

Toronto Screen Industry Workforce Study

FINAL REPORT

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Prepared by
Nordicity

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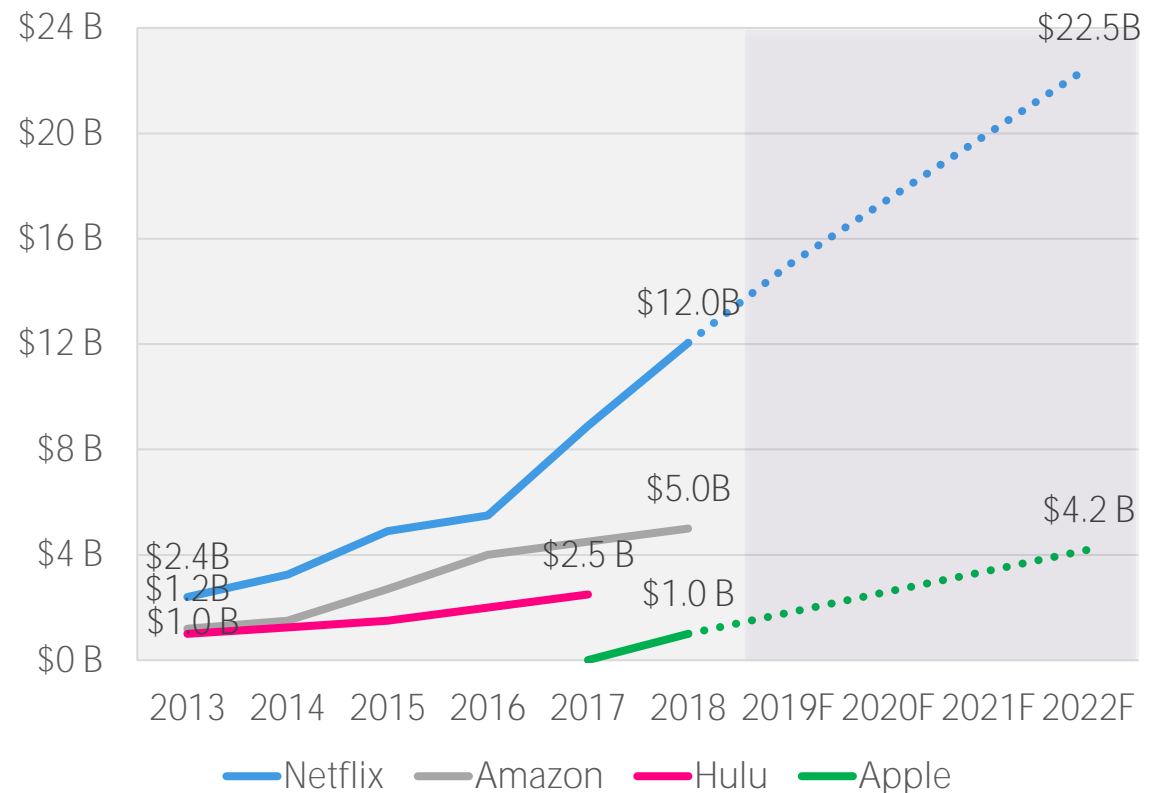
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1. Summary of Quantitative Analysis

1.1 Production volume and trends (1/8) | Demand for film/TV

- The global film and television production industry has seen an enormous influx of investment from Subscription Video on Demand (SVOD) services – recently joined by Disney/Fox and Comcast/Sky after their respective content-inspired mergers.
- These SVOD services have progressively escalated competition based on a common strategy of producing exclusive original content to attract and retain subscribers.
- **The SVODs' content spending has occurred at a scale that has overwhelmed the capacity of film and television producers at a global scale, driving film and television production booms across most jurisdictions with such an industry.**
- Based on historical data and forecasts (adjacent chart), this boom is expected to continue over the near term due to continued spending growth from incumbents, as well as new entrants.

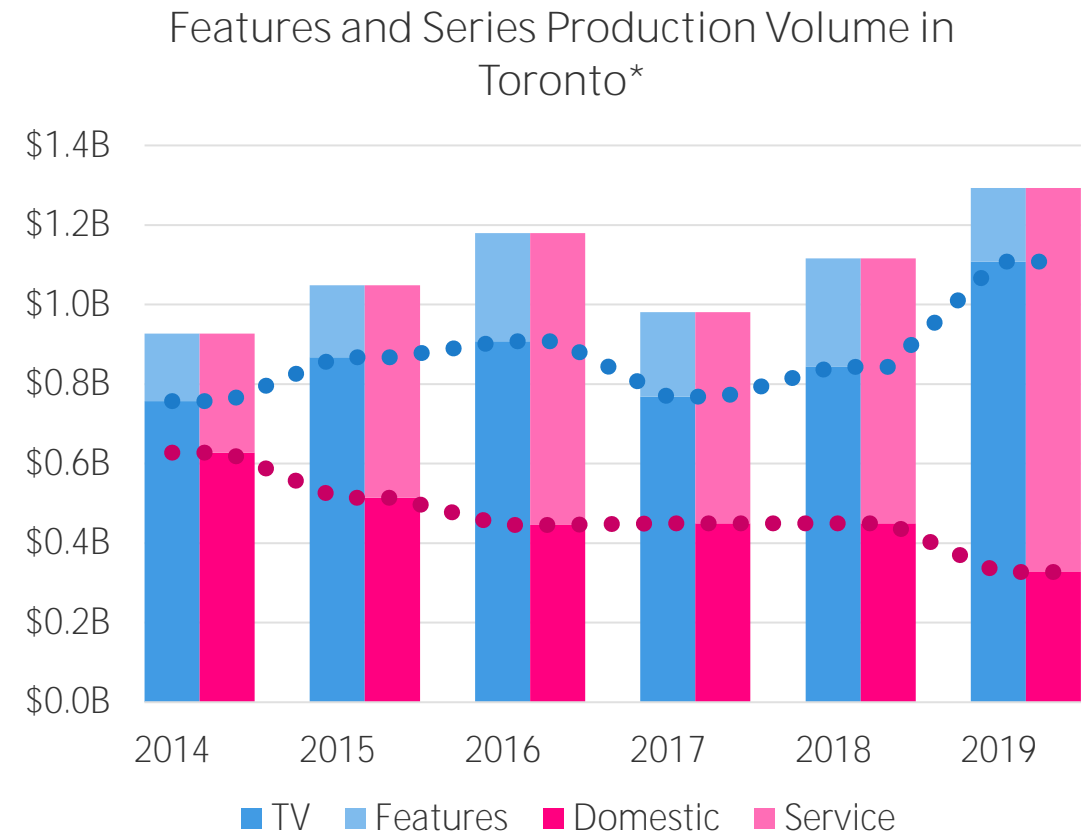
Global SVOD Content Production Spending (USD)



Sources: eMarketer; JPMorgan Chase; Goldman Sachs; IHS; Netflix; Business Insider; Statista; FierceCable; Variety; Forbes; RBC Capital Markets

1.1 Production volume and trends (2/8) | Live-action in Toronto

- Largely as a result of the global content trends, Toronto has fielded extraordinary demand for **service production, straining the city's supply of** production infrastructure and talent.
- Over the past six years, Toronto has exhibited clear-cut trends toward increased (foreign) service production and increased TV series production, both in terms of its share and overall volume.
- At the same time, Canadian TV production has modestly increased (from \$2.4B to \$2.9B at the national level), though overall domestic production volume has declined in Toronto.
- Taken together, these points suggest that producers, especially domestic ones, are being crowded out of the Toronto production market given limitations on the production space and talent available to them.



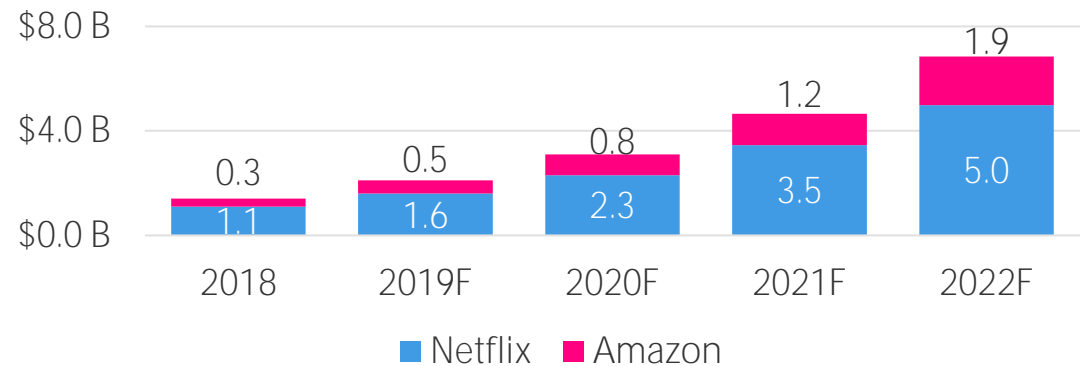
Source: City of Toronto

*Not including commercials, post-production, VFX, animation, etc.

1.1 Production volume and trends (3/8) | Demand for animation

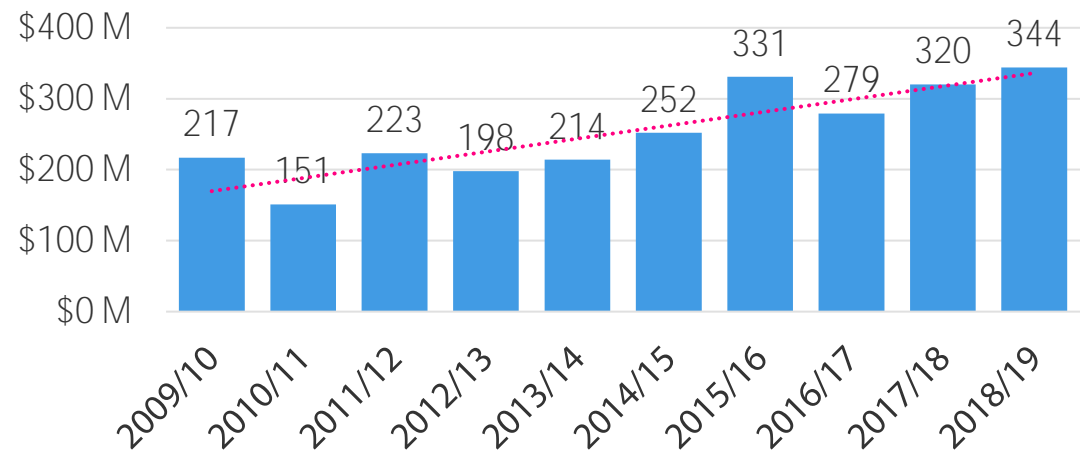
- The SVODs' content spending also applies to animated content. Forecasts indicate that Netflix and Amazon could spend almost \$7 billion on original animation production in 2022, about 15% of their total spending.
- The demand for animation content is boosted by the entry of other major streaming services (e.g., Disney, which repatriated content offered on **competitor's services to its own streaming service**), and the growing interest in animation for adult audiences.
- North of the border, Canadian-content animation production increased to \$344 million in 2018/19 (7.5% YoY), continuing a steady trend.
- This demand for animated content (especially that intended for adult audiences) has only intensified as a result of physical, live action productions being obstructed as a result of the pandemic.

Projected Spending on Animated Original Content (US\$)



Source: Loup Ventures via LA Times

Volume of Canadian Animation Production



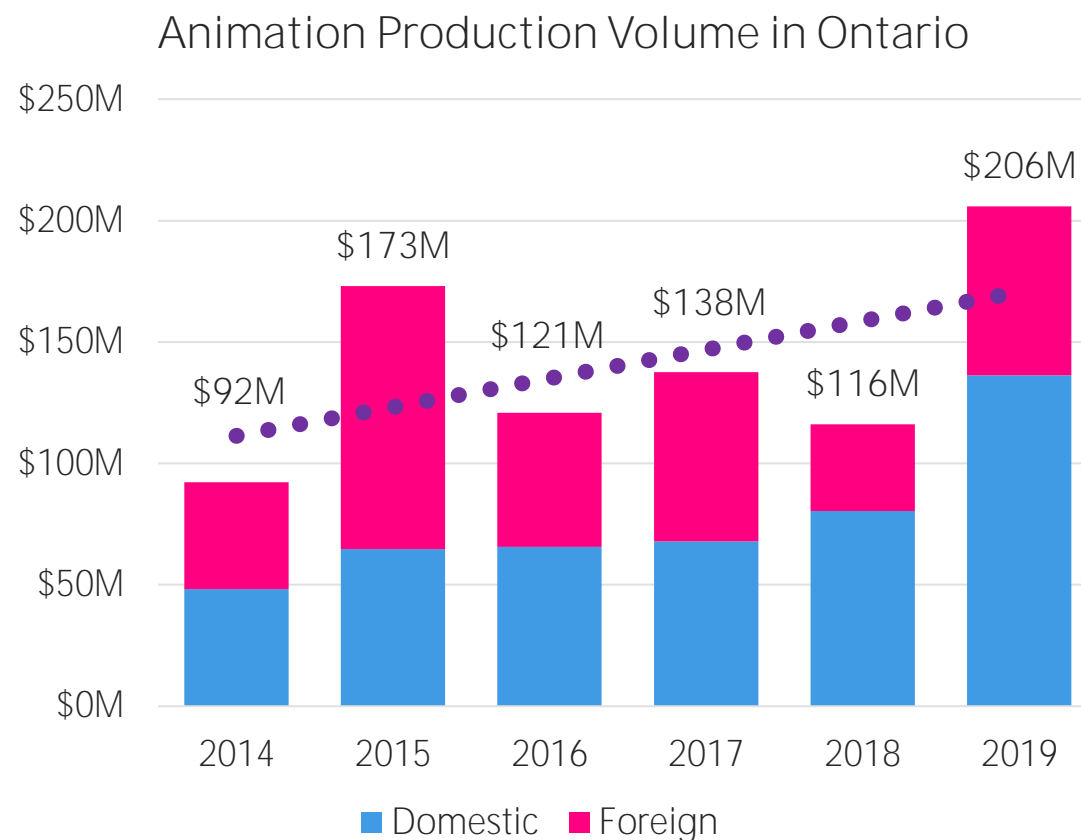
Source: CMPA Profile, estimates based on data collected from CAVCO

1.1 Production volume and trends (4/8) | Demand for animation

- Animation stakeholders are mostly reassuring when they envision the post-COVID world/medium-term future.
- While some anticipate a decline in proprietary work and issues with financing domestic projects, the demand for animated content has never been so strong, boosted by SVOD-commissioned work.
- The increasing volume of Canadian and Ontario-based projects (slides 6 and 8) in recent years could indicate that, despite a possible downturn, proprietary projects could still see a positive trend in the medium-term.
- Stakeholders also anticipate a growing focus on animated series because of the lasting uncertainty around theatrical release and changing consumer behaviour. This trend could be **a blessing for Toronto's production hub, known for expertise in series production.**
- Another issue to monitor in the medium-term is the possible consolidation of platforms – and subsequent decline in demand. It remains to be seen how consolidation may affect platforms which finance animated content, so the impact on the animation production sector may well be moderate.

1.1 Production volume and trends (5/8) | Animation in Ontario

- According to Ontario Creates' tax credit data, animation production volume in Ontario increased at a compound annual growth rate of 17% over the past five years.
- Although 2019 was an exceptional year for domestic and service production, even the linear trend line on the adjacent chart suggests a 9% annual growth rate.
- Though foreign service production has been a significant contributor to overall growth, foreign projects are an intermittent source of production. The difficulty of seeing a trend is compounded because the data source reflects the timing of tax credit approvals and not production spending.
- Domestic producers, on the other hand, are a steady source of growth, notching consistent year-over-year increases from 2014 to 2019 and nearly tripling their total production volume over this five year period.
- Although it is not directly comparable to Ontario Creates' figures (due to the inclusion of VFX) the City of Toronto reports that Animation and VFX production volume in Toronto was \$332M in 2018 and \$369M in 2019.

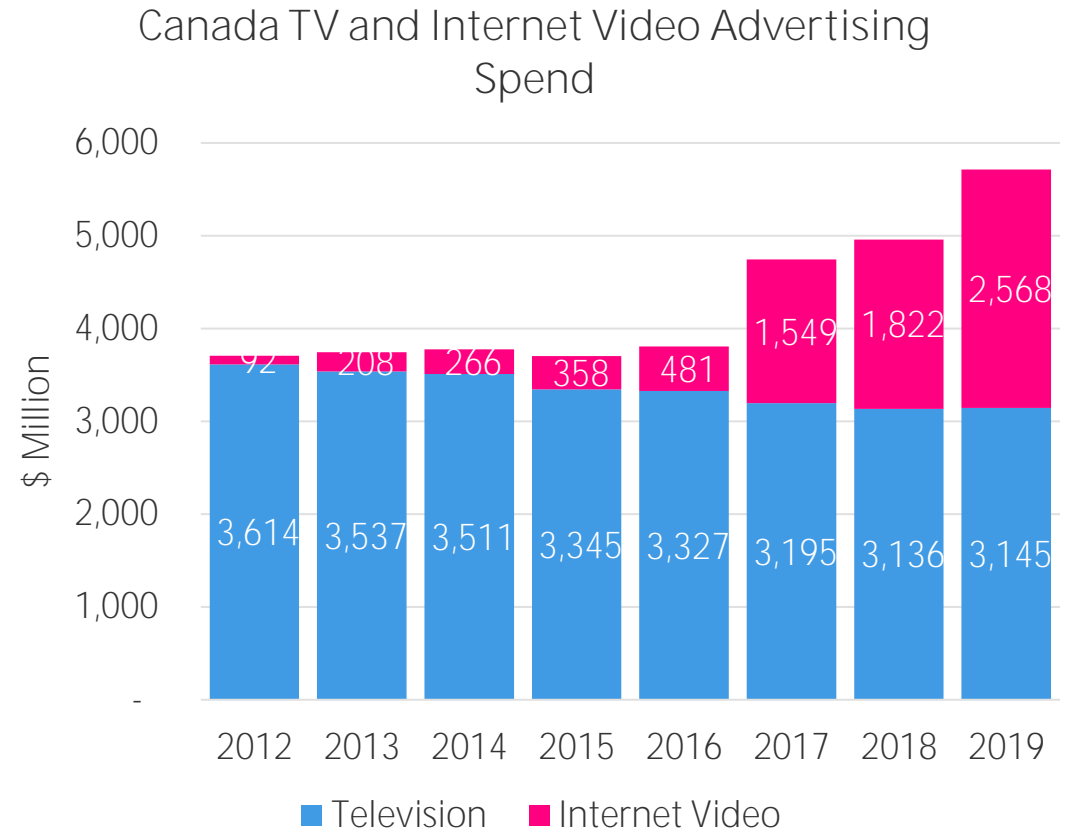


Source: Ontario Creates

Note: The methodology used to assess animation and VFX production volume changed in 2018, so 2018 data is not comparable to previous data in this series. As such, the fuchsia bar should not be interpreted as indicative of a trend.

1.1 Production volume and trends (6/8) | Demand for commercials

- Overall, advertising spending in Canada has slightly increased since 2014. Across all media, the Canadian advertising market reached a total spend of \$15.1 billion in 2019.
- Focusing on relevant channels, the chart on the right illustrates the rapid growth of digital video advertising (61% compound annual growth rate in total ad spend over the 2012-2019 period) and the slow but steady decline of television advertising spend (-2% CAGR).
- Total media buy does not directly correlate to commercial production; however, this data is indicative of a shift to internet advertising in audiovisual formats. The continued rise of SVOD and increasing time spent on social media and video sharing platforms support the observations of commercial producers who have observed an increase in internet video projects and a decline in TV projects.

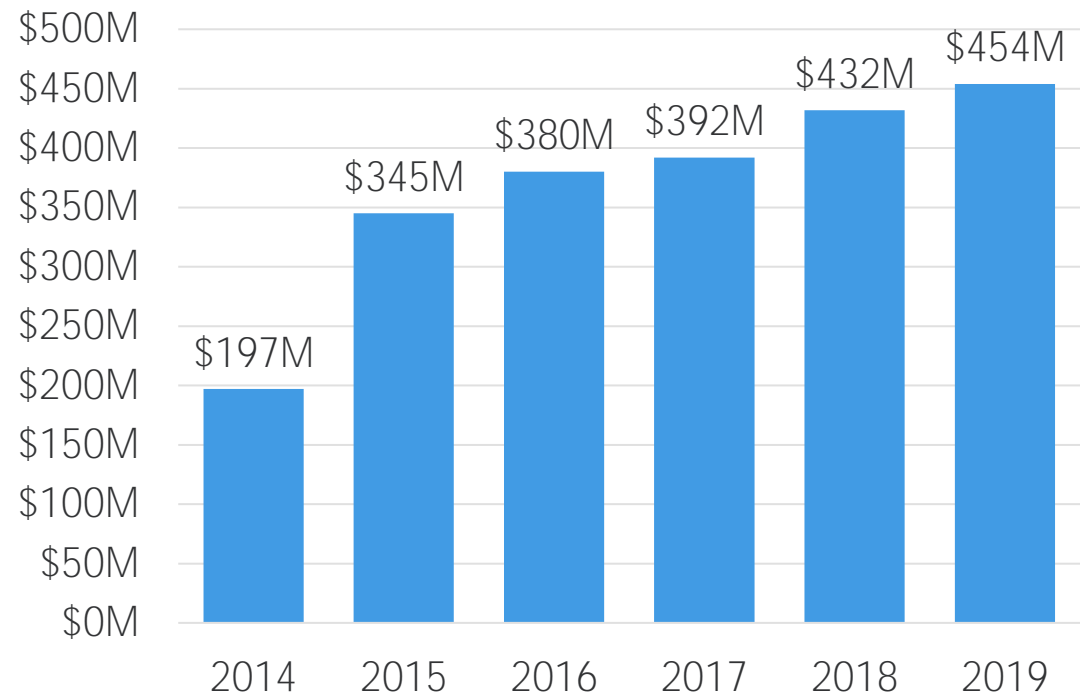


Source: News Media Canada, *Net Advertising Volumes 2019*

1.1 Production volume and trends (7/8) | Commercials in Toronto

- As with the national trend, commercial production volume has posted consistent year-over-year increases in Toronto, and more than doubled in the period from 2014 to 2018.
- Although this data does not distinguish between television and internet video, interviews with commercial producers **confirmed that internet video ("content") production has increased relative to television ("commercials") production in recent years**, and the balance is currently about 30% content and 70% commercials (measured as a percentage of total shoot days) in Toronto.

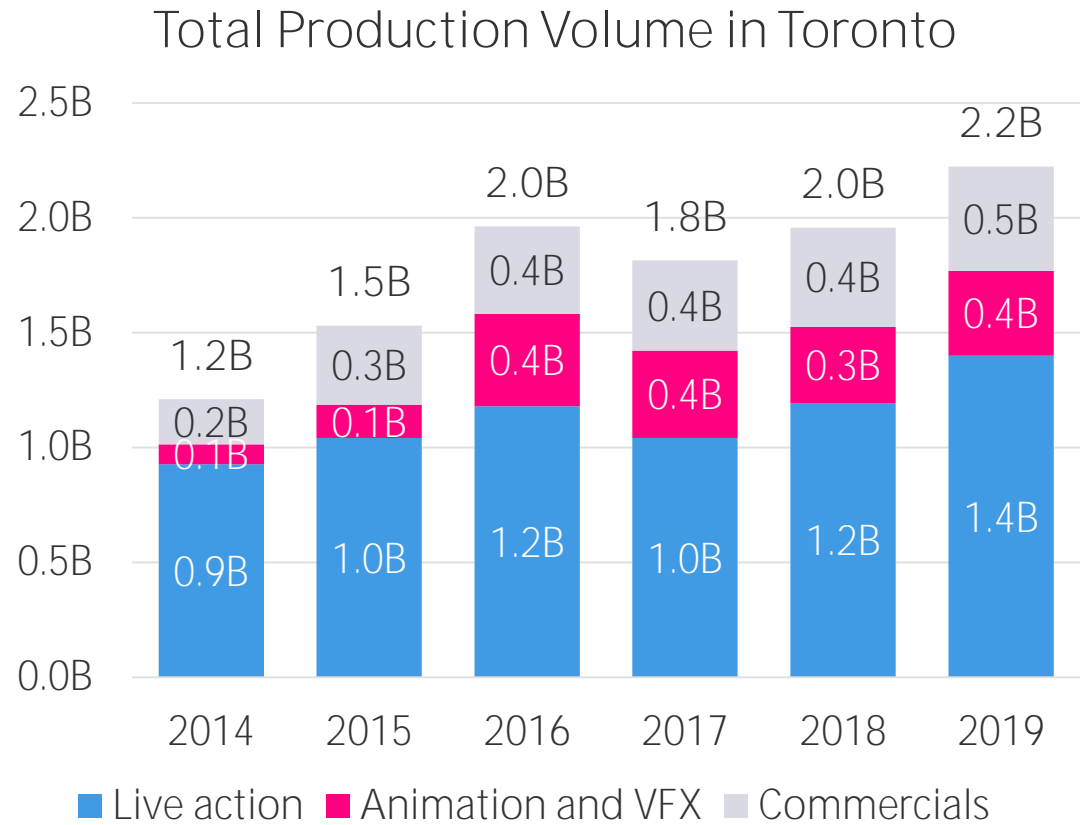
Commercial Production Volume In Toronto



Source: City of Toronto

1.1 Production volume and trends (8/8) | Total Production in Toronto

- Combining data from the previous slides, the following chart summarizes the total production volume in Toronto from 2014 to 2019.



Source: City of Toronto. Totals may not sum due to rounding.

1.2 COVID-19 impact (1/3)

- As live action production in Toronto has resumed, producers and unions have collaborated to adapt to the changes brought on by COVID-19. Though the pandemic has required the adoption of new protocols to manage new risks, the City of Toronto has observed a strong return to production in the Fall of 2020 and is now operating at full capacity again.
- Live action production has been significantly impacted – the cost of PPE, new personnel training, medical grade cleaning equipment, quarantining international cast and crew, frequent testing and production insurance, etc. can increase film/TV production costs from 10 to 25%*, and data from the Association of Canadian Commercial Production (ACCP) suggests that the cost of commercial production is about 12% higher due to COVID.
- As noted in the previous section, there has been increased interest in animation intended for adult audiences and VFX businesses are anticipating a heavy workload as live-action producers continue to ramp up and rely on visual effects to circumvent the need for large crowd scenes.
- Looming VFX backlog:
 - With filming commencing on many delayed productions in the summer/fall of 2020, the demand for the VFX work is anticipated to increase and studios will need to plan for increased capacity to address the backlog.

1.2 COVID-19 impact (2/3)

- Increased need for virtual production/VFX:
 - Limitations on travel, crowd and intimate scenes have only bolstered the existing trend toward heightened use of VFX/virtual production in filmmaking (as outlined further in Subsection 3.1), increasing the scope of work for VFX production houses on their current and forthcoming projects.
- Animated projects in lieu of live action:
 - **Beyond children's programming, there is a broader increase demand for animated content** across all genres, as animated content production has not been affected by COVID restrictions or risks. This asymmetry has led to adult-oriented projects being fast-tracked for production.

1.2 COVID-19 impact (3/3)

- Working remotely (animation and VFX):
 - By working remotely some of the collaborative spirit that is integral to VFX and animation **work is hampered, as artists can not as easily share ideas and view each other's work.** Although it is a challenge, many studios have found solutions to this issue by communicating frequently and finding creative solutions to encourage collaboration.
 - In some cases, productivity is up, which can be attributed to time saved from not commuting and other factors. However, anecdotal insights indicate that overtime work has likely increased while artists are working independently at home, as there is a lack of work-life balance and separation from the work environment. Though this effect is beneficial for the health of companies in the short-term, prolonged long hours and the added stress of household distractions may contribute to increased levels of burn out and low morale.
 - Training new hires has become increasingly challenging. Under typical circumstances, most on-the-job training and learning opportunities occur by working side by side with senior talent and by being immersed in the communal office environment. With the work from home/virtual studio model, extra time and management resources have had to be utilized to support new hires and emerging talent to ensure they are properly trained and integrated.

1.3 Employment summary (1/9) | Live action – Days worked

- Nordicity estimates that 1.5 million days were worked on live action film and TV projects in Toronto in 2019. This table breaks out days worked (in thousands) by occupational category and production type. Days worked were calculated by dividing estimated labour spend in each occupation by the ratio of gross payroll to days worked in each occupational category, as reported in union/guild data.

Occupational category	Days worked (thousands)				
	Service		Domestic		Total
	Features	Television	Features	Television	
Accounting	10	42	3	22	77
Art	11	47	4	24	86
Asst. Directors	8	32	2	17	59
Camera/video/publicity	8	20	4	8	40
Construction	1	155	0	49	205
Costume	2	36	1	14	52
Directors	1	3	0	1	5
Editing/Post-production	33	87	15	20	154
Grip/Electrical/Lighting	5	37	2	21	65
Hair/Make-up	2	9	1	5	16
Location	8	33	3	17	61
Performers	8	63	3	28	103
Production	8	33	3	17	60
Props/Sets/Craft/Labour	10	134	3	56	204
Sound	3	15	2	3	23
Special effects	3	14	1	7	25
Transportation	12	102	5	20	139
Writing/Script/Continuity	16	57	6	17	96
Total days worked	146	919	57	345	1,467

These estimates are based on production volume data, detailed film budgets and aggregated payroll and membership data provided by unions and guilds. This table includes estimates of union and non-union employment, and excludes union employment on projects that are not live action film/TV. Totals may not sum due to rounding.

1.3 Employment summary (2/9) | Live action – FTEs

- Nordicity estimates that 13,500 direct FTEs were employed on live action film and TV projects in Toronto in 2019. This table breaks out FTEs by occupational category and production type. FTEs were calculated by dividing direct labour income by the national average cost per FTE, as reported in CMPA's *Profile: Economic Report On The Screen-based Media Production Industry In Canada*. FTEs were then allocated to each occupation in proportion to days worked.

	Direct FTEs				
Occupational category	Service		Domestic		Total
	Features	Television	Features	Television	
Accounting	90	390	30	200	700
Art	100	430	30	220	790
Asst. Directors	70	300	20	150	540
Camera/video/publicity	70	190	40	70	360
Construction	10	1,430	<5	450	1,890
Costume	20	330	10	130	480
Directors	10	20	<5	10	40
Editing/Post-production	300	800	140	180	1,420
Grip/Electrical/Lighting	40	340	20	190	590
Hair/Make-up	10	80	10	50	150
Location	70	310	20	160	560
Performers	80	580	30	260	950
Production	70	300	20	160	550
Props/Sets/Craft/Labour	90	1,240	30	510	1,870
Sound	20	140	20	30	210
Special effects	30	130	10	60	230
Transportation	110	940	40	190	1,280
Writing/Script/Continuity	140	530	60	160	880
Total FTEs	1,350	8,460	520	3,170	13,500

These estimates are based on production volume data, detailed film budgets and aggregated payroll and membership data provided by unions and guilds. This table includes estimates of union and non-union employment, and excludes union employment on projects that are not live action film/TV. Totals may not sum due to rounding.

1.3 Employment summary (3/9) | Live action – Individual workers

- Nordicity estimates that 25,400 individual workers (measured in union member equivalents) worked on live action film and TV projects in Toronto in 2019. The following table breaks out individual workers by occupational category and production type. In this table, individual workers were estimated using the ratio of union members to days worked in each occupational category.

Occupational category	Individual workers				
	Service		Domestic		Total
	Features	Television	Features	Television	
Accounting	<50	200	<50	100	400
Art	100	300	<50	100	500
Asst. Directors	100	300	<50	100	500
Camera/video/publicity	100	300	100	100	700
Construction	<50	1,600	<50	500	2,200
Costume	<50	500	<50	200	700
Directors	<50	200	<50	100	400
Editing/Post-production	200	600	100	100	1,000
Grip/Electrical/Lighting	100	500	<50	300	1,000
Hair/Make-up	<50	200	<50	100	300
Location	<50	200	<50	100	300
Performers	800	6,100	300	2,700	9,900
Production	100	300	<50	100	500
Props/Sets/Craft/Labour	100	1,700	<50	700	2,600
Sound	100	300	<50	100	400
Special effects	100	400	<50	200	700
Transportation	200	1,400	100	300	1,800
Writing/Script/Continuity	200	900	100	300	1,500
Total individual workers	2,300	15,900	900	6,300	25,400

These estimates are based on production volume data, detailed film budgets and aggregated payroll and membership data provided by unions and guilds. This table includes estimates of union and non-union employment, and excludes union employment on projects that are not live action film/TV. Totals may not sum due to rounding.

1.3 Employment summary (4/9) | Commercials – Days worked

- Nordicity estimates that 316,000 days were worked on commercial production projects in Toronto in 2019. This table breaks out days worked (in thousands) by occupational category and production type. These estimates were prepared based on sample budget data prepared by the Association of Canadian Commercial Production (ACCP), which included information about wages and days worked by occupation on a typical commercial production of each type.

Occupational category	Days worked (thousands)		Total
	Commercials (Television)	Content (Internet Video)	
Art	10	<0.5	10
Asst. Directors	5	1	6
Camera/video	12	4	16
Costume	10	3	13
Directors	2	1	2
Editing/Post-production	45	15	60
Grip/Electrical/Lighting	18	6	24
Hair/Make-up	3	1	4
Location	13	4	17
Performers	20	4	25
Production	48	16	64
Props/Sets/Craft/Labour	41	16	58
Sound	3	1	5
Special effects	7	2	10
Transportation (Winnebago Drivers)	2	<0.5	2
Writing/Script/Continuity	2	<0.5	2
Total days worked	242	74	316

These estimates are based on production volume data, detailed commercial production budgets and daily rates provided by the Association of Canadian Commercial Production (ACCP). Performer estimates are based on data from ACTRA. Editing/Post-production and Special effects were estimated using the ratio of days worked between each category and Camera/video in film/TV.. Totals may not sum due to rounding.

1.3 Employment summary (5/9) | Commercials – FTEs

- Nordicity estimates that 3,050 direct FTEs were employed on commercial production projects in Toronto in 2019. This table breaks out direct FTEs by occupational category and production type. The estimates in this table use the ratio of FTEs to individual workers observed in live action film/TV production to estimate the number of direct FTEs employed in commercial production.

Occupational category	Direct FTEs		
	Commercials (Television)	Content (Internet Video)	Total
Art	100	<5	100
Asst. Directors	50	10	60
Camera/video	110	40	150
Costume	100	30	120
Directors	20	10	20
Editing/Post-production	446	136	583
Grip/Electrical/Lighting	180	50	230
Hair/Make-up	30	10	40
Location	130	30	160
Performers	200	40	240
Production	470	140	610
Props/Sets/Craft/Labour	410	150	560
Sound	30	10	50
Special effects	72	22	94
Transportation (Winnebago Drivers)	20	<5	20
Writing/Script/Continuity	20	<5	20
Total FTEs	2,390	670	3,050

These estimates are based on production volume data, detailed commercial production budgets and daily rates provided by the Association of Canadian Commercial Production (ACCP). Performer estimates are based on data from ACTRA. Editing/Post-production and Special effects were estimated using the ratio of days worked between each category and Camera/video in film/TV.. Totals may not sum due to rounding.

1.3 Employment summary (6/9) | Commercials – Individual workers

- Nordicity estimates that 5,730 individual workers worked on commercial production projects in Toronto in 2019. This table breaks out individual workers by occupational category and production type. The estimates presented here are based on the ratio of individual workers to days worked in each occupational category observed in live action film/TV production.

Occupational category	Individual workers		
	Commercials (Television)	Content (Internet Video)	Total
Art	60	<5	60
Asst. Directors	40	10	50
Camera/video	190	70	260
Costume	140	40	180
Directors	130	60	190
Editing/Post-production	290	100	390
Grip/Electrical/Lighting	270	80	350
Hair/Make-up	70	20	90
Location	70	20	90
Performers	1,950	420	2,370
Production	410	130	550
Props/Sets/Craft/Labour	540	210	750
Sound	60	30	90
Special effects	200	70	270
Transportation (Winnebago Drivers)	20	<5	20
Writing/Script/Continuity	30	<5	30
Total individual workers	4,480	1,250	5,730

These estimates are based on production volume data, detailed commercial production budgets and daily rates provided by the Association of Canadian Commercial Production (ACCP). Performer estimates are based on data from ACTRA. Editing/Post-production and Special effects were estimated using the ratio of days worked between each category and Camera/video in film/TV.. Totals may not sum due to rounding.

1.3 Employment summary (7/9) | Animation – FTEs and workers

- Nordicity estimates that 1,970 direct FTEs worked on animation projects in Toronto in 2019. The following table breaks out individual workers by occupational category.
- **Based on ratios observed in Nordicity's previous research for CASO, this workforce corresponds to 2,200 individual workers.** There is insufficient data to break out individual workers by occupation.

Occupational category	Direct FTEs
	Total
Animation	450
Assets	370
Compositing	110
Design	130
Editorial/post	60
Layout	80
Lighting/rendering	170
Production	180
Storyboarding	150
Supervision	120
Tech Support	40
VFX	110
Total FTEs	1,970

These estimates are based on production volume data, detailed budgets and aggregated payroll and employment data provided by animation companies, and CASO and Nordicity's report, Business Intelligence: Ontario's Computer Animation and Visual Effects Companies, 2018. This table is based on total production spending in Toronto and represents an estimate of employment in each occupational category. Totals may not sum due to rounding.

1.3 Employment summary (8/9) | VFX – FTEs and workers

- Nordicity estimates that 2,230 direct FTEs worked on VFX projects in Toronto in 2019. The following table breaks out individual workers by occupational category.
- **Based on ratios observed in Nordicity's previous research for CASO, this workforce corresponds to 2,500 individual workers.** There is insufficient data to break out individual workers by occupation.

Occupational category	Direct FTEs
	Total
Animation	150
Assets	280
Compositing	440
Design	100
Editorial	90
Layout/tracking	130
Lighting/rendering	270
Production	270
R&D	80
Supervision	140
Tech Support	140
VFX	160
Total FTEs	2,230

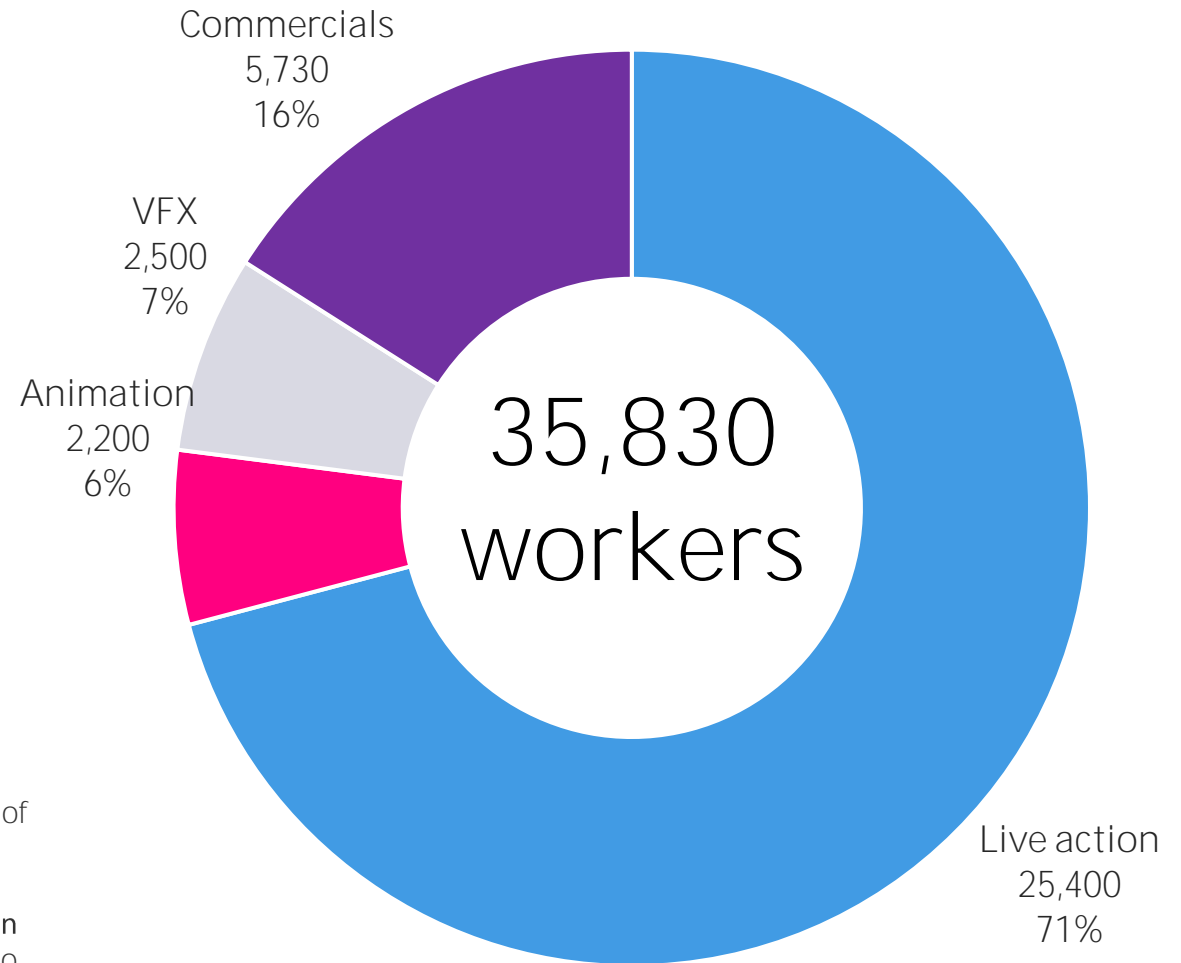
These estimates are based on production volume data, detailed budgets and aggregated payroll and employment data provided by VFX companies, and CASO and Nordicity's report, Business Intelligence: Ontario's Computer Animation and Visual Effects Companies, 2018. This table is based on total production spending in Toronto and represents an estimate of employment in each occupational category. Totals may not sum due to rounding.

1.3 Employment summary (9/9) | Total individual workers

- As illustrated in the adjacent chart, Nordicity estimates that there was a grand total of 35,830 individual workers **active in Toronto's screen industry** in 2019.
- This figure corresponds to an estimated 20,770 direct FTEs **working in Toronto's screen industry**, as summarized in the table below.

Type of production	Individual workers	Direct FTEs
Live action	25,400	13,500
Animation	2,200	1,990
VFX	2,500	2,230
Commercials	5,730	3,050
Total	35,830	20,770

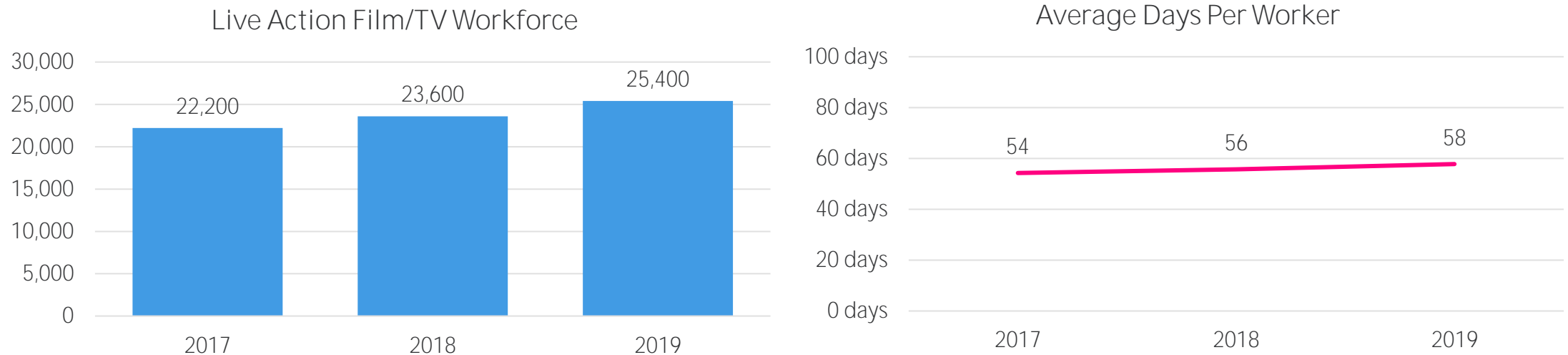
Note: Measured in terms of direct FTEs, Toronto is estimated to employ about 72% of the total animation and VFX workforce in Ontario, when this figure is compared to the results presented in **CASO and Nordicity's report, *Business Intelligence: Ontario's Computer Animation and Visual Effects Companies, 2018***. **Toronto's film and television production workforce represents 46% of the total employment in Ontario relative to results presented in CMPA and Nordicity's report, *Profile: Economic Report On The Screen-based Media Production Industry In Canada***. This figure is proportional to Toronto's share of the total film/TV production direct labour income in Ontario.



Note that the live action segment includes roles in post-production like editing.

1.4 Employment trends (1/5) | Live action – Growth and days worked

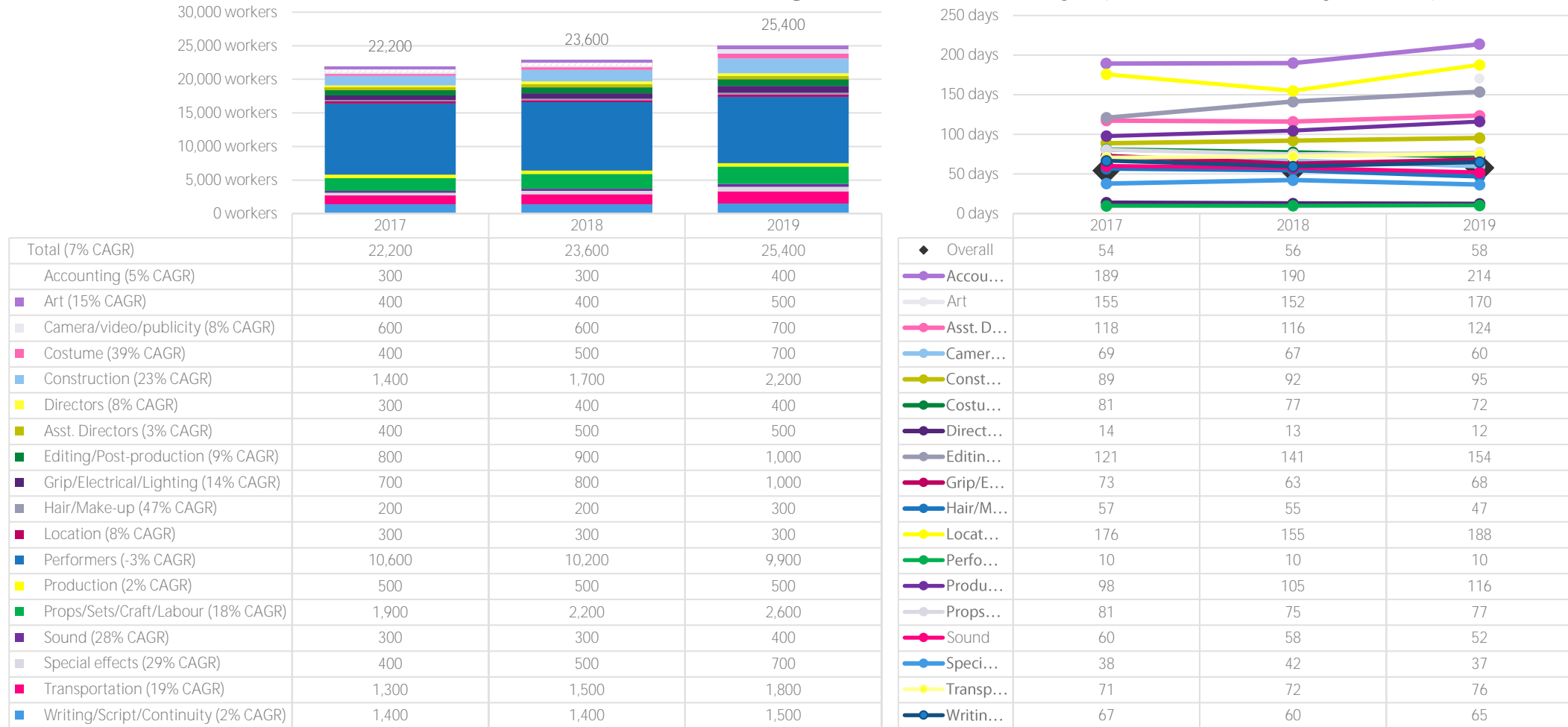
- This slide (and the following four) discuss Nordicity's analysis of recent growth in film/TV workers and the average days per worker.
- From 2017 to 2019, Nordicity estimates that the Toronto film/TV workforce grew at a compound annual growth rate (CAGR) of 7% (measured in union member equivalents). In other words, union memberships and non-union workers employed in live action production increased by 7% each year.
- Alongside this strong growth rate, the average days per worker has slightly increased, indicating that the growth of the workforce is well balanced with the demand for production workers. In other words, the unions/guilds have, overall, been growing their membership in lockstep with industry demand.



These estimates are based on production volume data, detailed film budgets and aggregated payroll and membership data provided by unions and guilds. This table includes estimates of union and non-union employment, and excludes union employment on projects that are not live action film/TV.

1.4 Employment trends (2/5) | Live action – Growth and days worked

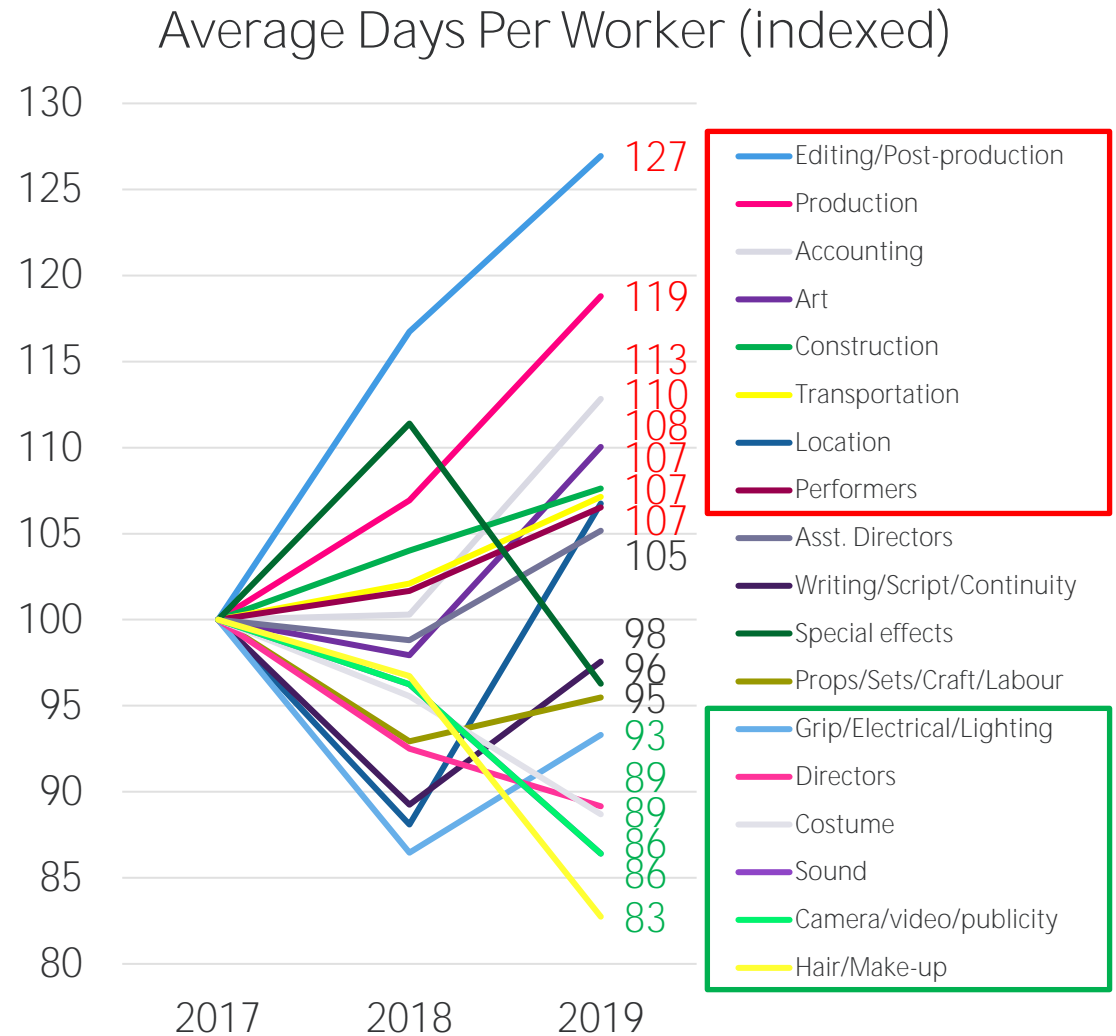
These charts show number of workers and average number of days per worker, by occupation.



These estimates are based on production volume data, detailed film budgets and aggregated payroll and membership data provided by unions and guilds. This table includes estimates of union and non-union employment, and excludes union employment on projects that are not live action film/TV. Totals may not sum due to rounding.

1.4 Employment trends (3/5) | Live action – Supply/demand

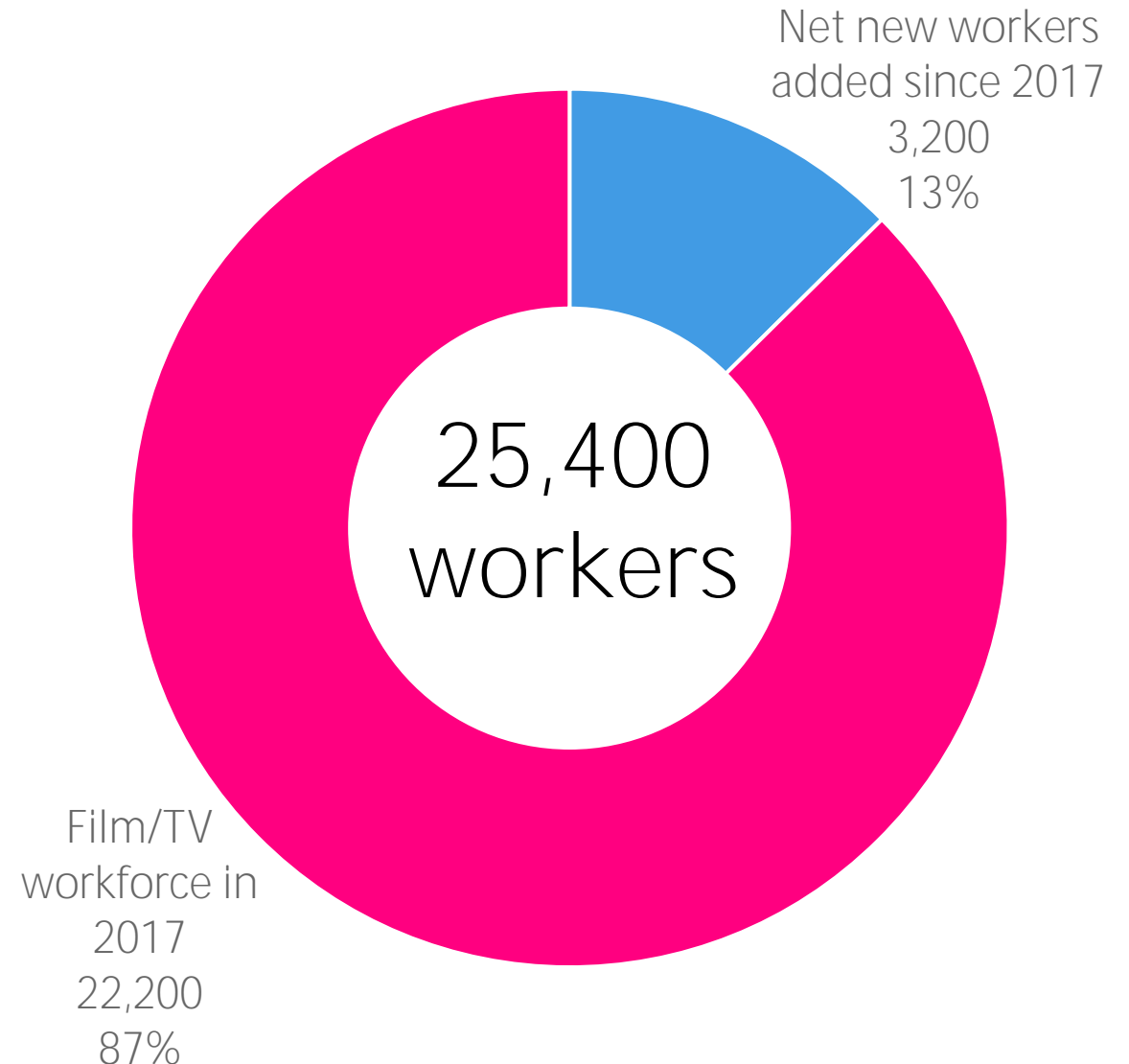
- This chart isolates changes in the average days per worker. Average days worked for each occupation were indexed to a value of 100 in 2017 to more clearly show the change for each occupation in 2018 and 2019.
- The legend ranks occupations by the final indexed value in 2019. The red box encloses occupations that have exhibited more than a 5% increase in days per worker from 2017 to 2019, and the green box corresponds to a decrease exceeding 5%.
- An increasing value means that demand for an occupation is increasing faster than the supply of workers. Note that these values do not account for an **“ideal” number of days worked, as this will vary** from occupation to occupation and depends on how well supply was matched to demand in 2017. This chart simply illustrates how the balance between supply and demand has changed for each occupation from 2017 to 2019.



1.4 Employment trends (4/5) | Live action – Growth/experience

- Although there are some mismatches between supply and demand for certain occupations (as shown in the previous slide), overall, the unions have been growing their membership at a rate that is balanced with the growth in production volume.
- However, Nordicity estimates that about one **eighth (13%) of Toronto's film/TV workforce had** less than two years of experience in 2019, as illustrated in the adjacent chart.
- In interviews, stakeholders were unanimous in recognizing that there is a shortage of more experienced workers in **Toronto's production** workforce.

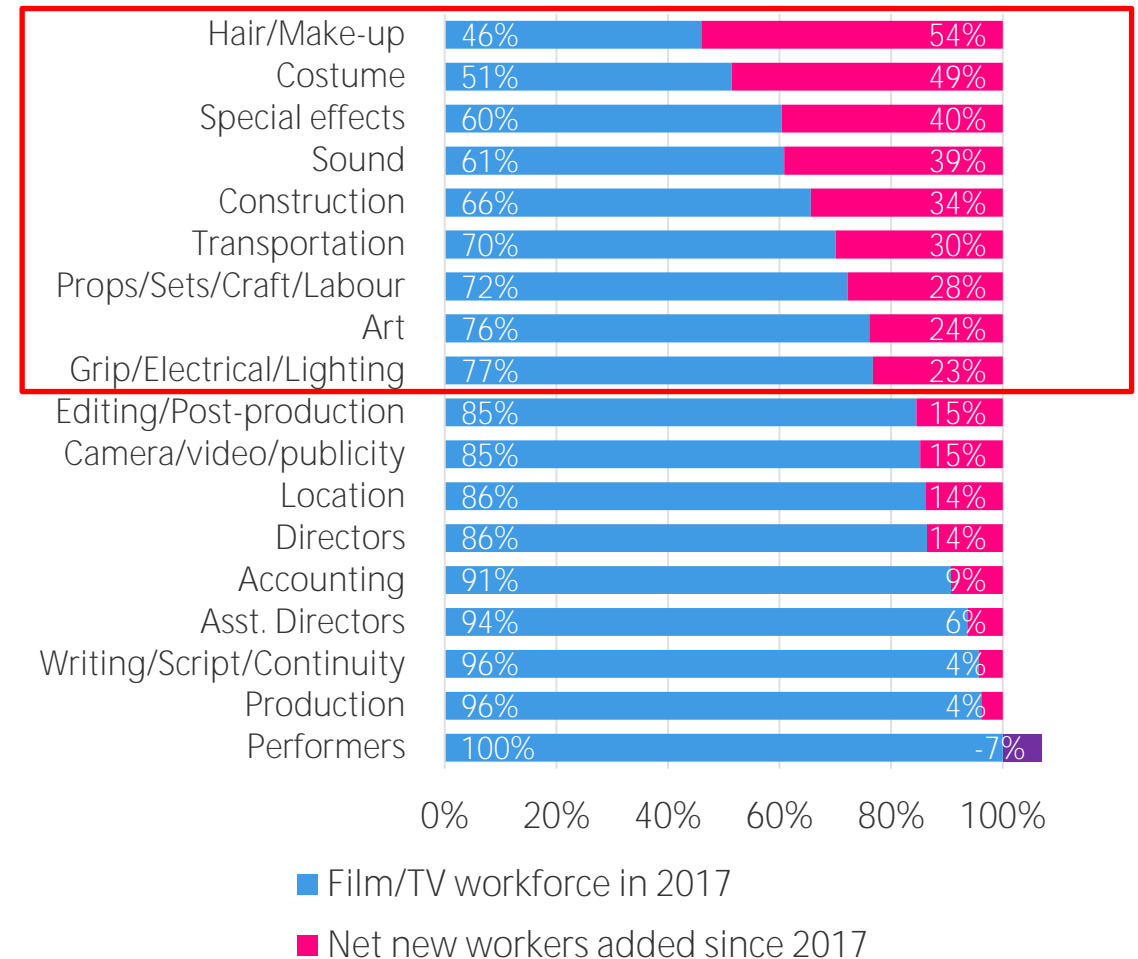
Note: This figure likely understates Toronto's shortage of experience, as it does not account for workers that retired or left the industry and were replaced by new workers since 2017. Equivalent data is not available for commercials, animation or VFX workers.



1.4 Employment trends (5/5) | Live action – Growth/experience

- The adjacent chart ranks occupations by the estimated percentage of the 2019 workforce comprised of net new workers added since 2017. In other words, these occupations have the highest percentage of new/inexperienced workers.
- Whereas an increasing number of average days per worker indicates a shortage of workers (and a need for recruitment), a high percentage of new workers added suggests that there may be an imbalance between new entrants and workers experienced enough to fill supervisory and mentoring roles.
- The red box encloses occupations for which more than 20% of the 2019 workforce had two or fewer years of experience. These occupations align with the roles that producers identified as being the most difficult to find experienced workers in Toronto (as outlined on the following slide).
- Performers were the only occupation for which the number of workers declined in this period (by 7%).

Net workers added 2017-19, by occupation



1.5 Employment shortages (1/4) | Live action

- The specific production job types most in demand in live action (based on the frequency they were mentioned in interviews) are:
 1. Production accountants: Interviewees emphasized the difficulty in finding production accountants, in part because crew sizes have drastically increased, and more accountants are now required on a production.
 2. Drivers (transportation): It is difficult for productions to acquire the right amount of qualified drivers; many interviewees recalled certain productions which requested an amount and received only half from dispatchers; unions confirmed this practice.
 3. Art department: Interviewees have observed a shortage in art department labour, in part because large series demand more from these workers.
 4. Grips: Interviewees expressed a need for more experience and training.
 5. General construction: Retention is especially difficult because wages are not as competitive as housing/general construction industry.
 6. Hair/makeup: It is difficult to find qualified professionals, because the pay for salon or freelance work is similar to film/TV production pay.

1.5 Employment shortages (2/4) | Animation/VFX

- The specific production job types most in demand in animation and VFX (based on the frequency they were mentioned in interviews) are:
 1. IT-related jobs (TDs): With a high reliance on data management, an ever-evolving technological landscape, and no clear pathways for IT-focused students to seek work in animation/VFX, these specialized workers are difficult to find, expensive to train, and subject to high competition among companies once they have developed experience.
 2. Creative roles with highly technical skill sets: Preparing 3D models for motion, jobs like riggers, groomers and physics-based modellers require highly technical skills with an understanding of biology, anatomy and physics. As with TDs, these occupations require extensive on-the-job experience and talent is very expensive to develop.
 3. Production accountants: With parallel skill requirements to that of live action, production accountants are also in high demand among animation studios.
 4. Animators, 3D modellers, texture artists: In addition to the technically demanding jobs noted above, there is shortage of virtually all animation and VFX workers.
 5. On set VFX producers/supervisors: One interviewee noted that there is a lack of formal training pathways for this role.

1.5 Employment shortages (3/4) | Post-production

- The specific production job types most in demand in post-production (based on the frequency they were mentioned in interviews) are:
 1. Experienced post-production producers/supervisors: There is a lack of workers who possess both the creative and management skills necessary for these positions. They requires broad skillsets, significant experience, and there is not a clear educational pathway into these roles.
 2. Colourists: It is difficult to find talent because this job requires a lot of experience. Additionally, the amount of junior talent is limited – interviewees noted that many technical post-production jobs face a short supply of entry-level workers due to a lack of awareness.
 3. Sound mixers: This job requires linking technical knowledge with audio manipulation. As a result, the techniques for mixing on audiovisual production are specialized and rely heavily on hands-on experience.

1.5 Employment shortages (4/4) | Summary Scorecard

The following table summarizes the findings presented throughout the preceding sections. Note that interview findings were generally consistent with quantitative analysis.

Occupational category	New Workers		Experienced Workers	
	Analysis of change in avg. days worked	Interview findings	Analysis of net new workers 2017-19	Interview findings
Accounting	Highest Demand	Highest Demand	-	-
Art	High Demand	Highest Demand	High Demand	-
Asst. Directors	-	-	-	-
Camera/video/publicity	-	-	-	-
Construction	High Demand	High Demand	High Demand	High Demand
Costume	-	-	Highest Demand	-
Directors	-	-	-	-
Editing/Post-production	Highest Demand	-	-	Highest Demand
Grip/Electrical/Lighting	-	High Demand	High Demand	Highest Demand
Hair/Make-up	-	-	Highest Demand	High Demand
Location	High Demand	-	-	-
Performers	-	-	-	-
Production	Highest Demand	-	-	-
Props/Sets/Craft/Labour	-	-	High Demand	-
Sound	-	-	Highest Demand	High Demand
Special effects	-	-	Highest Demand	Highest Demand
Transportation	High Demand	Highest Demand	High Demand	-
Writing/Script/Continuity	-	-	-	-

1.6 Soundstage capacity (1/5) – Soundstage classifications

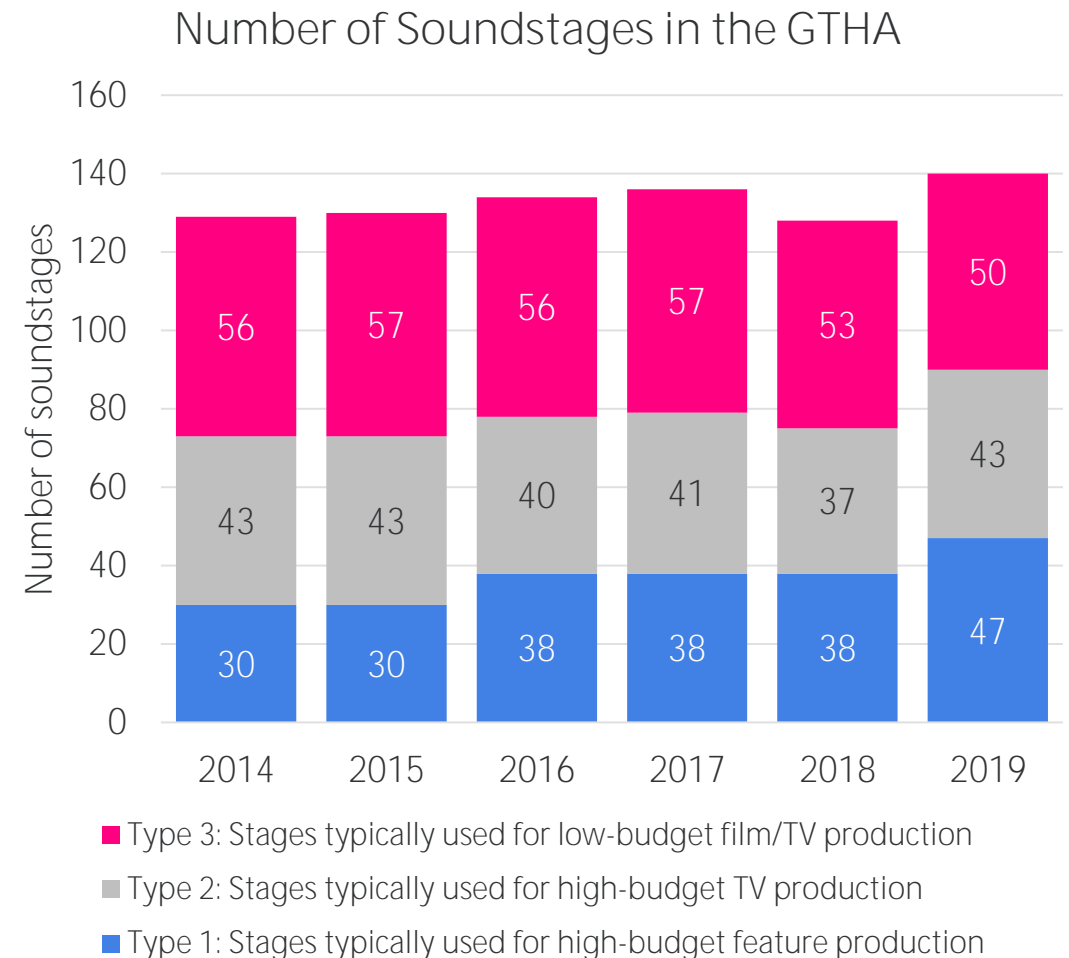
- In order to understand the relationship between production volume (in dollars) and soundstage capacity utilization (as a percentage of available stage-years), Nordicity most recently collected data from studios about the types of production renting their facilities in 2019.
- Nordicity then conducted an analysis of how selected physical characteristics of soundstages correlated to utilization by different types of production (domestic/foreign and film/TV). This analysis culminated in a classification of soundstages based on characteristics that had the strongest correlation to each type of production. The following table describes each classification and shows the estimated mix of production volume hosted in each type of facility.
- The soundstage types yielded by this analysis do not imply a hierarchy or value judgement about the quality or value of production that is typically hosted at each type of facility or the facilities themselves. This analysis simply to recognizes that different types of production have specific infrastructure requirements, and addresses the need to associate production volume with identifiable types of soundstages.

Studio type	Physical characteristics of studio type	Current supply of soundstages	Production volume mix		
			Foreign film	Foreign TV	Domestic film/TV
Type 1	<ul style="list-style-type: none"> ▪ Average soundstage area larger than median (19k sqft.) ▪ Tallest soundstage higher than median (22ft) ▪ Significant office/workshop space 	47	14%	86%	0%
Type 2	<ul style="list-style-type: none"> ▪ Average soundstage height taller than median (22ft) ▪ Studio at least one of: office space, workshop(s), and/or digital facilities 	43	19%	68%	12%
Type 3	<ul style="list-style-type: none"> ▪ Any studios which do not meet the criteria to be classified as Type 1 or Type 2 ▪ Note that this category includes unconverted warehouses 	50	1%	46%	53%
Overall	<ul style="list-style-type: none"> ▪ All soundstages in the GTHA 	140	10%	65%	25%

Note that domestic film/TV is aggregated in this calculation because of mathematical limitations.

1.6 Soundstage capacity (2/5) – Number of soundstages

- **Since 2014, Toronto's soundstage capacity** has evolved to meet extraordinary growth in demand.
- In particular, large full-featured stages (which are most often used for high-budget feature film/TV production) have increased in number by over 50%.
- At the same time, stages which tend to be used by productions with lower budgets have modestly declined.



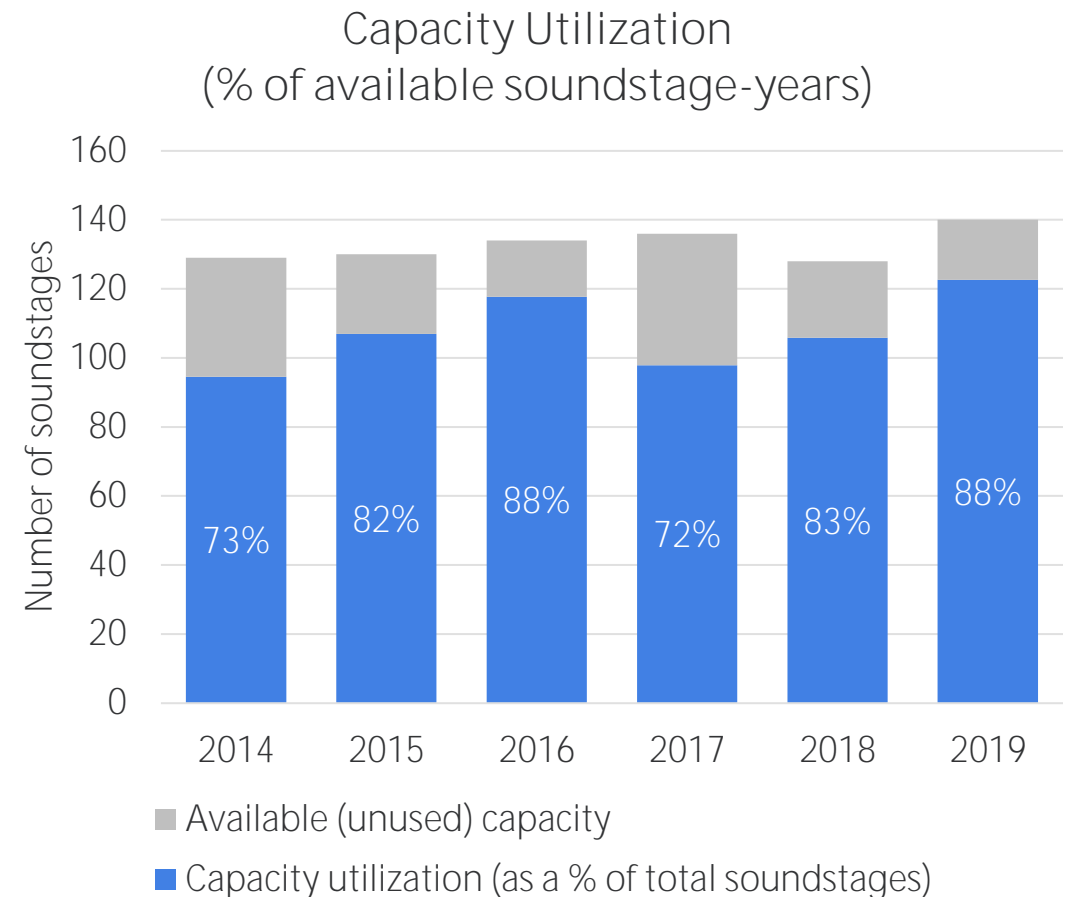
1.6 Soundstage capacity (3/5) – Measuring capacity utilization

- **Nordicity measures soundstage capacity utilization by collecting studio operators' self-reported occupancy rates.** As a rule of thumb, Nordicity understands 85% to be the threshold for a balanced but fully occupied market.
- In this interpretation:
 - 85% is the threshold at which marginal new projects will seriously consider moving production to other cities before they settle for whatever space might still be available in Toronto.
 - By extension, utilization rates over 85% mean that producers are likely to be squeezing their projects into less-than-ideal spaces and may have to adjust their timelines to fit the availability of space.
- Nordicity established this threshold based on figures observed in 2014 and 2016, both of which were notable for having strained soundstage capacity in news coverage.

1.6 Soundstage capacity (4/5) – Capacity utilization in the GTHA

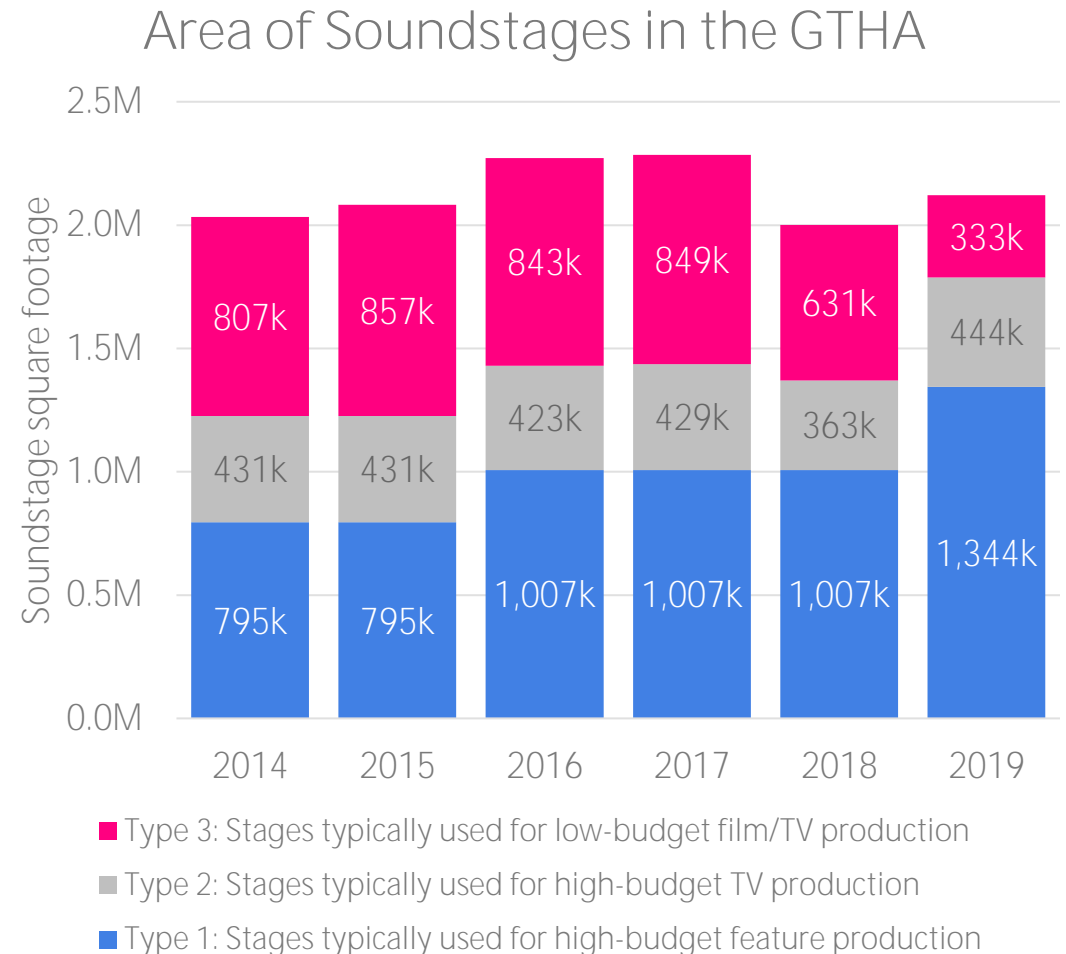
- Nordicity estimates that soundstage capacity utilization reached 88% of available soundstages in 2019. The adjacent chart shows capacity utilization from 2014 to 2019. This observation was confirmed in interviews by soundstage operators, who experienced an exceptionally busy year in 2019.
- As described on the previous slide, Nordicity interprets a utilization rate of 85% as being at full capacity, so utilization in 2019 was at an extremely high level. Further, this level was reached *despite the addition of new capacity in 2019*.

This estimate is based on research Nordicity conducted in 2020 focusing on soundstage capacity utilization across Canada in 2019. Utilization rates in 2014, 2016 and 2019 are based on interviews with soundstage operators; figures for other years are estimated based on production volume and the supply of stages.



1.6 Soundstage capacity (5/5) – Area of soundstages

- The square footage of Type 1 stages has grown faster than the number of stages added, meaning that new stages are larger than existing facilities of this type, on average.
- Though the number of soundstages suitable for low-budget production declined by only 11% from 2014 to 2019, the square footage available declined by 59%. In combination, these findings show that net closures tended, on average, to be of the larger soundstages in the Type 3 category.
- The decline in square footage suitable for projects that are typically lower budget parallels the trend observed in domestic production volume, which exhibited a decline in Toronto in 2019 (though overall, domestic production increased in Ontario in 2019).



1.7 Relationship between production volume, employment, and soundstage area (1/3)

- The amount of production and employment associated with an additional million square feet of soundstage space varies depending on the type of soundstages added. This analysis assumes that demand will support utilization rates comparable to present levels when the new space is brought online. Production and employment allocated to each stage type are based on capacity utilization data observed in Toronto in 2016. The following table breaks out impacts for several types of soundstages, as defined in the final column.
- Note that the impact of one million sq. ft. of large, tall Type 1 stages represents fewer, larger stages that would provide space for fewer (though likely larger) film/TV crews than it would for Type 2 or 3 stages. This table lists the specifications associated with one million sq. ft. of each type, including the current mix which was featured on the previous slide.

Production Volume and Employment Impact of 1M sq. ft. of New Studio Space

Studio type	Current number of stages	Average area per stage (sq. ft.)	Number of stages per million sq. ft.	Overall % increase in the number of GTHA soundstages	Estimated production volume that could be serviced by new stages	New workers required to service demand
Type 1	47	28,606	35	25%	\$266M	5.0k
Type 2	43	10,323	97	69%	\$933M	17.8k
Type 3	50	6,651	150	107%	\$1,568M	32.3k
Current mix	140	15,149	66	47%	\$610M	12.0k

1.7 Relationship between production volume, employment, and soundstage area (2/3)

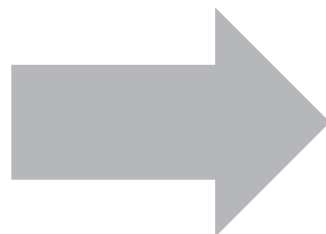
- The following table breaks out the headcount of incremental new workers required to support production associated with one million new square feet of soundstage space, as outlined on the previous slide. Worker counts are based on the ratio of union member equivalents to the number of days worked. The numbers in brackets express the number of new workers as a percent increase from the current number of workers in each occupational category in Toronto.

Occupational category	Incremental new workers (% increase) required to support production at:			
	One million sq. ft. of Type 1 stages (35 stages x 28,606 sq. ft.)	One million sq. ft. of Type 2 stages (97 stages x 10,323 sq. ft.)	One million sq. ft. of Type 3 stages (150 stages x 6,651 sq. ft.)	One million sq. ft. of stages identical to the current mix in Toronto (66 stages x 15,149 sq. ft.)
Accounting	100 (+19%)	300 (+71%)	500 (+131%)	200 (+47%)
Performers	1,900 (+19%)	6,800 (+69%)	13,000 (+131%)	4,700 (+47%)
Art	100 (+19%)	400 (+71%)	700 (+131%)	200 (+47%)
Camera/video/publicity	100 (+19%)	500 (+76%)	800 (+121%)	300 (+47%)
Construction	500 (+21%)	1,400 (+67%)	2,700 (+127%)	1,000 (+47%)
Costume	100 (+20%)	500 (+67%)	1,000 (+130%)	300 (+47%)
Directors/Asst. Directors	200 (+19%)	600 (+71%)	1,100 (+131%)	400 (+47%)
Editing/Post-production	200 (+21%)	800 (+80%)	1,100 (+108%)	500 (+47%)
Grip/Electrical/Lighting	200 (+18%)	600 (+66%)	1,300 (+141%)	400 (+47%)
Hair/Make-up	100 (+18%)	200 (+68%)	500 (+138%)	200 (+47%)
Location	100 (+19%)	200 (+71%)	400 (+131%)	200 (+47%)
Production	100 (+19%)	400 (+71%)	700 (+131%)	200 (+47%)
Props/Sets/Craft/Labour	500 (+20%)	1,800 (+68%)	3,500 (+131%)	1,200 (+47%)
Sound	100 (+22%)	300 (+75%)	500 (+114%)	200 (+47%)
Special effects	100 (+19%)	500 (+71%)	900 (+131%)	300 (+47%)
Transportation	400 (+23%)	1,400 (+74%)	2,000 (+110%)	900 (+47%)
Writing/Script/Continuity	300 (+21%)	1,100 (+76%)	1,700 (+114%)	700 (+47%)
Total	5,000 (+20%)	17,800 (+70%)	32,300 (+127%)	12,000 (+47%)

These estimates are based on production volume data, detailed film budgets and aggregated payroll and membership data provided by unions and guilds. This table includes estimates of union and non-union employment, and excludes union employment on projects that are not live action film/TV. Totals may not sum due to rounding.

1.7 Relationship between production volume, employment, and soundstage area (3/3)

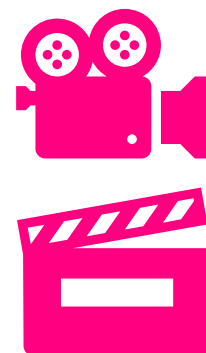
Adding one million sq. ft. of soundstage space to the current supply and keeping the same mix of **soundstage types would lead to ...**



66 individual soundstages

+ 47% from current supply

Average of 15,100 sq. ft. per new stage



\$610M
additional
production
volume



12,000 additional workers
supported (6,370 FTEs)

2. Film/TV Production in the GTHA | General Context

2.1 Series productions dominate

- As noted at the beginning of Section 1, foreign (service) television series have dominated **Toronto's production landscape and are a contributing factor to Toronto's labour and soundstage shortages**, both for animation and live-action production.
- Many of these series produced are released on streaming platforms, which have impacts on labour demand, and production/post-production workflows (e.g. filming/releasing an entire season at once, no pilots, etc.).
 - Live action series productions demand large crews, office space, and often require multiple elaborate sets, contributing to shortages.
 - Animation series productions tend to have lighter facility requirements than features, but a new series typically requires 100+ full-time workers for over a year to develop 3D assets and animate the first full season.
- When asked about trends over the next three to five years, domestic producers interviewed agreed that service and SVOD productions will continue to increase.

2.2 Niche genres

- Based on interviews, **Toronto's live action filming landscape tends to attract science fiction, action, and fantasy genre productions** (e.g., *The Boys*, *Star Trek: Discovery*, *Titans*, *The Expanse*, *The Umbrella Academy*, etc.)
- This trend has led to the demand and development of niche/specialized talent and labour as well as an increased demand for VFX work. In particular, Toronto is known for having talent in the areas of:
 - Wire and harness work
 - Multi-discipline martial arts
 - Pre-visualization
 - Special effects makeup
- **Toronto's major animation companies are known for specializing in 3D animation, with an emphasis on children's content.** One interviewee noted that the local talent pool lacks experience producing content for adult audiences, which is a barrier to attracting a wider variety of animation service production work.

3. Film/TV Production in the GTHA | Labour Market

3.1 New and emerging types of jobs (1/2)

- Virtual production trained professionals:
 - Technological advancements are transforming production and post-production workflows, and as a result, new skills and methods of creations are rapidly being integrated into filmmaking.
 - New skills are required to meet the demand for these emerging roles, which include virtual production supervisors, virtual production art directors, virtual production designers, motion-capture operator, LED technicians, game engine programmers, etc.
 - Virtual production also requires specialized and flexible IT staff for pipeline development. Because this area is an emerging technology, these workers must be agile and remain current on cutting edge technologies and practices.
- Intimacy coordinator:
 - An emerging best practice is to hire an intimacy coordinator, whose role is to ensure the well-being of Performers who participate in intimate scenes.
 - There is currently a small number of intimacy coordinators working in Toronto, however as more productions adopt the practice of requiring intimacy coordinators, demand will continue to grow for both domestic and foreign productions .
 - ACTRA is currently the liaison for most intimacy coordinators in Canada.

3.1 New and emerging types of jobs (2/2)

- Genre specific skills:
 - As Toronto becomes more of desirable destination for filming sci-fi, superhero and action series, there is increased demand for niche and specialized talent specific to these genres. For example, these genres tend to require specific skillsets in the areas of hair/makeup, special effects, stunts, and set design.
- Groomers, biologically accurate musculature, and physics-based modelling:
 - Once the domain of only the highest budget animated productions, a high level of detail in hair, musculature, and other motion dynamics is increasingly becoming the norm for medium-tier production budgets. In part, this trend can be attributed to the availability of better, cheaper tools; however, deploying these effects more widely puts a greater demand on the nascent supply of this specialized talent.
- COVID-19 health and safety protocol positions:
 - COVID-19 compliance officers/supervisors, as well as other health and safety professionals, on set are currently temporary, however they are integral to allowing productions in Toronto to operate at full capacity and to maintain the health and safety of casts and crews.

3.2 Generational talent gap (1/2)

- Live action Interviewees emphasized the difficulty of finding mid-career, top-tier talent and department heads in Toronto.
- A significant portion of the experienced labour pool, including department heads and key creatives, are near retirement.
- There are anxieties concerning replacing the skill sets that will depart with retiring individuals.
- Conversely, another large portion of the workforce is relatively junior and emerging.
- As a result of a lack of a mid-career workers, interviewees noted that inexperienced individuals are advancing into roles without sufficient qualifications.

3.2 Generational talent gap (2/2)

- Live action interviewees theorize that Toronto has a generational gap in the labour pool because of periods of inconsistency in production volume over the last two decades.
 - Events and circumstances such as the Toronto SARS outbreak, the 2008 recession and an uncompetitive provincial tax credit (pre-**2009**) **not only impacted the industry's workforce at those points in time, but** also continue to shape it today.
 - Emerging talent of the past would have either left Toronto for other competitive jurisdictions or left the industry entirely, resulting in the current shortage of a mid-career labour pool.
- Interviewees, across live-action, post-production/VFX and animation, identified the need for more succession planning across the industry to ensure that those close to retirement have appropriate replacements.

3.3 Diversity

- According to Statistics Canada's *2016 Census*, 51% of Toronto's population are visible minorities and 46% immigrated from outside of Canada, however interviewees expressed that Toronto's screen workforce does not reflect this level of diversity.
- Producers have noted of this lack of diversity, especially regarding a lack of hair and makeup talent that can work with different types of hair and skin tones. On occasion, producers have felt the need to bring in talent from outside Canada. In general, imported talent is more expensive than local workers, so this is usually only done when the skills are not available in Toronto.
- The lack of racial, ethnic and gender diversity is especially seen in technical positions, across live action, VFX and animation work. However, this shortcoming is present in the industry as a whole and is not exclusively an issue in Toronto.
- Union representatives have recently increased outreach to diverse communities and recognize the need to do more of it. There are a number of studies underway to better understand the challenges faced by equity seeking groups.

3.4 Animation Landscape in Canada

- Jurisdictional specializations
 - Toronto animation companies are known for specializing in 3D animation, typically for **episodic children's content**.
 - Montreal and Vancouver are better known for larger feature film projects. Interviewees noted that attracting and retaining talent can be difficult, as Vancouver and Montreal projects are perceived to offer more glamorous credits.

3.5 Recruitment/retention (1/4) | Recruitment challenges

- Live action, post-production and animation interviewees expressed that many recruitment challenges are linked to public perceptions of working in the film and television industry:
 - Lack of awareness of a career in film industry at high school/college level or by the general public as an attainable and lucrative field in Toronto. This issue is particularly acute for highly technical occupations in animation and VFX – while Ontario has strong IT and computer science post-secondary programs, there is no curriculum specifically preparing students to work in pipeline development.
 - For live action, a general perception is that working in film/TV means working exclusively on-set, and there is an unawareness of the many job types the industry has to offer.
- There is a lack of clarity about training programs and/or entry points for those interested in working on set.
- Due to the continual evolution of animation and VFX production technology and workflows, new graduates require at least several months of on-the-job training to become independent, productive workers. As a result, interviewees were quick to emphasize the level of investment that they put into junior human resources.

3.5 Recruitment/retention (2/4) | Recruitment challenges

- One interviewee also pointed to an asymmetry in the eligibility of the Ontario vs. British Columbia and Quebec tax credits that makes it more difficult for Ontario companies to compete in the broader Canadian animation/VFX labour market:
 - The OCASE tax credit limits eligibility to workers that were resident in Ontario at the end of the previous calendar year, so there is a short-term disincentive to attract/hire new workers from other jurisdictions.
 - **Conversely, British Columbia and Québec's equivalent tax credits do not have this stipulation, which encourages recruiting talent from outside the province(s).**

3.5 Recruitment/retention (3/4) | Retention challenges

- Long hours and cyclical/freelance work represents a challenge for recruitment and retention in live action.
- Although animation and VFX workers are typically employed on a longer-term, full-time basis than their live action counterparts, many occupations require long working hours to meet intermittent peak labour demands and high expectations. Some content production practices that have emerged with the rise of SVOD services contribute to increasingly disruptive workflows, such as releasing multiple episodes at once and producing whole seasons without a pilot.
- Stakeholders in live action production noted challenges retaining labour with skills that readily transfer to other industries (e.g. drivers/transportation, electrical, construction, hair/makeup, and accounting).
 - The workforce in these in-demand positions tend to gravitate to employment in other industries, where the hours are more flexible, and pay can be competitive with the corresponding occupations in the production sector.
- Due to the lifestyle sacrifices and fluctuating wages in live-action production, interviewees emphasized that finding people who are passionate about this line of work is essential for retention, especially for workers that are new to the industry.

3.5 Recruitment/retention (4/4) | Retention challenges

- Experienced animation/VFX workers are in short supply and highly sought after. Companies reported extremely high rates of turnover due to fierce competition among local employers. Due to the use of different technologies (software, pipeline architecture, etc.) at different companies, turnover represents a significant expense for employers because new workers of all experience levels must be onboarded.
- In post-production, and VFX especially, employees face extreme pressure to complete work in a strict and often inflexible timeframe, which can cause mental and physical stress for workers. Burnout is widely recognized as a major challenge for employees and employers alike in these industries.
- VFX and animation interviewees noted that a significant retention barrier specific to GTHA is the high cost of living and robust opportunities in other markets. This has contributed to talent opting to work in other jurisdictions, specifically Montreal and Vancouver, which can offer competitive wages

3.6 Training barriers (1/6) | Junior/emerging talent

- Technical training programs and courses have typically been provided by educational institutions and unions, and many have proven to be very successful. However, many producers expressed a need for more practical, hands-on training to equip students with job-ready skills.
 - Most producers emphasized an increased need for training for young and emerging labour.
 - **Live action Interviewees acknowledge that for technical and “on-set” skills, courses and in-classroom training only go so far, as the majority of growth is through experiential learning.**
- Lower budget productions are facing challenges in the high-end Toronto market (as space and labour are dominated by high-budget productions). Consequently, there is a lack of opportunities for emerging/young talent to work, train, and learn on more accessible jobs.
 - **These opportunities are fleeting in Toronto and reduce the number of “hands-on” training opportunities and learning experiences that would historically have occurred outside of formal training programs.**
- Additionally, most film programs, excluding VFX and animation, offered at post-secondary institutions are primarily focused on training for key creatives and are not feeding the technical workforce.

3.6 Training barriers (2/6) | Junior/emerging talent

- VFX and animation employers express that college training programs are not teaching students enough of the specialized skills they require, however the reality is that education programs, for the most part, are kept purposefully broad in their curriculum. Students learn a whole suite of skills in order for the program to be viable and attractive to a range of prospective students.

3.6 Training barriers (3/6) | Mature talent/upskilling

- One VFX interviewee noted that there is an additional training gap for those 5-15 years into a position. Workers tend to plateau and have no learning opportunities to improve or harness new skills, further contributing to a short supply of talent ready to grow into department heads and managerial roles.
- A similar challenge was voiced by producers – often, experiential learning is not enough to adequately prepare workers for advancement into more senior roles. Newly promoted workers are often perceived as unprepared and struggle to grow into their new job responsibilities.
- Unions also observed a challenge with upgrading worker skills, noting that individuals with potential to advance tend to grow comfortable in their current role, and they may require personalized encouragement to pursue a more advanced role.
- VFX work for a single large-scale production is often broken up across many different companies, which means studios are often only doing a small portion of the work on a particular project. This could potentially contribute to talent having less time/opportunities to master a specific effect or technique, because of the quick turn over of tasks. It may take longer to build up specific expertise and move into senior roles.*

3.6 Training barriers (4/6) | Virtual production

- Some experts predict that virtual production will become an industry norm by 2026.* Toronto has done well to establish itself as a leader in this space, thanks to innovators like SIRT and Pixomondo, growing tech infrastructure and federal and provincial support. However, in order to continue to be well equipped for the changes set to take place in the near future, leaders in **this space say that Toronto's industry needs to rapidly accelerate its investment and establish ways to prepare the workforce.**
 - VFX educators are aware of the impending demands for virtual production/real-time effects work, and their need to equip students with skills that are necessary to meet these demands. They are beginning to add components to their curricula (many as soon as Fall 2021), however some expressed that there is not yet clarity on how much of their curricula will need to cover virtual production techniques and skills.
 - Production workflows are set to be altered and on-set personnel (especially within electrical/lighting, art, and camera departments) will need to be trained to work in these new environments. Currently, there are very few training opportunities that can offer this kind of upskilling (e.g. SIRT).
 - In addition to the education for existing live action and post-production workforces, industry leaders emphasize that the entire industry needs to be equipped with some base knowledge of how virtual production operates (workflows, etc.)

3.6 Training barriers (5/6) | Virtual production

- VFX educators interviewed emphasized that a limitation to virtual production training is tied to a lack of access to state-of-the-art facilities and technology. For students to get hands on experience, prior to entering the workforce, post-secondary institutions would have to invest in acquiring equipment and technology for student use or will have to establish partnerships with studios to give students access to their facilities.

3.6 Training barriers (6/6) | Funding for training programs

- Producers interviewed generally expressed that it is incumbent on the unions and guilds to **fund an increase in the number of training opportunities for Toronto's screen workforce.**
- Union representatives interviewed expressed training grants and reimbursements are directed towards employers, not unions.
- **All stakeholders support an increase in training and deem it necessary for Toronto's workforce** to grow. Governments should lead efforts in financing and organizing new training initiatives so the workforce can truly develop.
- As noted in Subsection 3.1, the demand for virtual production labour is set to increase. Providing public investment in state-of-the-art facilities and training initiatives will give **Toronto's production sector and workforce a competitive edge.**

4. Film/TV Production in the GTHA | Soundstages/Space

4.1 Current state (full capacity, increasingly demanding productions)

- Soundstages operators interviewed noted that they are operating at full capacity, largely because the high-end, large-scale series Toronto has been attracting require more space and because of an increase in multi-year lease agreements.
- All interviewees noted their desire to expand their facilities and build or acquire more soundstages, however they note that their ability to expand is dependent on the supply of **Toronto's available workforce to staff prospective productions.**
- In response to the lack of available labour, several soundstages have expressed plans to partner with post-secondary institutions in nurturing new talent and to also build media hubs offering a range of additional services.

4.2 Leveraging multi-year lease agreements and idle space

- In response to the difficulties in finding available studio space in Toronto, multi-year lease agreements have been established between soundstages and producers (typically foreign) looking to secure space for extended periods of time. Additionally, this proves to be more cost effective than demolishing and rebuilding a set once filming resumes, especially for productions with elaborate sets. This relatively new practice has created periods where soundstages are **vacant (in a show's hiatus) however are not always advertised to other producers as being available.**
- In an attempt to leverage paid yet vacant space, soundstage operators are beginning to sublease to producers, typically domestic, when these facilities are not in use. Such arrangements involve obtaining the foreign producers' consent in the multi-year lease agreement. Of the soundstage operators interviewed, most have said that this practice has worked well for all parties, however the only limitation is soundstage operators must be inflexible on dates for the space to be freed **up in time for the main lessor's production to resume.**
- Some union representatives expressed the desire for soundstages to be more transparent in when they have such vacant space in order to better forecast the demand for labour.

4.3 Barriers to adding soundstages

- Soundstage operators emphasized that building purpose-built studios and adapting spaces into **soundstages is directly linked to the forecasts related to the availability of City's labour supply**. Both soundstage operators and union representatives expressed an increase in communication and transparency in available soundstages and available labour.
- Several stakeholders felt that the slow pace at which building permits are approved can be a hinderance to the speed at which soundstages can be built. Soundstage operators asserted that business may be lost for the City as a result of the time it takes for approvals. The City of Toronto has recently responded to these concerns by prioritizing film/TV building permit approvals.
- At least one soundstage operator shared that they have locations that are not publicly advertised due to **concerns about zoning**. **With no way to measure the actual space available, such 'shadow capacity' makes planning for future soundstage demand more difficult**.
- Although interviewees noted that there is some focus on adding facilities in the GTA, some soundstage operators expressed that the high land value and congestion deters them and are shifting focus outside of the GTA.
- In anticipation of the future changes brought on by the integration of virtual production, one interviewee emphasized that top tier soundstage operators need to consider equipping their studios with dedicated internet (via fibre optic connections) and data servers. Additionally, LED stages may also be in demand.

5. Meeting Labour Challenges (in the GTHA and beyond)

5.1 Training programs and initiatives (1/5) | Live Action

- Existing training programs are limited in the kinds of skills training offered, however **interviewees noted that a great deal of workers' most valuable training occurs on the job.** Some feel that the industry needs to embrace new participants and acknowledge and act on existing and systematic barriers of entry.
- Examples of training programs for those who are new to the industry:
 - DGC Ontario: Offers the Guild Apprentice Program (GAP), a 12-month program permitting non-DGC members to work on Guild productions in the PA/Trainee category.
 - IATSE 873: Permittee Orientation Courses for all new, inexperienced workers prior to them entering the **workforce and "101"** (entry level) courses for many departments such as Costumes, Grip, Electric, Set Decoration, Props, Transportation, Hair, and Construction, with more to come.
 - NABET 700-M UNIFOR: Offers apprenticeship programs, paid hands-on training in each department represented.
 - IATSE 667: Program for camera trainees to allow new entrants to gain work experience and exposure to a variety of camera systems while they work and establish networks in the industry.
 - ACTRA: Offers a streamlined apprenticeship program; for the most part, supply exceeds demand, so ACTRA largely focuses on recruitment of underrepresented groups.

5.1 Training programs and initiatives (2/5) | Live Action

- Examples of upskilling programs for existing labour:
 - DGC Ontario: Recently introduced a mandatory supervisory program, to enhance management skills and encourage as members progress in their careers.
 - IATSE: Offers training, courses and seminars to members to encourage upskilling and professional development.
 - NABET 700-M UNIFOR: Offer training, courses and seminars to members to encourage upskill and professional development. Programs are responsive to changes in technology (e.g., a push to help hair/makeup adapt to higher resolution media formats).
- Examples of post-secondary institutions and film schools that offer training programs (excluding universities and colleges):
 - The Canadian Film Centre: Offers a variety of hands-on, practical training programs.
 - The Toronto Film School: Offers diploma programs in film/TV production, writing and acting.
 - The Liaison of Independent Filmmakers of Toronto (LIFT): Offers professional and creative development, workshops, and courses.
 - Trebas Institute's Film & TV Production Program: Offers four terms of production training.

5.1 Training programs and initiatives (3/5) | VFX

- Toronto post-secondary institutions and other organizations offering VFX training programs:
 - Seneca College – Visual Effects for Film & TV: Eight-month long program providing training in the special effects industry. Two intakes a year, averaging 15 students each. A member of **Sidelfx's** Houdini Certified Schools Program.
 - Sheridan College – Visual Effects Program: 10-month program teaching tools and techniques to become a visual effects artist. A member of **Sidelfx's** Houdini Certified Schools Program.
 - Humber College – 3D Modeling and Visual Effects Production: Two semester certificate program that focuses on both the conceptual and technical teachings.
 - Centennial College – Digital Visual Effects: Two-year college diploma teaches industry-standard techniques to produce photo-realistic visual effects. A member of **Sidelfx's** Houdini Certified Schools Program.
 - Toronto Film School - Visual Effects for Film & Television: 24-month program that deconstructs the VFX pipeline with a cumulative approach to teaching.
 - George Brown – Visual Effects Program (Post-graduate): One-year long program where students expand upon concepts and techniques in 3D animation, motion graphics or audio/video editing for film and television.
 - CEE Centre for Young Black Professionals/WoodGreen Community Services, and SPIN VFX – Digital VFX Compositing Program: Eight-month **training and development program to enable Black youth entry into Toronto's** visual effects industry, which includes four-month, full-time paid internship.
 - Screen Industries Research and Training Centre (SIRT): A Sheridan Research Centre at Pinewood Toronto Studios offers training courses/opportunities in virtual production (e.g., Unreal Engine) for new talent and those looking to upskill.

5.1 Training programs and initiatives (4/5) | Animation

- Toronto is home to top-tier animation programs that attract both domestic and international students. Examples of post-secondary institutions and other organizations offering animation training programs:
 - Sheridan College – Honours Bachelor of Animation: Four-year program that emphasizes classical principles of animation in a variety of forms, including 2D digital, 3D and stop motion.
 - Sheridan College – Computer Animation: Post-graduate, one year program designed to build on existing skills and talents to teach technical and creative aspects of 3D animation.
 - Sheridan College - Digital Creature Animation (Technical Direction): Post-graduate, 10-month program designed in response to industry demand for character/creature creation skills.
 - Seneca College – Animation: Three-year advanced diploma program that teaches skills and knowledge in both traditional and computer animation.
 - Max the Mutt College of Animation, Art & Design: Averages roughly 25 graduates a year, across three programs (Animation Diploma, Concept Art Diploma, and Illustration and Storytelling for Sequential Art).
 - Centennial College – Animation 3D – 16-month program with focus on production-style training that prepares students for career in digital animation, film, television, broadcast design and games.
 - Humber College – Animation 3D: Advanced diploma program, aimed to develop a well-rounded knowledge base and skillset that includes strong art, animation, modelling and visualization abilities.
 - OCAD U – Digital Painting and Expanded Animation: Four-year program covering core Drawing & Painting classes, stop motion techniques, 3D animation and 2D visual effects for animation and painting

5.1 Training programs and initiatives (5/5) | Youth and diverse groups

- Youth: Interviewees suggested further developing programs where young adults at the high school or college level can foster a passion for working in the industry and discover, at an early age, areas of the industry they most align with.
 - xoTO Screen Industry Pathways has helped launch industry-community-municipality programmes such as xoTO Schools Co-op Program with the TDSB, NABET 700-M UNIFOR and IATSE873 as well as the PA Program with the DGC-ON, POV and CEE Centre for Young Black Professionals. The City also works with groups such as OYA Media Group, BIPOC TV& FILM, Reelworld Film Festival, The Remix Project, Being Black in Canada, Black Women Film! and others to expand the capacity of such programs and establish clearer pathways into the industry.
 - Suggestions were made for further collaborations with school boards, PSIs, and youth outreach programs, as well as youth-targeted marketing campaigns.
- Diverse/equity-seeking groups: There are many recent initiatives to promote equitable participation in the industry.
 - WGC has taken steps to encourage BIPOC screenwriters by offering self-identification in its member directory, a *Script of the Month* program (which provides exposure for selected BIPOC creative works), a diversity committee, hiring guidelines, and networking opportunities.
 - Additionally, programmes such as WIFT-Toronto mentorships and workshops, OYA Media Group, and several film festivals offer targeted immersion and training programs for diverse participants and complement more official training from institutions like the Canadian Film Centre, the Toronto Film School as well as universities and colleges offering film/media training programs.
- More government investment is recommended in order to further boost career pathways programs that bridge diverse communities and the industry, as well as act as a neutral body that can assist the various training groups in offering cohesive and clear pathways of entry into the industry.

5.2 Career pathways and onboarding

- Lower budget productions as a live action training ground:
 - Through stakeholder interviews, Nordicity has observed that smaller or indie productions are often amongst the options for emerging labour to gain experience and hone their skills, as there is higher tolerance for experimentation and a more conducive environment for learning opportunities.
 - Due, at least in part, to the limited affordable production space available, opportunities to work on varied types of productions are dwindling for emerging labour. As a result, there are fewer opportunities to get hands on experience that has historically been a prerequisite to work on large scale productions.
 - As high budget series productions in Toronto increase and smaller productions consider alternative locations to Toronto, opportunities to include trainees, apprentices and emerging talent on all sizes and types of productions will be key in continuing to develop a highly skilled workforce
- Toronto as VFX/animation training ground:
 - VFX and animation educators, and producers interviewed both noted that it is very common for workers to take entry level positions to secure their first credits, and within a year or two, move to another company or jurisdiction. This results in a high-level of turn over in the industry.
 - Producers note that this is compounded in Ontario by the fact that companies in Montreal and Vancouver can more easily claim tax credits on labour expenditures on workers attracted from outside of their provinces (as noted in Subsection 3.6).

5.3 Incentives for investing in talent

- In order to fill the crucial void in training opportunities left by the decrease in smaller productions in the City, there should be incentives for high budget producers to embrace providing training opportunities to emerging talent.
- Example of foreign production labour investment in Quebec, perhaps as a model to consider for the Government of Ontario:
 - Foreign producers filming in Quebec, with a total yearly payroll of over \$2 million, must contribute an investment that is equal to at least 1% of their total payroll to the development of the industry's skilled labour, through the Workforce Skills Development and Recognition Fund (WSDRF). This funding, which is managed and administered by **L'INIS (L'institut national de l'image et du son) ensures the continuous training of labour that aligns with producers' needs** and in return, benefits their production and future projects in Quebec.
- Example of wage subsidy programs for emerging talent in other priority sectors :
 - TECHNATION Career Ready Program: Employers looking to hire tech talent are eligible to have wage subsidies through this program (funded by the Government of Canada's Student Work Placement Program).
 - BioTalent Canada's Green Jobs Science and Technology Program: To address the need for labour in the biotechnology industry, this program provides wage subsidies to biotechnology companies who employ emerging STEM talent (funded by Natural Resources Canada).

5.4 Skill sharing with other jurisdictions

- As an alternative to training programs, one foreign producer suggests allowing foreign crews in initially (as a skill sharing opportunity) for early seasons.
 - For example, when shooting Breaking Bad in Albuquerque , local crews wanted to keep talent from L.A. out to bolster their film industry, however their labour pool was largely inexperienced.
 - The solution: For early season crews from L.A. worked alongside Albuquerque crews, who took over entirely for final seasons after acquiring the appropriate skills.
- An example of a skill sharing program is the deeming provision in the Northern Ontario Heritage Fund Corporation, Film & Television Funding Framework:
 - Individuals who are not from Northern Ontario may be deemed eligible for this fund for the purposes of acting as a mentor and training inexperienced labour on a particular production.
 - All above-the-line crew (except Performers) and below-the line crew are eligible.

5.5 Availability of information

- In general, most stakeholders in the Toronto film and television production sector recognize that success for each individual stakeholder is dependent on their mutual ability to collaborate and plan for the future. Specifically, interviewees recognized that the solution to the labour and space strains faced by the industry is a willingness to share data, provide timely updates of new information, and coordinate medium- and long-term planning (with regard to training and studio development) with other stakeholders.
- Although the need for information sharing and long-term planning was generally acknowledged, many stakeholders felt that there was insufficient information to proceed with confidence. As an example, some soundstage operators expressed that it is highly risky to build new spaces if they are unsure about the forecasted availability of labour. On the other hand, union representatives are responsible for keeping their membership in balance with available work; as such, they (understandably) want to be sure that studios are built and projects have committed to shooting in Toronto prior to admitting/training new workers.
- Most accredited VFX and animation programs have advisory boards made up of educators and industry leaders that inform course changes and curriculum. These committees are effective, however are limited in that they only convene once annually. There need to be more opportunities for training institutions and industry leaders to collaborate on creating opportunities to get job-ready students into the workforce and **to launching specialized programs. One success story is Sheridan's Digital Creature Animation program, which is 10 months long and teaches highly sought-after skillsets in response to industry demand.**

5.6 Options to address labour shortages

To summarize the options outlined in this section, interviewees made the following recommendations to help meet and manage the extraordinary growth recently experienced by the Toronto film/TV workforce:

Option	Description	Issues addressed
Programs at a high school or college level	Further develop programs for young adults at the high school or college level to foster a passion for working in the industry. As this analysis demonstrated, there are certain occupations for which recruitment remains a challenge.	<ul style="list-style-type: none"> ▪ Shortage of junior workers
Pathways for emerging talent to gain initial experience	Create pathways for emerging talent to gain experience on larger productions to help new workers fast-track skill development. With lower budget productions being priced out of the Toronto production market, new talent will increasingly need to cut their teeth on larger budget productions.	<ul style="list-style-type: none"> ▪ Shortage of junior workers ▪ Fewer opportunities for emerging workers to gain experience on low budget productions
Incentives for producers to train emerging talent	Consider incentives for producers to train emerging talent, potentially paired with public participation to offset some of the cost. This report notes several models that have reportedly been successful in other jurisdictions.	<ul style="list-style-type: none"> ▪ Fewer opportunities for emerging workers to gain experience on low budget productions
Interjurisdictional skill sharing	Evaluate the adoption of a skill-sharing model welcoming workers from other jurisdictions to provide on-the-job training for local workers on long-term series productions. Toronto's production industry is best known for its specialization in large-budget series production, and this format is uniquely well-suited to training local talent through skill sharing programs.	<ul style="list-style-type: none"> ▪ Shortage of experienced workers to fill supervisory/mentorship roles ▪ Over-specialization (pigeonholing) in certain genres and formats of production
Labour force and soundstage information sharing	Develop and monitor labour force and soundstage capacity indicators to ensure that the information collected by various stakeholders is transparent and available to other interested parties. Unions and soundstage operators mutually rely on each other's information to make plans for expanding capacity.	<ul style="list-style-type: none"> ▪ Coordinating labour and soundstage supply (recruitment/training) with demand from producers

Appendix – Data Sources and Methodology

Appendix – Data Sources

- Desk Research
 - Soundstage database: Nordicity supplemented data in its proprietary soundstage database (e.g., openings/closures, square footage, height, etc.) , by consulting studio websites, news articles, and press releases about GTHA soundstages. For information that was not publicly available, Nordicity contacted the soundstage operators directly.
 - Production budgets: Nordicity obtained a sample of film and television production budgets to link production volume statistics to labour expenditures. This sample budget dataset consisted of 45 domestic and foreign projects, covering a diverse range of low to very high budget film and television productions (e.g., features, series, movie of the week, drama, and documentary).
- Interviews: Nordicity conducted 36 telephone interviews with domestic and foreign producers, soundstage operators, post-production studio operators, film/television and commercial VFX studio representatives, animation studio representatives, post secondary institution representatives, union representatives, industry association representatives and government agency representatives.
- Administrative data: On request, unions and guilds provided Nordicity with information about members, days worked, and gross payroll from 2017 to 2019 inclusive.

Appendix – Methodology (1/3)

- Analytical Approach
 - Estimating the size of the Toronto film and television workforce:
 - Using City of Toronto production data, Nordicity used a sample of production budgets to allocate a dollar value of production spending to labour by department. The sample budgets were mapped to categories of production volume based on the following characteristics: film/TV, domestic/service, and DGC budget tier. In some cases where budget line items were less granular than union data, Nordicity used gross wages to segment budgets to the same level as that provided by unions.
 - Nordicity used gross wages information provided by unions/guilds to validate payroll estimates by department based on sample production budgets. The ratio between gross payroll, days worked, and the number of **individual workers (i.e., union members) was used to estimate the total days worked and total size of Toronto's** film and television workforce. These figures were generated at the most granular level at which unions/guilds were able to segment their data (usually by department).
 - Estimating workers required per million sq. ft. of additional soundstage space:
 - Nordicity used soundstage capacity utilization data from 2016 to assign major types of production volume (foreign film, foreign TV and domestic) to specific classifications of soundstages in Toronto based on their physical characteristics (area in sq. ft, height, and amenities).
 - Employment estimates per one million sq. ft. were generated by applying production budgets for each major type of production to the production volume associated with each type of soundstage.

Appendix – Methodology (2/3)

- Estimating the size of the Toronto commercial production workforce:
 - Using City of Toronto production data, Nordicity used sample production budgets (including days worked) from the Association of Canadian Commercial Production (ACCP) to allocate a dollar value of production spending to labour by department.
 - Because performers are typically hired by the agency (and not the commercial producer) ACTRA supplemented **ACCP's data to provide information about gross wages paid to performers on commercial productions.**
 - Similarly, Nordicity used the ratio of Editing/Post-production and Special effects to Camera/video observed in film/TV production to estimate employment in these categories on commercial production.
 - Nordicity used the ratio of days worked to individual workers for each occupation from film/TV to estimate the number of workers active in commercial production.
 - The ratio of FTEs to individual workers in film/TV was used to estimate the number of FTEs involved in commercial production; FTEs were allocated to occupational categories based on the distribution of days worked.
- Estimating the size of the Toronto animation and VFX workforce :
 - **Using Ontario Creates and the City of Toronto's production volume data for animation and VFX,** Nordicity used detailed budgets and salary data provided by animation and VFX companies to estimate the total amount of payroll by occupational category.
 - **Based on data from Ontario Creates, the City of Toronto, and Nordicity's research, Nordicity estimates that** animation and VFX represented \$154 and \$215 million in production volume in Toronto in 2019, respectively.

Appendix – Methodology (3/3)

- To estimate the number of FTEs, Nordicity normalized the occupation-level salary data collected for this **engagement based on CASO and Nordicity's report, *Business Intelligence: Ontario's Computer Animation and Visual Effects Companies, 2018***.
- Nordicity used data about the animation and VFX workforce from the CASO report to calculate the ratio of FTEs to individual workers. Nordicity calculated this ratio based on the (more conservative) ratio of full-time and part-time employees because contract and freelance workers may be employed by more than one company. Specifically, headcounts of freelancers/contract workers reported by individual companies may double-count the same who may have been engaged by more than one company during a reporting year.

