

Calgary Economic Development

INDUSTRY REPORT: INFORMATION AND CULTURAL INDUSTRIES

January 2008

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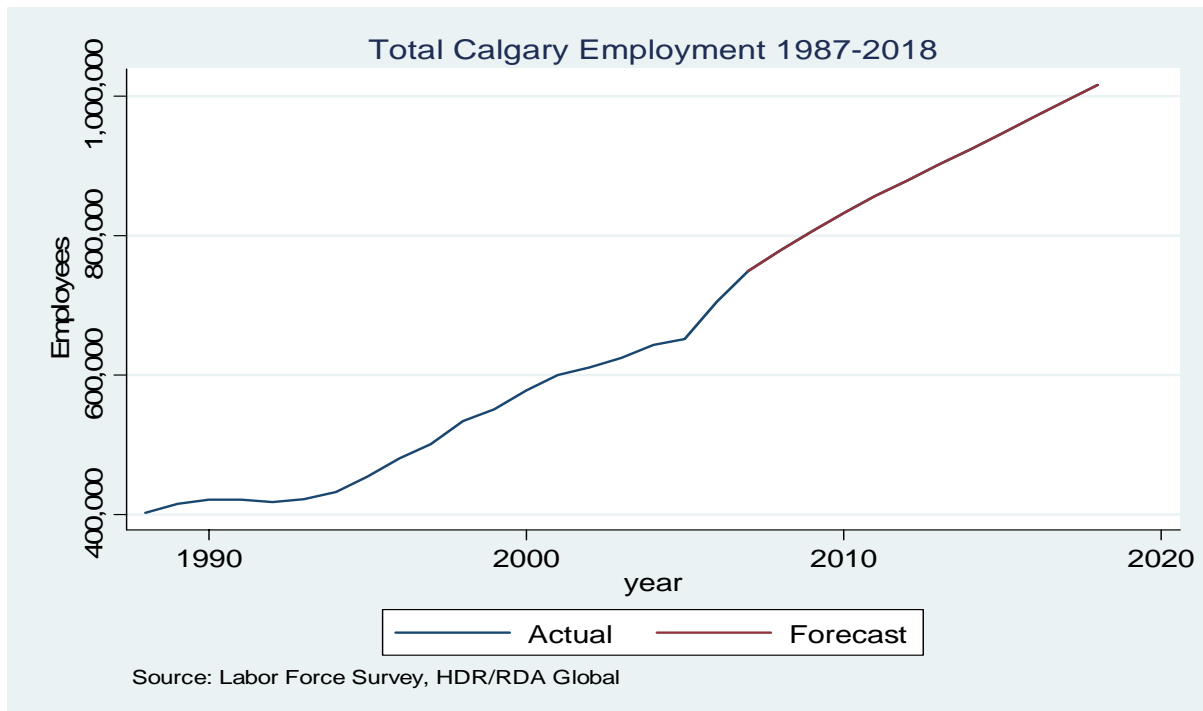
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Figure 1: Total Calgary Employment Forecast (All Industries)



The Calgary economy has seen tremendous growth in labour demand over the previous decade with employment growth reaching an all-time high of 8.1%¹ in 2006. The recent strong growth in the Calgary economy has been driven by a combination of economic factors spurring growth in specific sectors and generally throughout the Calgary economy. Energy prices are a significant driver with West Texas Intermediate oil price rising 17%² in 2006. Investment levels in major construction projects have risen significantly compared to historical levels. Housing starts have risen from 13,700³ starts in 2005 to 17,000 starts in 2006, an increase of 25%. Calgary GDP grew at 7.7% in 2006.

Recent increases in employment levels have been highest in sectors of the Calgary economy which are related to energy, in particular in the professional services sector. However, overall growth has been relatively balanced among industries with significant growth in most sectors of the economy.

As Figure 1 shows, labour demand in the Calgary Economic Region is expected to continue to grow at a healthy rate throughout the forecast, albeit at a lower, more sustainable level. The overall growth in employment in Calgary is expected to decline over the next several years settling at a more sustainable long-term employment growth rate of 2.4%, in line with historical average growth. However, this lower growth rate will continue to result in strong job creation. Over the previous ten years (1996-2006) Calgary employment increased adding 224,000 new

¹ Source: Labor Force Survey

² Source: US Energy Information Administration

³ Source for housing starts statistics and Metro GDP at basic prices was the Conference Board of Canada

jobs. Over the ten year forecast period (2007-2017) Calgary employment growth will result in the creation of an additional 244,000 new jobs. This growth in the Calgary economy will be driven by a number of factors including expectations that oil prices will remain at or near historically high levels. Energy prices are expected to be volatile in the near term, with possible spikes in prices, partially due to the declining value of the US dollar. However, for the long-term forecast, an average annual 1.7% growth rate in oil prices has been forecasted, which is consistent with conservative expectations of energy analysts⁴. Calgary GDP growth will moderate to a strong long term compound annual real growth rate of 3.8%.

Figure 2 Calgary Job Creation in Each Industry

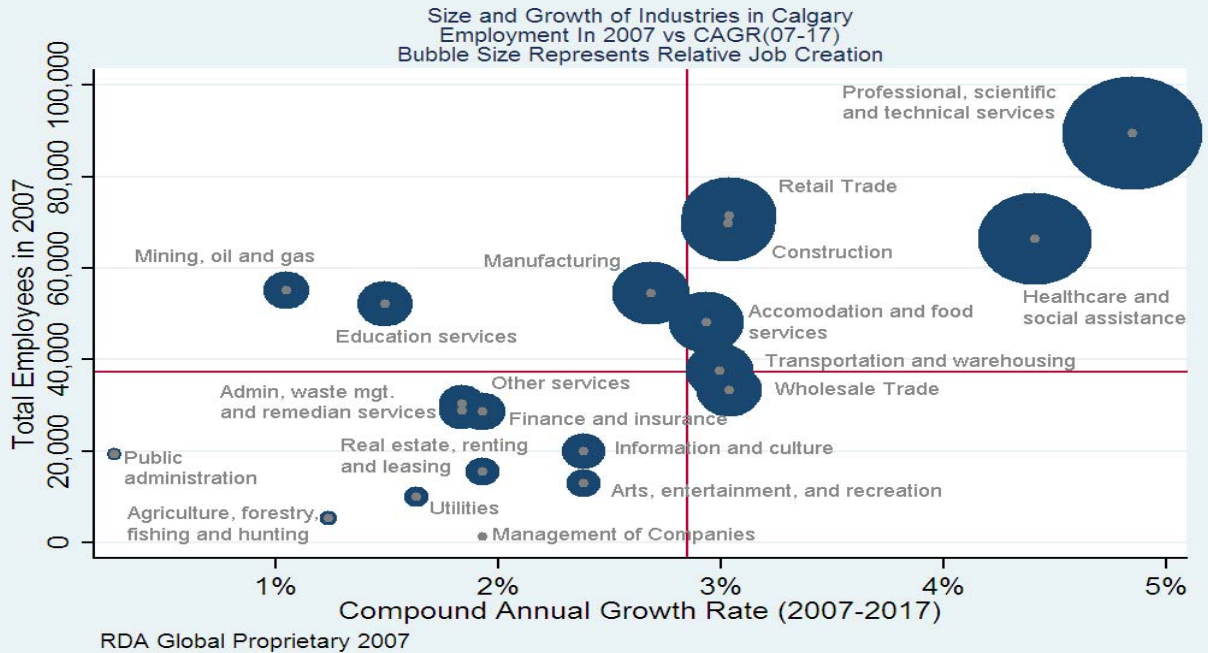


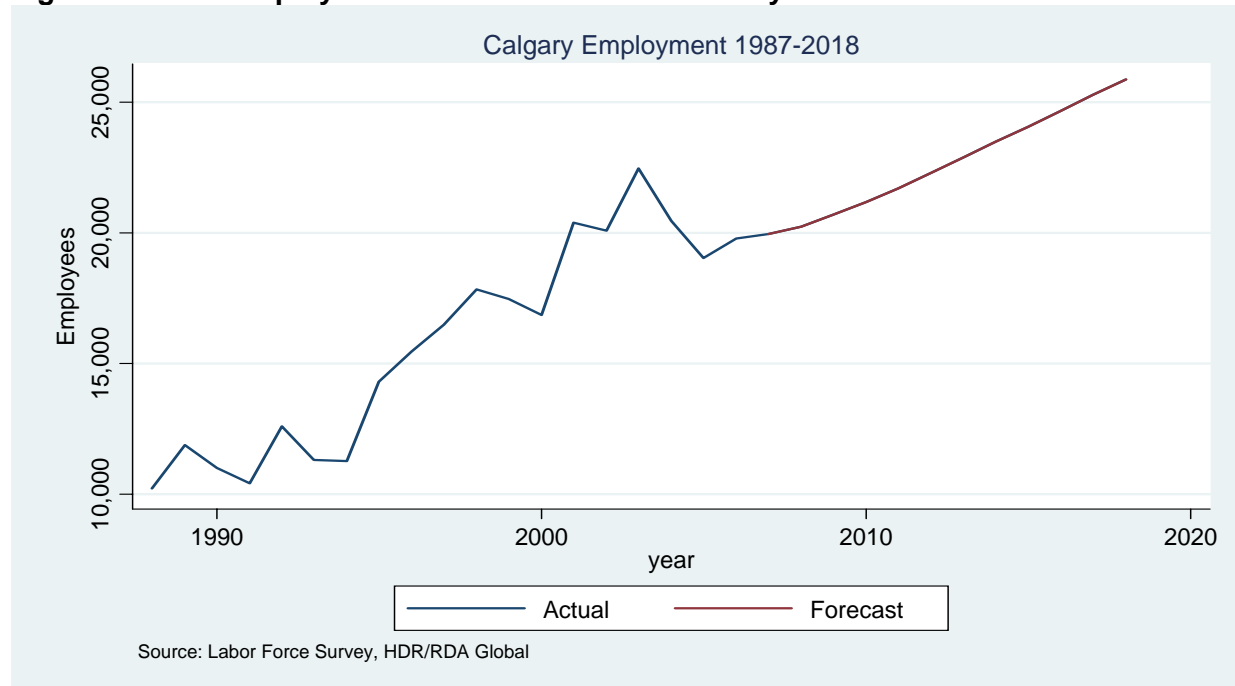
Figure 2 highlights the differences in job creation across industries in Calgary, with the larger circles representing industries with more job creations. Significant gains in employment will be somewhat distributed among economic sectors. However, there will be particularly strong expansion in the professional services sector, which is tied to continued demand for technical and engineering services in the energy sector. There will also be strong job growth in healthcare, driven by overall population growth and growth in the older segments of the population. Job expansion will also continue to be robust in retail, construction, accommodation & food services, transportation, manufacturing, and wholesale. Population growth is expected to drive up demand for education services. Most segments of the economy are expected to continue to see positive growth with employment growth rates in the 1% to 2.5% long-term growth range. However, total job creation in niche industries will be constrained by the relatively smaller size of these segments.

⁴ In development of this forecast, oil price forecasts of the Energy Information Administration and Sproule and Associates were consulted, however, final assumptions in the forecast model were based on a nominal annual growth rate of 1.7%.

INFORMATION AND CULTURE INDUSTRY

The Information industry is expected to continue to expand at a compound annual growth rate of 2.4% over the next ten years. This growth will be slightly lower than overall employment growth in Calgary of 2.9%. Growth in the industry will result in an additional 5,300 jobs added to the industry over the forecast period.

Figure 3: Total Employment in the Information Industry 1987-2018



The Information industry ranks fourteenth out of twenty industries for total employment. Historically, growth in this industry has been below that of the region but will nearly match the overall regional growth during the forecast period. In terms of jobs created, the industry ranked sixteenth over the 1997-2007 period, creating nearly 3,500 jobs. The industry will move up to become the fourteenth largest contributor to job creation in the 2007-2017 forecast period, creating nearly 5,300 new jobs.

Table 1: Information Industry Compared with Other Industries

NAICS Industry	Total Employment				Compound Annual Growth			Jobs Added		
	1987	1997	2007	2017	1987-97	1997-07	2007-17	1987-97	1997-07	2007-17
11 Agriculture, forestry, fishing and hunting	10,357	8,230	5,262	5,951	-2.3%	-4.4%	1.2%	(2,127)	(2,968)	689
21 Mining and oil and gas extraction	34,043	32,970	55,092	61,154	-0.3%	5.3%	1.0%	(1,073)	22,122	6,062
22 Utilities	4,700	3,800	9,881	11,621	-2.1%	10.0%	1.6%	(900)	6,081	1,740
23 Construction	21,500	36,600	69,847	94,177	5.5%	6.7%	3.0%	15,100	33,247	24,331
31-33 Manufacturing	30,500	42,900	54,380	70,890	3.5%	2.4%	2.7%	12,400	11,480	16,510
41 Wholesale trade	21,375	22,041	33,228	44,815	0.3%	4.2%	3.0%	666	11,187	11,586
44-45 Retail trade	46,025	47,459	71,546	96,493	0.3%	4.2%	3.0%	1,434	24,087	24,948
48-49 Transportation and warehousing	21,300	30,400	37,452	50,295	3.6%	2.1%	3.0%	9,100	7,052	12,844
51 Information and cultural industries	11,317	16,489	19,961	25,271	3.8%	1.9%	2.4%	5,172	3,472	5,310
52 Finance and insurance	16,662	21,266	28,538	34,543	2.5%	3.0%	1.9%	4,603	7,272	6,006
53 Real estate and rental and leasing	9,038	11,534	15,479	18,736	2.5%	3.0%	1.9%	2,497	3,944	3,258
54 Professional, scientific and technical services	27,200	43,700	89,591	143,873	4.9%	7.4%	4.9%	16,500	45,891	54,282
55 Management of companies and enterprises	501	879	1,169	1,415	5.8%	2.9%	1.9%	378	289	246
56 Admin & support, waste mgmt & remediation svcs.	11,299	19,821	28,790	34,543	5.8%	3.8%	1.8%	8,522	8,969	5,753
61 Educational services	23,800	31,900	52,154	60,488	3.0%	5.0%	1.5%	8,100	20,254	8,334
62 Health care and social assistance	33,700	43,200	66,471	102,326	2.5%	4.4%	4.4%	9,500	23,271	35,855
71 Arts, entertainment and recreation	7,283	10,611	12,845	16,262	3.8%	1.9%	2.4%	3,328	2,234	3,417
72 Accommodation and food services	20,200	32,100	48,100	64,248	4.7%	4.1%	2.9%	11,900	16,000	16,148
81 Other services (except public administration)	17,800	21,900	30,408	36,484	2.1%	3.3%	1.8%	4,100	8,508	6,076
91 Public administration	21,200	22,900	19,176	19,712	0.8%	-1.8%	0.3%	1,700	(3,724)	536
Grand Total	389,800	500,700	749,368	993,298	2.5%	4.1%	2.9%	110,900	248,668	243,930

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JOBS CREATED BY OCCUPATION – INFORMATION INDUSTRY

Figure 4: Total Jobs by Occupation 2007 and 2017 – Information Industry

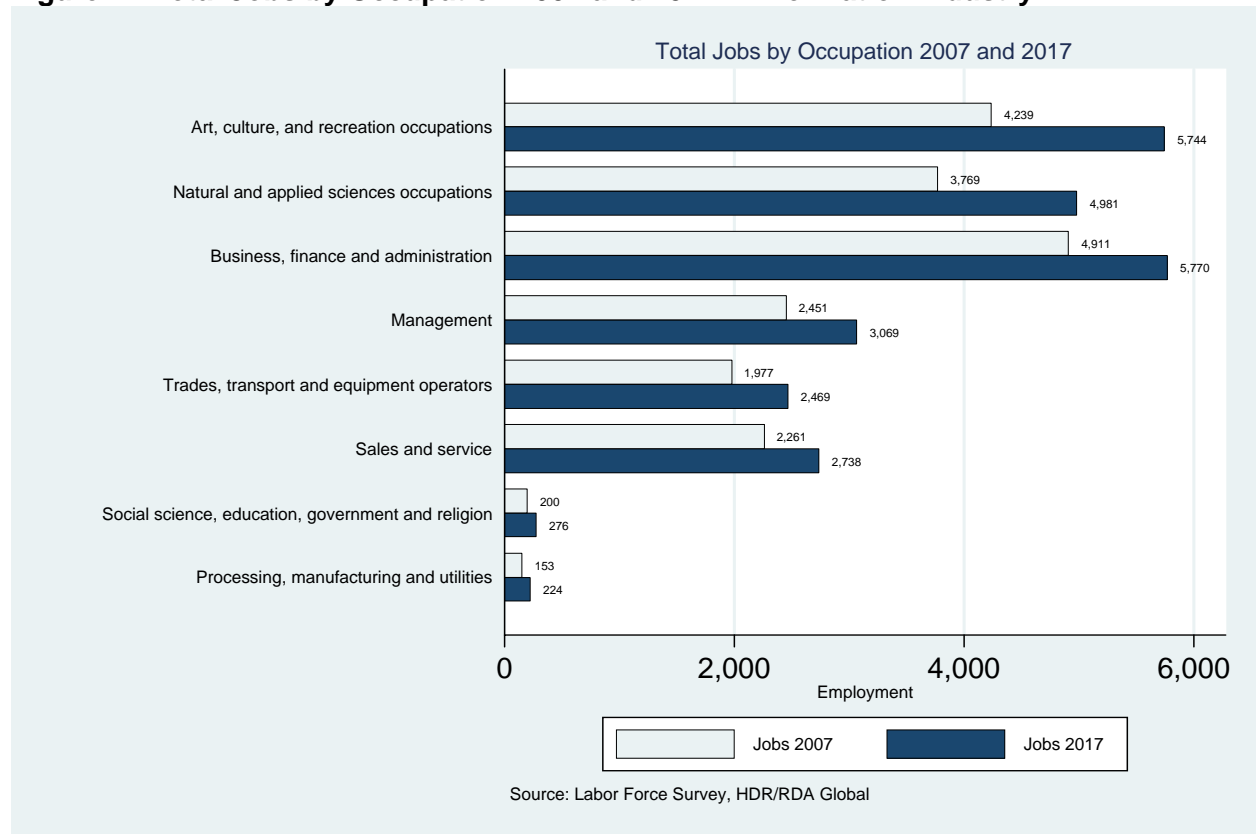
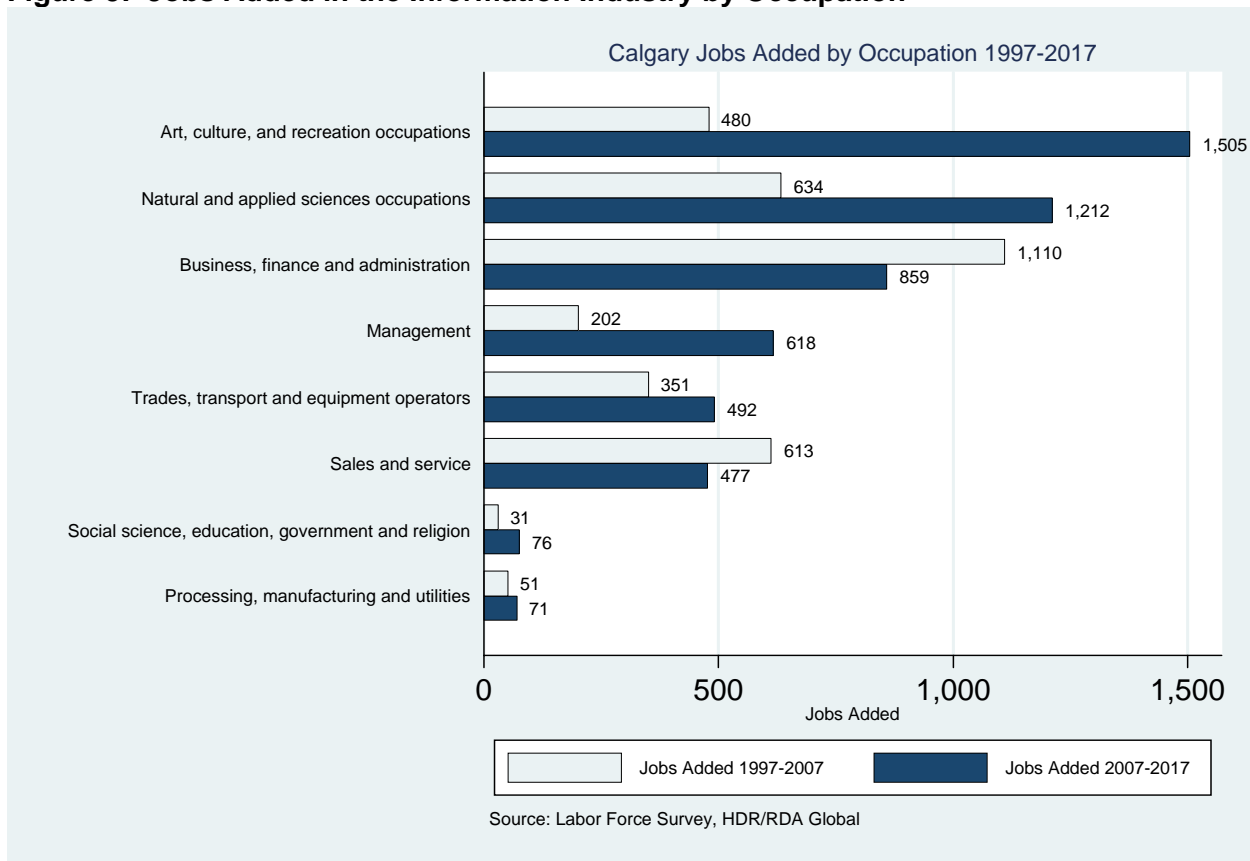


Table 2: 30-Year Occupational Growth for the Information Industry

Occupation (1 Digit NOC)	Total Employees				Compound Annual Growth		
	1987	1997	2007	2017	1987-97	1997-07	2007-17
A Management occupations	1,309	2,249	2,451	3,069	2.9%	2.6%	1.6%
B Business, finance and administration occupations	2,842	3,801	4,911	5,770	2.9%	2.6%	1.6%
C Natural and applied sciences and related occupations	2,054	3,135	3,769	4,981	4.3%	1.9%	2.8%
E Occupations in social science, education, government service and religion	101	169	200	276	5.3%	1.7%	3.3%
F Occupations in art, culture, recreation and sport	2,586	3,759	4,239	5,744	3.8%	1.2%	3.1%
G Sales and service occupations	1,140	1,648	2,261	2,738	3.8%	3.2%	1.9%
H Trades, transport and equipment operators and related occupations	1,207	1,626	1,977	2,469	3.0%	2.0%	2.2%
J Occupations unique to processing, manufacturing and utilities	79	102	153	224	2.6%	4.2%	3.9%
Grand Total	11,317	16,489	19,961	25,271	3.8%	1.9%	2.4%

There are nearly 20,000 employees in the Information industry today. Nearly 5,000 of these workers have business, finance, and administration jobs, representing the largest share of occupations. Demand for these jobs will rise to nearly 5,800 over the forecast period. The next largest occupational category is occupations in art, culture, recreation and sport, which currently employs about 4,200 workers and will employ about 5,700 workers in 2017. Natural and applied sciences and related occupations is the third largest category with over 3,700 employees today growing to 5,000 workers in 2017.

Figure 5: Jobs Added in the Information Industry by Occupation



There will be about 1,500 new art, culture, and recreation jobs created between 2007 and 2017. About 1,200 jobs will be created for natural and applied sciences and related occupations. About 1/5 of all jobs created in this industry will be business and finance occupations, a total of about 850 new jobs by 2017.

Table 3: Ten-Year Forecast of Jobs by Major Occupational Group – Information Industry

Occupation (1 Digit NOC)	Annual Employment											
	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
A Management occupations	2,396	2,451	2,540	2,585	2,663	2,721	2,787	2,843	2,904	2,959	3,015	3,069
B Business, finance and administration occupations	4,853	4,911	5,037	5,095	5,215	5,301	5,398	5,474	5,559	5,632	5,703	5,770
C Natural and applied sciences and related occupations	3,977	3,769	3,899	4,012	4,079	4,135	4,283	4,429	4,560	4,685	4,831	4,981
E Occupations in social science, education, government service and religion	202	200	205	209	216	224	232	240	249	258	267	276
F Occupations in art, culture, recreation and sport	4,038	4,239	4,117	4,354	4,432	4,632	4,778	4,969	5,148	5,345	5,539	5,744
G Sales and service occupations	2,245	2,261	2,291	2,248	2,321	2,381	2,444	2,488	2,554	2,616	2,678	2,738
H Trades, transport and equipment operators and related occupations	1,920	1,977	1,985	2,020	2,072	2,123	2,180	2,237	2,299	2,357	2,414	2,469
I Occupations unique to primary industry	143	153	160	168	176	183	190	197	204	211	217	224
Grand Total	19,775	19,961	20,234	20,691	21,174	21,700	22,292	22,876	23,478	24,062	24,664	25,271

Table 4: Top 50 Occupations Adding Jobs From 2007-2017⁵

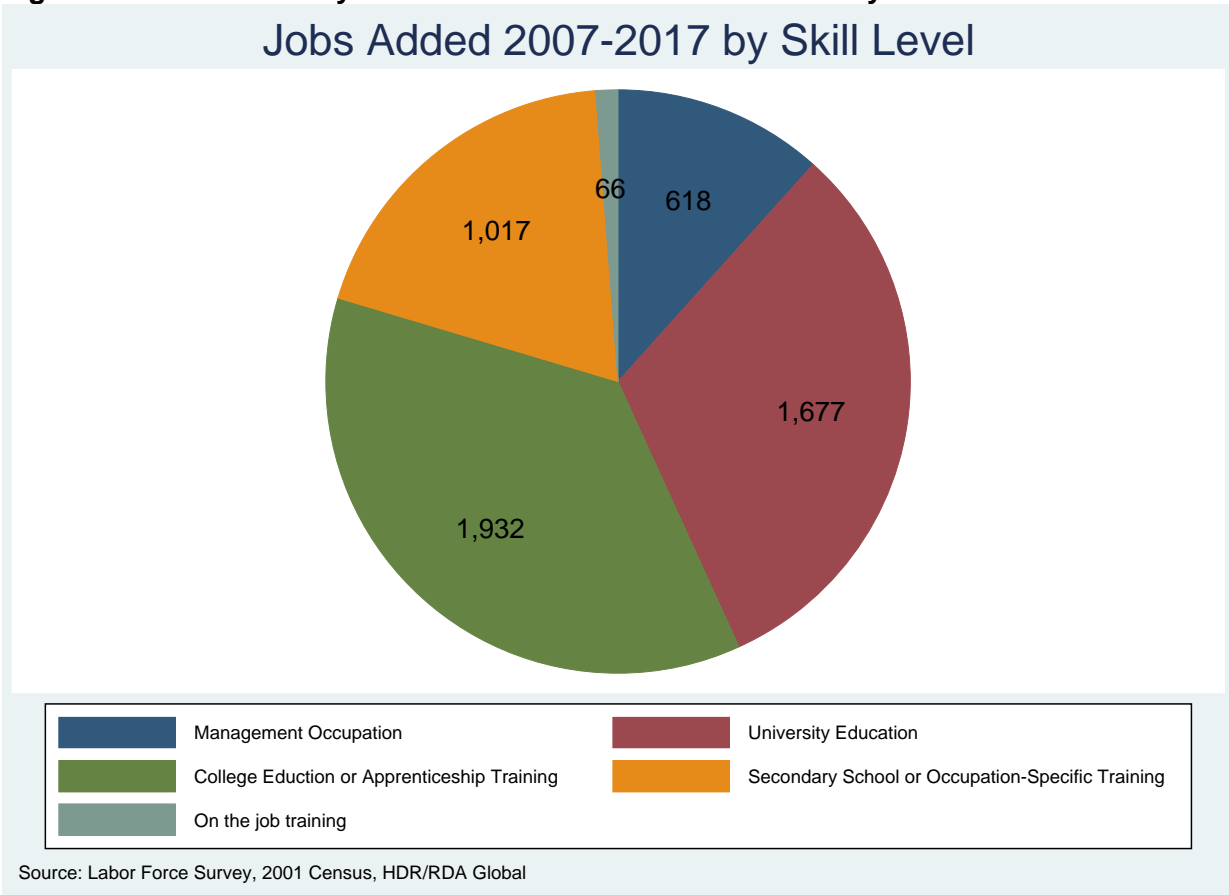
Rank	Occupation (4 Digit NOC)	Employees				Jobs Created
		1987	1997	2007	2017	2007-2017
1	F031 Producers, directors, choreographers and related occupations	467	673	786	1,057	271
2	B553 Customer service, information and related clerks	701	922	1,218	1,453	235
3	H216 Telecommunications installation and repair workers	515	695	868	1,089	222
4	F023 Journalists	294	431	478	676	197
5	A311 Telecommunication carriers managers	333	589	650	836	186
6	C071 Information systems analysts and consultants	314	480	575	759	183
7	C181 Computer and network operators and web technicians	240	367	446	603	157
8	F011 Librarians	270	394	442	598	155
9	C074 Computer programmers and interactive media developers	314	477	568	721	153
10	C182 User support technicians	229	350	424	576	152
11	G111 Sales representatives, wholesale trade (non-technical)	338	504	746	894	148
12	C047 Computer engineers (except software engineers)	252	387	468	614	145
13	G121 Technical sales specialists, wholesale trade	287	436	633	776	143
14	F111 Library and archive technicians and assistants	211	308	338	473	135
15	A131 Sales, marketing and advertising managers	293	511	549	674	125
16	F022 Editors	189	277	306	428	122
17	F125 Audio and video recording technicians	193	277	324	436	112
18	G211 Retail salespersons and sales clerks	292	398	503	606	104
19	F131 Announcers and other broadcasters	155	230	255	359	104
20	H215 Telecommunications line and cable workers	236	318	392	484	92
21	F122 Film and video camera operators	146	211	245	332	86
22	C141 Electrical and electronics engineering technologists and technicians	116	178	213	298	86
23	F126 Other technical and co-ordinating occupations in motion pictures, broadcasting and the performing arts	129	183	214	287	74
24	C072 Database analysts and data administrators	106	161	197	270	73
25	B511 General office clerks	226	295	387	459	72
26	F127 Support occupations in motion pictures, broadcasting and the performing arts	129	183	219	288	69
27	J182 Camera, platemaking and other pre-press occupations	70	89	139	203	65
28	H521 Printing press operators	141	187	229	289	60
29	A361 Other services managers	122	206	229	286	57
30	F021 Authors and writers	115	170	182	238	56
31	F141 Graphic designers and illustrators	174	253	263	318	55
32	C073 Software engineers	121	184	217	270	53
33	B522 Data entry clerks	180	235	316	368	52
34	B531 Accounting and related clerks	169	220	288	339	51
35	F124 Broadcast technicians	75	111	124	175	51
36	E033 Business development officers and marketing researchers and consultants	71	122	145	195	49
37	C142 Electronic service technicians (household and business equipment)	64	97	116	164	47
38	H217 Cable television service and maintenance technicians	104	141	175	220	45
39	A342 Managers, publishing, motion pictures, broadcasting and performing arts	72	126	141	185	44
40	G973 Other elemental sales occupations	120	170	204	247	43
41	A122 Computer and information systems managers	135	235	247	290	43
42	C033 Electrical and electronics engineers	71	109	128	169	42
43	B552 Correspondence, publication and related clerks	111	143	194	234	39
44	C075 Web designers and developers	109	166	200	237	37
45	B524 Telephone operators	89	117	154	191	37
46	B551 Library clerks	117	152	212	248	36
47	H012 Contractors and supervisors, electrical trades and telecommunications occupations	94	108	138	171	33
48	C112 Geological and mineral technologists and technicians	41	62	77	109	32
49	B311 Administrative officers	166	197	206	238	32
50	C013 Geologists, geochemists and geophysicists	36	54	67	97	30
	Others	1,775	2,601	3,125	3,744	619
	Grand Total	11,317	16,489	19,961	25,271	5,310

⁵ Note that these job creations in Figure 6 capture only jobs created in the Information industry and do not represent total job creations for all of Calgary. Jobs with these occupations will also be created in other industries.

EMPLOYMENT GROWTH BY SKILL LEVEL – INFORMATION INDUSTRY

From a skill level perspective, there will be about 600 new management occupations, 1,900 jobs requiring some college education or apprenticeship training, 1,000 jobs which require secondary school or occupation-specific training, about 1,700 that require university training and about 66 that require only on the job training.

Figure 6: Jobs Added by Skill Level in the Information Industry



APPENDIX 1: SECTOR DEFINITION – INFORMATION AND CULTURAL INDUSTRIES

This sector comprises establishments primarily engaged in producing and distributing (except by wholesale and retail methods) information and cultural products. Establishments providing the means to transmit or distribute these products or providing access to equipment and expertise for processing data are also included.

The unique characteristics of information and cultural products, and of the processes involved in their production and distribution, distinguish this sector from the goods-producing and services-producing sectors. In particular,

- the value of these products lies in their information, educational, cultural or entertainment content, not in the format in which they are distributed. Most of these products are protected from unlawful reproduction by copyright laws. Only those possessing the rights to these works are authorized to reproduce, alter, improve and distribute them. Acquiring and using these rights often involves significant costs.
- the intangible nature of the content of information and cultural products allows for their distribution in various forms. For example, a movie can be shown at a movie theatre, on a television broadcast, through video on demand, or rented at a local video store; a sound recording can be aired on radio, embedded in multi-media products or sold at a record store; software can be bought at retail outlets or downloaded from an electronic bulletin board; a newspaper can be purchased at a newsstand or received on-line. In addition, improvements in information technology are revolutionizing the distribution of these products. The inclusion in this sector of telecommunications carriers and Internet access providers reflects the increasingly important role these establishments play in making these products accessible to the public.

The main components of this sector are the publishing industries (except exclusively on Internet), including software publishing, the motion picture and sound recording industries, the broadcasting industries (except exclusively on Internet), the internet publishing and broadcasting industries, the telecommunications industries, the internet service providers, web search portals, data processing industries, and the other information services industries. There are establishments engaged in culture-related activities that are classified in other sectors of NAICS. The most important are listed below.

Exclusion(s): Establishments primarily engaged in:

- duplicating information or cultural products in print form, or in the form of optical or magnetic media (31-33, Manufacturing)
- wholesaling information and cultural products such as newspapers, books, software, videocassettes, DVDs and sound recordings (41, Wholesale Trade)
- retailing information and cultural products such as newspapers, books, software and sound recordings (44-45, Retail Trade)
- design activities (54, Professional, Scientific and Technical Services)
- producing live presentations that involve the performances of actors and actresses, singers, dancers, musical groups and artists, and other performing artists (71, Arts, Entertainment and Recreation)

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- performing in artistic productions, and in creating artistic and cultural works or productions as independent individuals (71, Arts, Entertainment and Recreation)
- preserving and exhibiting objects, sites, and natural wonders of historical, cultural and/or educational value (71, Arts, Entertainment and Recreation)

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