, single sign-on, financial transaction processing.

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ID	Competency Description		Competency Definition
168	Knowledge: Security Systems	Personnel Identification & Authentication Concepts & Technology	The means of positively identifying an individual and authenticating that they are who they claim to be.
169	Knowledge: Wireless Application Services	Wireless Hand-held Devices, Associated Hardware & Software	Handheld Wireless Devices (Hardware and Software) refers to end user devices and their operating systems. Included are Communicating Personal Digital Assistants and Programmable Cellular Telephones capable of functioning as data terminals.
170	Knowledge: Wireless Application Services	Wireless Manipulation Language	The Wireless Manipulation Language (WML) is an XML-based language defined by the WAP specification that is designed to enable powerful applications within the constraints of handheld devices.
171	Knowledge: Wireless Application Services	Wireless Application Protocol (WAP)	Wireless Application Protocol (WAP): The Wireless Application Protocol is the de-facto world standard for the presentation and delivery of wireless information and telephony services on mobile phones and other wireless terminals. The WAP specification is developed and maintained by the WAP Forum, an industry group comprising representation from more than 400 members that includes wireless service providers, handset manufacturers, infrastructure providers and software developers.
172	Knowledge: Wireless Application Services	Cellular Radio Multiple Access Protocols (CDMA, TDMA, CDPD, GSM)	Cellular Radio Multiple Access Protocols (Code Division Multiple Access (CDMA), Time Division multiple Access (TDMA), Cellular Digital Packet Data Networks (CDPD), and Global System for Mobile Communications (GSM)) refer to the protocols used to efficiently share the radio spectrum in order to permit multiple concurrent calls.
173	Knowledge: Wireless Application Services	Geo-position Sensing (GPS)	Geo Position Sensing (GPS) refers to the satellite based system established by the US military to accurately locate points near the earth's surface.
174	Knowledge: Call Centre	Voice over IP	Voice over IP: "Voice over IP" is a technology that permits sharing of internet protocol based networks (Internet/Intranet/Extranet) by voice and data traffic in order to achieve economies in providing long distance voice and Fax service. Voice over IP is often attractive for economically interconnecting call centres and PABXs internal to an organization.
175	Knowledge: Call Centre	Voice Messaging	Voice Messaging: Voice Messaging is a technology that permits a caller to leave a message, without disturbing the called person or when the called person is unavailable, that the called person can access at a later time.

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176	Knowledge: Call Centre	Fax Messaging	Fax Messaging: Facsimile is a technology used to transmit images of documents over the telephone network.
177	Knowledge: Call Centre	Interactive Voice Response (IVR) Application Systems	Interactive Voice Response (IVR) Application Systems: Interactive Voice Response (IVR) Application Systems permit callers to obtain information or enter transactions using the telephone and keypad. Such systems are based on Computer Telephony Integration (CTI) and may employ large vocabulary, speaker-independent continuous Automated Speech Recognition (ASR), often referred to as Automated Voice Recognition (AVR), to reduce dependency on use of the keypad.
178	Knowledge: Call Centre	Automated Voice Recognition (AVR) Application Systems	Automated Voice Recognition (AVR) Application Systems: Automated Voice Recognition (AVR) Application Systems are systems that interpret and translate speech into computer executable transactions that retrieve information or perform a function requested by a caller.
179	Knowledge: Call Centre	Automated Call Distribution (ACD)	Automated Call Distribution (ACD): Automated Call Distribution (ACD) is a technology that permits a call centre or a network of call centres to more effectively and efficiently service callers by providing automated call routing and support to call centre management in tracking performance and optimizing routing.
180	Knowledge: Call Centre	Service Request Management Systems	Service Request Management Systems: Service Request Management Systems assist the call centre service agent by performing such functions as presenting a caller profile or customer account based on caller-ID before the agent accepts the call, pre-filling a service request or ticket with contact information and keeping track of the service request until it is closed.
181	Knowledge: Call Centre	Equipment, Networks, Services	Private Administrative Branch Exchange (PABX), Interactive Voice Response (IVR), client access network, network interconnecting Call Centres, transaction processing, service request management.
182	Knowledge: Call Centre	Operations	The organization, infrastructure and operating principles of voice and internet-driven Call Centres.
183	Knowledge: Call Centre	Analyze Telephony Service Needs	Examine an individual's (or organization's) voice service requirements.
184	Knowledge: Call Centre	Recommend Telephony Plan of Action	Recommend the most cost-effective equipment and services suited to an individual's (or organization's) voice service needs; provide a plan for acquisition and installation.

GLOSSARY

(no other competency interpretations will be considered)

Required & Demonstrable Knowledge: Familiarity with and understanding of a subject
Required & Demonstrable Skill: Ability to perform a specific activity or function

ID	Competency Description		Competency Definition
185	Skill: Call Centre	Automated Call Distribution (ACD)	Automated Call Distribution (ACD): Automated Call Distribution (ACD) is a technology that permits a call centre or a network of call centres to more effectively and efficiently service callers by providing automated call routing and support to call centre management in tracking performance and optimizing routing.
186	Skill: Call Centre	Service Request Management Systems	Service Request Management Systems: Service Request Management Systems assist the call centre service agent by performing such functions as presenting a caller profile or customer account based on caller-ID before the agent accepts the call, pre-filling a service request or ticket with contact information and keeping track of the service request until it is closed.
187	Skill: Call Centre	Equipment, Networks, Services	Private Administrative Branch Exchange (PABX), Interactive Voice Response (IVR), client access network, network interconnecting Call Centres, transaction processing, service request management, using Workforce Management Products such as Remedy, Aurora and TCS
188	Skill: Call Centre	Operations	The organization, infrastructure and operating principles of voice and internet-driven Call Centres, including Call Management Packages such as Siebel, Clarify, Genesys, Lucent and Scopus
189	Skill: Call Centre	Analyze Telephony Service Needs	Examine an individual's (or organization's) voice service requirements.
190	Skill: Call Centre	Recommend Telephony Plan of Action	Recommend the most cost-effective equipment and services suited to an individual's (or organization's) voice service needs; provide a plan for acquisition and installation.
191	Knowledge: Web Development	Web Site Design	Web site development including planning, page layout and linkages, graphic design, web applications, database integration, secure transactions.
192	Knowledge: Web Development	Web Site Authoring Tools	The use of authoring tools that link technology with design within the web environment; includes establishing a website presence, navigation within the website, links to and use of databases, and website maintenance.
193	Knowledge: Web Development	Web Site Graphics	The visual conveyance of concepts linked to technology within the web environment (visual execution includes brand, tone, and graphic design).
194	Knowledge: Web Development	Website Multimedia	The visual conveyance of concepts linked to technology within the web environment (visual execution includes brand, tone, and multi-media design).

GLOSSARY

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ID	Competency Description		Competency Definition
195	Knowledge: Web Development	Virtual Reality Modeling Language (VRML)	A language used by multi-media content developers to create 3-D virtual worlds on web sites
196	Knowledge: Web Development	Usability	- Development of usability test plans and analyses of same: documents describing test methods and evaluation techniques that determine how people interact with the interface - and taking corrective action when necessary. - Interactive prototyping the showing basic form and functionality that are used for both usability testing and presentations
197	Knowledge: Web Development	Web Site Databases	Dealing with web-specific database issues: - Performance - Backup - Replication - Interfaces (front- and back-end links)
198	Knowledge: Web Development	Internet Security Technology	The technology includes: - Encryption: DES and triple DES, public key, elliptic curve cryptography, SSL or Transport Level Security (TLS), Wireless Transport Level Security (WTLS) - wireless version of TLS or SSL - Public Key Infrastructure (PKI) - Firewalls - Virus Detection Tools - Tokens, Smart Cards and Public Key certificates - Virtual Private Networks (VPN) - Secure Messaging - Access Control
199	Knowledge: Web Development	Internet Protocols	TCP/IP: Transmission Control Protocol/Internet Protocol, the basic communication protocol that is the foundation of the Internet. All the other protocols, such as HTTP, FTP, and Gopher, are built on top of TCP/IP.
200	Knowledge: Web Development	Internet Browsers	This is the software that allows a user to access and view HTML documents and to navigate information databases.
201	Knowledge: Web Development	Internet Browser Plugins	Program modules that add inline functionality to browsers. On the Web, plugins let Web browsers display data such as VRML scenes, real-time video, or multimedia data inline with the HTML document.

GLOSSARY

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Required & Demonstrable Knowledge: Familiarity with and understanding of a subject
Required & Demonstrable Skill: Ability to perform a specific activity or function

ID	Competency Description		Competency Definition
202	Knowledge: Web Development	Web Servers	Understanding of the features and functions of web server platforms
203	Skill: Web Development	Web Site Design	Web site development including planning, page layout and linkages, graphic design, web applications, database integration, secure transactions.
204	Skill: Web Development	Web Site Authoring Tools	The use of authoring tools that link technology with design within the web environment; includes establishing a website presence, navigation within the website, links to and use of databases, and website maintenance. The tools include CGI, HTML, JavaScript, Perl, Java, VB, C++, C, and ASP.
205	Skill: Web Development	Web Site Graphics	The visual conveyance of concepts linked to technology within the web environment (visual execution includes brand, tone, and graphic design).
206	Skill: Web Development	Website Multimedia	The visual conveyance of concepts linked to technology within the web environment (visual execution includes brand, tone, and multi-media design).
207	Skill: Web Development	Usability	• Development of usability test plans and analyses of same: documents describing test methods and evaluation techniques that determine how people interact with the interface - and taking corrective action when necessary. • Interactive prototyping the showing basic form and functionality that are used for both usability testing and presentations
208	Skill: Web Development	Web Site Databases	Dealing with web-specific database issues: • Performance • Backup • Replication • Interfaces (front- and back-end links)
209	Skill: Web Development	Internet Security Technology Implementation	Internet Security Implementation refers to the skill involved in performing threat and risk assessments, defining requirements and implementing Internet Security technology.
210	Skill: Writing Tools	Skill in the use of Desktop Publishing Packages	Skill in the use of desktop publishing packages other than word processing packages
211	Skill: Writing Tools	Skill in the use of Web Site Content Development Packages	Skill in the use of website content development packages other than word processing packages

GLOSSARY

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Required & Demonstrable Knowledge: Familiarity with and understanding of a subject
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ID	Competency Description		Competency Definition
212	Knowledge: e-Commerce	e-Commerce Standards	• XMI,XML,Java, and UDDI, UCC (Uniform Code Council) standards • ANSI X12, UN/EDIFACT, EDI-INT standards

213	Knowledge: e-Commerce	e-Commerce Architecture	• Electronic Transaction enablement and management
			  • Requisition and Purchasing
			  • Electronic Catalog Content Management
			  • Electronic Marketing

214	Knowledge: e-Commerce	e-Commerce Security Issues	• Security Policy Director – such as Tivoli Secureway Policy Director
			• Firewalls
			• Data Encryption
			  • Public key Asymmetric Encryption
			  • Private Key Symmetric Encryption
			• Digital Signatures
			• Digital Certificates

215	Knowledge: e-Commerce	e-Commerce Protocols	• EJB, RMI, Corba, J2EE • FTP, HTTPS, SMTP/EDI-INT, Async, Bisync and ANX • Netscape SSL(Secure Sockets Layer) Protocol • SET(Secure Electronic Transaction) protocol

216	Skill: e-Commerce	e-Commerce Architecture	• Data Transformation
			• XML, EDI and any FLAT files
			• Electronic Transaction enablement and management
			  • Requisition and Purchasing
			  • Electronic Catalog Content Management
			  • Electronic Marketing

217	Skill: e-Commerce	e-Commerce Security Issues	Internet Security Implementation refers to the skill involved in performing threat and risk assessments, defining requirements and implementing Internet Security technology. • Security Policy Director – such as Tivoli Secureway Policy Director • Firewalls
218	Skill: e-Commerce	e-Commerce Protocols	• EJB, RMI, Corba, J2EE • FTP, HTTPS, SMTP/EDI-INT, Async, Bisync and ANX

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Required & Demonstrable Knowledge: Familiarity with and understanding of a subject
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ID	Competency Description		Competency Definition
219	Skill: e-Commerce	Establish & Implement Principles of Operational Competencies	Developing principles to guide the establishment and implementation of the operational competencies that are key to the ESD service delivery goals, they encompass: • Developing/acquiring staff with experience in managing multiple relationships • Rapid implementation change across an organization • Developing/acquiring the skills needed identify and prioritize service delivery opportunities
220	Skill: e-Commerce	Develop e-Commerce Policies & Standards	Developing and implementing standards across an organization: • Ensuring that the infrastructure (network hardware, software, security etc..) can be scaled upward to meet new and unforeseen requirements • Developing and implementing a strategy across an organization that is driven by service delivery and business content/requirements • Establishing a climate where human resources are aligned with ESD goals
221	Skill: e-Commerce	e-Commerce Servers	• Domino Merchant 2.0 Server • Net Commerce Start Server • Net Commerce Pro Server • IBM CommercePoint Gateway
222	Skill: m-Commerce	Wireless Solutions Technology	• M/ergy by Comdev – designed to cover 3-5 kms range from each base station • Bluetooth – short range 2.4 ghz transmission technology with 100 metres range • OFDM – Orthogonal Frequency Division Multiplexing • W-OFDM – Wideband OFDM • BWIF – Broadband Wireless Internet Forum • DSRC -Dedicated Short Range Communications 5.9 GHz Standards •
223	Skill: m-Commerce	Wireless Solutions Products	• PDA's • Smart PC • Wireless Keyboard, Mouse, Modems • C110/C111 Wireless LAN Cards • Wireless LAN Access Points • Access Controllers • Wireless Servers such as Orinoco Access Server 2000 • Duplexers, Couplers, Terminator, Routers • Remote Antenna Monitors • Power Dividers, Filters, RF switches and RF Radiation Monitors

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Required & Demonstrable Knowledge: Familiarity with and understanding of a subject
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ID	Competency Description		Competency Definition
224	Skill: m-Commerce	Wireless Standards and Protocols	Skill in using Standards and protocols for providing cellular phones, pagers and other wireless devices with secure access to e-mail and text-based Web pages. • IEEE (institute of Electrical & electronic Engineers) the IEEE 802.11a & 802.11a/RA • Bluetooth technology • Wireless Manipulation Language (WML) • Developer languages such as Conduit SDK for Java, COM, and C/C++
225	Skill: m-Commerce	Wireless Application Languages	Building wireless applications using different languages for Wireless environment including WAP, WML, Java, COM, C/C++ and J2ME
226	Skill: m-Commerce	Cellular Radio Multiple Access Protocols	• CDMA (Code Division Multiple Access) • TDMA (Time Division Multiple Access) • GSM (Global System for Mobile Communications) • GPRS (General Packet Radio Service) • WCDMA (Wideband Code Division Multiple Access) • HDML Handheld Device Markup Language
227	Skill: m-Commerce	Transmission Technology Concepts	• Smart Antenna • 3G RTT requirements and performance criteria • Multiplexing schemes. • Signal propagation factors (e.g., multipath, fading and shadowing). • Role of satellite systems. • Fixed Wireless Access (FWA). • Interaction between 3G and the Internet.
228	Skill: m-Commerce	Geo-Position Sensing (GPS)	Geo-Position Sensing (GPS) refers to the satellite based system established by the US military to accurately locate points near the earth's surface.
229	Skill: m-Commerce	Voice over Internet Protocol (VOIP)	The two-way transmission of audio over an IP network. When used in a private intranet or WAN, it is generally known as "voice over IP," or "VOIP." When the public Internet is the transport vehicle, it is referred to as "Internet telephony.
230	Skill: Leadership	Communicate Direction	To promulgate information regarding the course of action an individual or group should take to work toward the attainment of an objective.
231	Skill: Communicating	Listening to Clients/Peers	Being able to listen attentively, without imposing one's personal feelings or beliefs, to what another person is attempting to communicate.

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Required & Demonstrable Knowledge: Familiarity with and understanding of a subject
Required & Demonstrable Skill: Ability to perform a specific activity or function

ID	Competency Description		Competency Definition
232	Skill: Communicating	Writing Clearly and Concisely	The art of communicating information in written format using a style which is clear, concise and easily understood by the intended reader(s). Different styles are required for different audiences (non-technical vs. technical, for example).
233	Skill: Communicating	Effective Oral Presentations	The art of communicating information verbally using a style that is clear, concise and easily understood by the intended audience.
234	Skill: Communicating	Facilitation	The ability to help groups seek consensus, solve problems, prepare strategies and plans.
235	Skill: Communicating	Write Business Plans, Standards and Policies	Produce statement(s) of business plans, standards and policies including both summarized and detailed descriptions of the purpose, scope, application, roles and responsibilities, guidelines and supporting references and annexes based on input supplied by those responsible for developing the Business Plans, Standards and Policies
236	Skill: Business Process Re-engineering	Preliminary Activities	• Assess the current state of the organization • Explain the need for change • Illustrate the desired state • Create a communications campaign for change
237	Skill: Business Process Re-engineering	Form the Re-engineering Team	• Establish a BPR organizational structure • Establish the roles for performing BPR • Choose client organization team members

238	Skill: Business Process Re-engineering	Identify BPR Opportunities	• Identify the core/high-level processes
			• Select processes that should be re-engineered:
			    • Prioritize selected processes
			    • Formulate new process performance objectives
			    • Establish key process characteristics
			    • Identify potential barriers to implementation
			    • Develop business case(s)

239	Skill: Business Process Re-engineering	Understand the Existing Process	• Understand why the current steps are performed • Model the current process • Understand how technology is currently used • Understand how information is currently used • Understand the current organizational structure • Compare current process with the new objectives
240	Skill: Business Process Re-engineering	Re-engineer the Process	• Obtain diverse views • Question current operating assumptions • Brainstorm using BPR principles • Evaluate the impact of new technologies

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Required & Demonstrable Skill: Ability to perform a specific activity or function

ID	Competency Description		Competency Definition
241	Skill: Business Process Re-engineering	Blueprint the New Business System	• Model the new process steps • Model the new information requirements • Document the new organizational structure • Describe the new technology specifications • Record the new personnel management systems • Describe the new values and culture required
242	Skill: Business Process Re-engineering	Perform the Transformation	• Create a migration plan • Develop metrics for measuring performance during implementation • Involve the impacted staff • Implement in an iterative fashion • Establish the new organizational structures • Assess current skills and capabilities of workforce • Map new tasks and skill requirements to staff • Re-allocate workforce • Develop a training curriculum • Educate staff about the new process • Educate the staff about new technology used • Decide how new technologies will be introduced • Transition to the new technologies • Incorporate process improvement mechanisms
243	Skill: Transitioning to the Virtual Workplace	Preliminary Activities	• Assess the current state of the organization • Explain the need for change • Illustrate the desired state • Create a communications campaign for change

244	Skill:
	Transitioning to the Virtual Workplace
		Identify Virtual Workplace Opportunities	• Identify the core/high-level processes
			• Select Virtual Workplace candidate processes:
			  • Prioritize selected processes
			  • Formulate new process performance objectives
			  • Establish key process characteristics
			  • Identify potential barriers to implementation
			  • Develop business case(s)

GLOSSARY

(no other competency interpretations will be considered)

Required & Demonstrable Knowledge: Familiarity with and understanding of a subject
Required & Demonstrable Skill: Ability to perform a specific activity or function

ID	Competency Description		Competency Definition
245	Skill: Transitioning to the Virtual Workplace	Understand the Existing Process	• Understand why the current steps are performed • Understand how technology is currently used • Understand how information is currently used • Understand the current organizational structure • Compare current process with the new objectives
246	Skill: Transitioning to the Virtual Workplace	Design the Virtual Workplace Process	• Obtain diverse views • Question current operating assumptions • Brainstorm • Evaluate the impact of new technologies
247	Skill: Transitioning to the Virtual Workplace	Blueprint the Virtual Workplace	• Model the new process steps • Model the new information requirements • Document the new organizational structure • Describe the new technology specifications • Describe the new values and culture required
248	Skill: Transitioning to the Virtual Workplace	Design and develop the Transformation	• Create a migration plan • Develop metrics for measuring performance during implementation • Involve the impacted staff • Operate in an iterative fashion • Recommend new organizational structures • Assess current skills and capabilities of workforce • Map new tasks and skill requirements to staff • Recommend re-allocation of workforce • Develop a training curriculum • Educate staff about the new process • Educate the staff about new technology used • Educate management and employees on empowerment • Educate management and employees on how virtual teams work (a collaborative workforce) • Educate management and employees on how to achieve and maintain virtual workforce social interaction • Recommend mechanisms for improvement of incorporation process