



## **Detailed Presentation**

**Chuck Vollmer, Jobenomics Founder & President**

**Leann Hackman-Carty, Jobenomics Canada Director**

**12 March 2019**

# Overview



## Economic, Community, Business and Workforce Emphasis

<b>Traditional</b>	<b>Jobenomics</b>
Standard Economy	Digital Economy
Big Business	Small Business
Employers	Employers & Nonemployers
Real Estate Development	Community Development
Well Resourced Communities	Marginalized Communities
High-Skilled Labor Force	Lower-Skilled Labor Force
Degree-Based Education	Certified Skills-Based Training
White-Collar Business Incubators	No-Collar Business Generators
Energy Production	Energy Services
Outdoor Agriculture	Indoor Agriculture
Waste Management	Urban Mining
Centralized Care	Direct Care
Tourism	Experiential Tourism

Economic growth is dependent on initiatives that promote robust business and job creation for people at **all** levels in society.

# Jobenomics



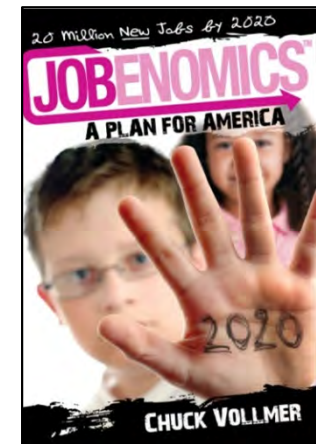
## Bipartisan National Grassroots Movement

- Since 2010, estimated audience of 30 million
- Website averages 30,000 monthly page views
- Jobenomics America TV, a weekly show, airs on Dish, DirecTV, Amazon, Apple & Roku



## Books and Research

- First book established goal of 20 million new jobs
- Ten free e-books on economic, community, small business and workforce development
- Special reports on global and national issues



## City and State Initiatives and Programs

- Over two dozen initiatives led by local community leaders
- Two highly-scalable national turnkey programs

**Primary focus: Mass-produce startup businesses and jobs  
In under-served and under-resourced communities.**



# Jobenomics Research E-Books



Extensive research on the economy, policy-making, labor force situation, emerging technologies, and urban/rural renewal initiatives.



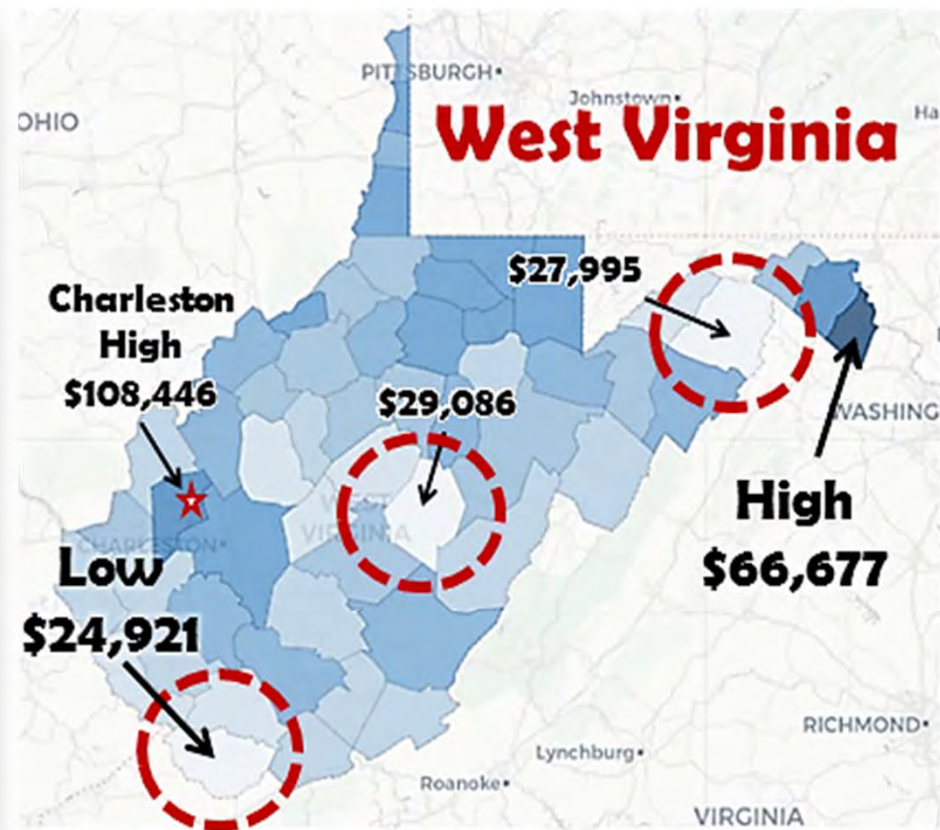
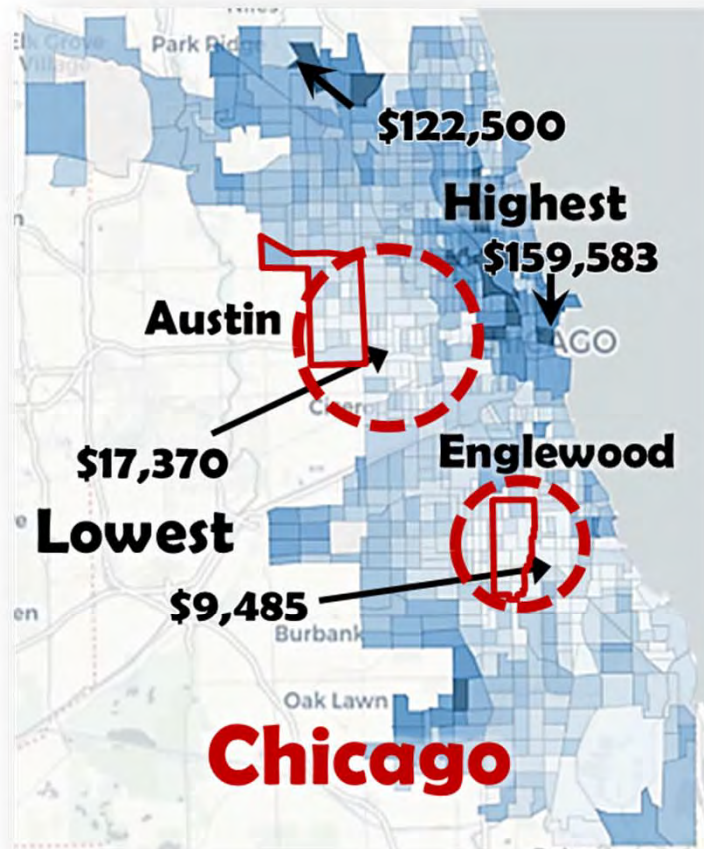
# Under-Resourced Community Focus

**Urban Renewal**



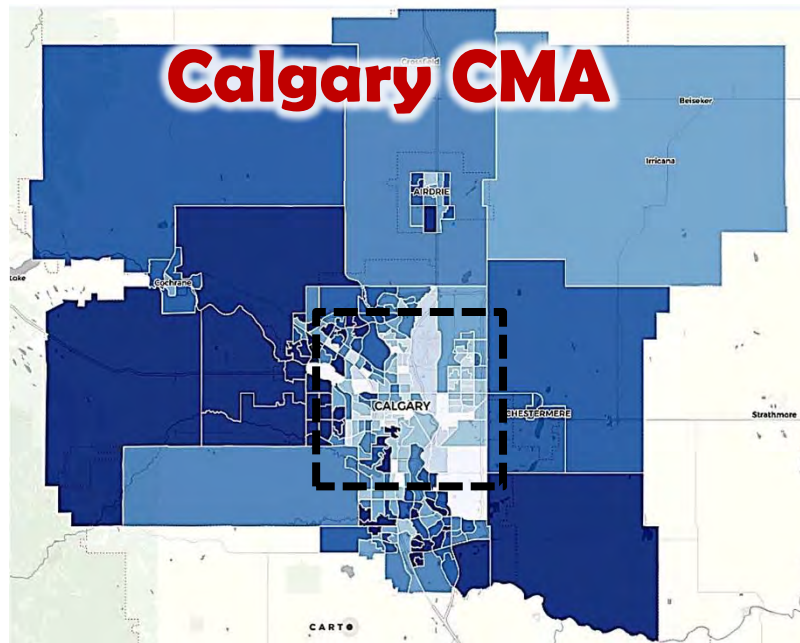
**Rural Revival**

Median Household Income



Jobenomics focuses on under-resourced, lower-skilled and marginalized **urban** and **rural** communities.

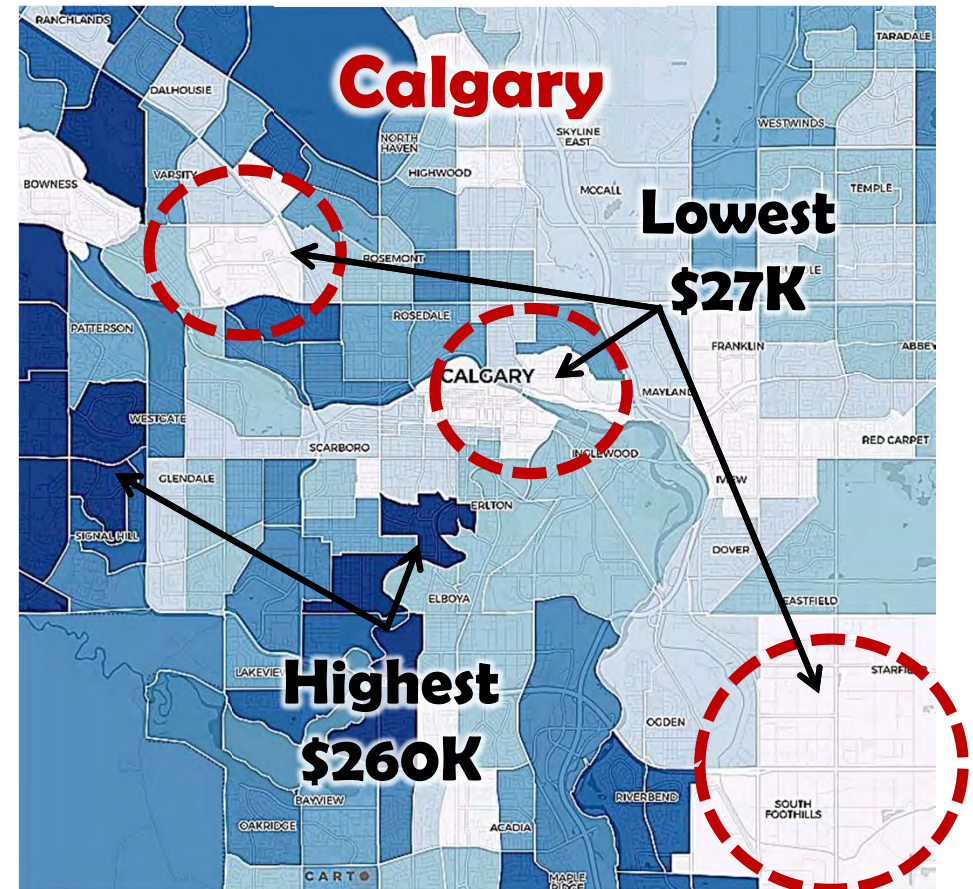
# Under-Resourced Areas In Calgary



Median Household Income, 2016  
27K 260K



Map source: Carto.com

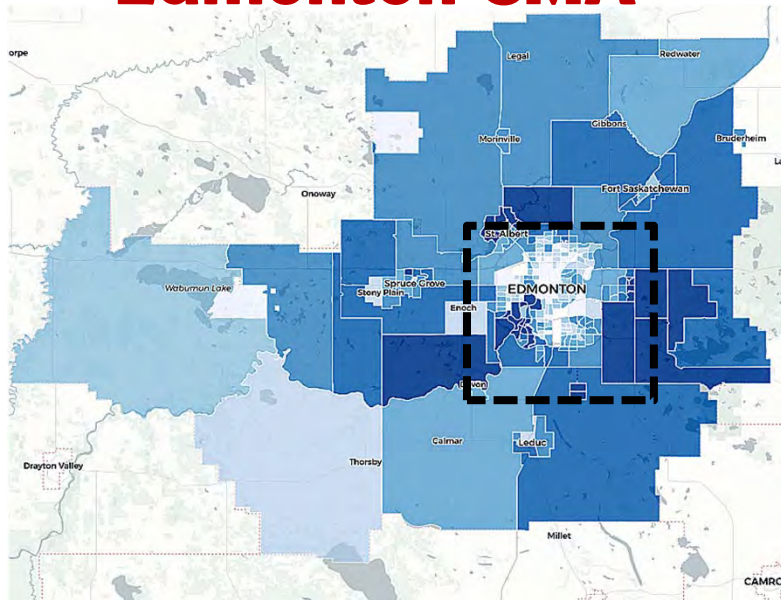


Jobenomics Alberta can help the 100,000 Calgarians who live on less than \$12,000/year and want to **work** their way out of poverty.



# Under-Resourced Areas In Edmonton

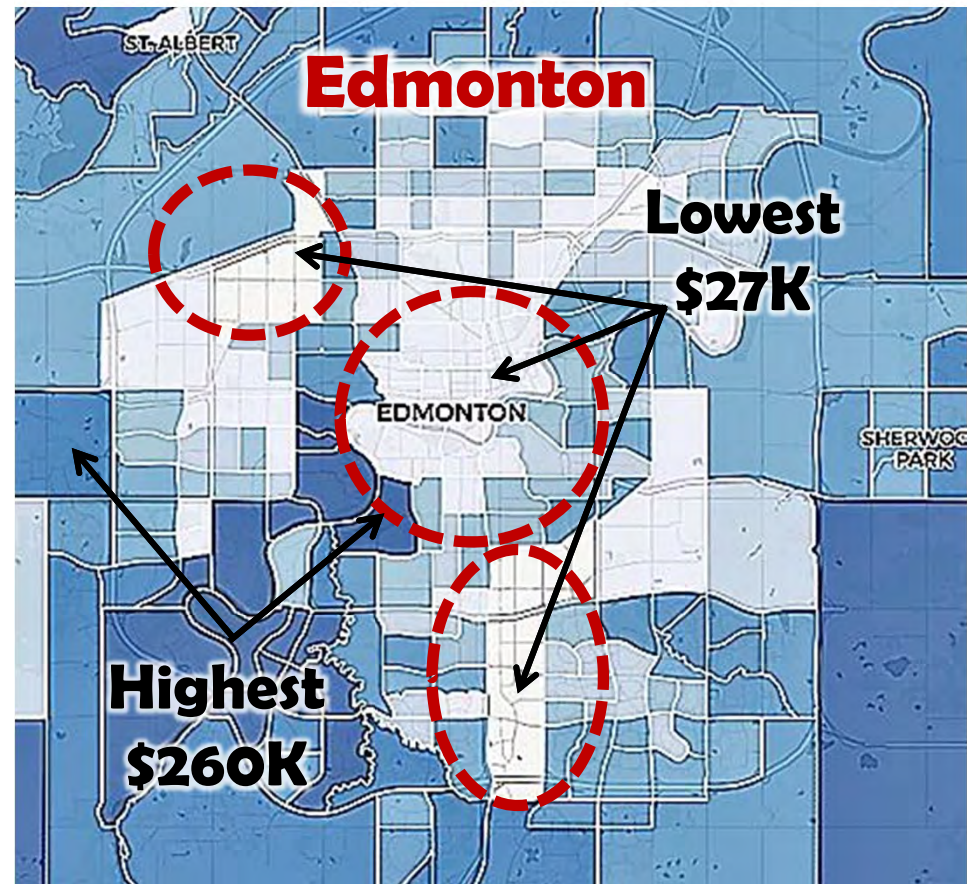
## Edmonton CMA



Median Household Income, 2016  
27K 260K



Map source: Carto.com



Jobenomics Alberta can help 1 in 8 Edmontonians who make less than \$16,968/year for a single person and \$33,936/year for a family of four,



# Jobenomics Alberta



- To escape from poverty, the poor need productive jobs that lead to higher income.
- You can become an employee, or self-employed.
- Real opportunity to prioritize micro-employer and nonemployer business creation.
- Entrepreneurship can help reduce poverty:
  - ✓ Provides tools to improve circumstances vs. aid
  - ✓ Gives people means to achieve a sustainable income.
  - ✓ Improves overall economic growth.



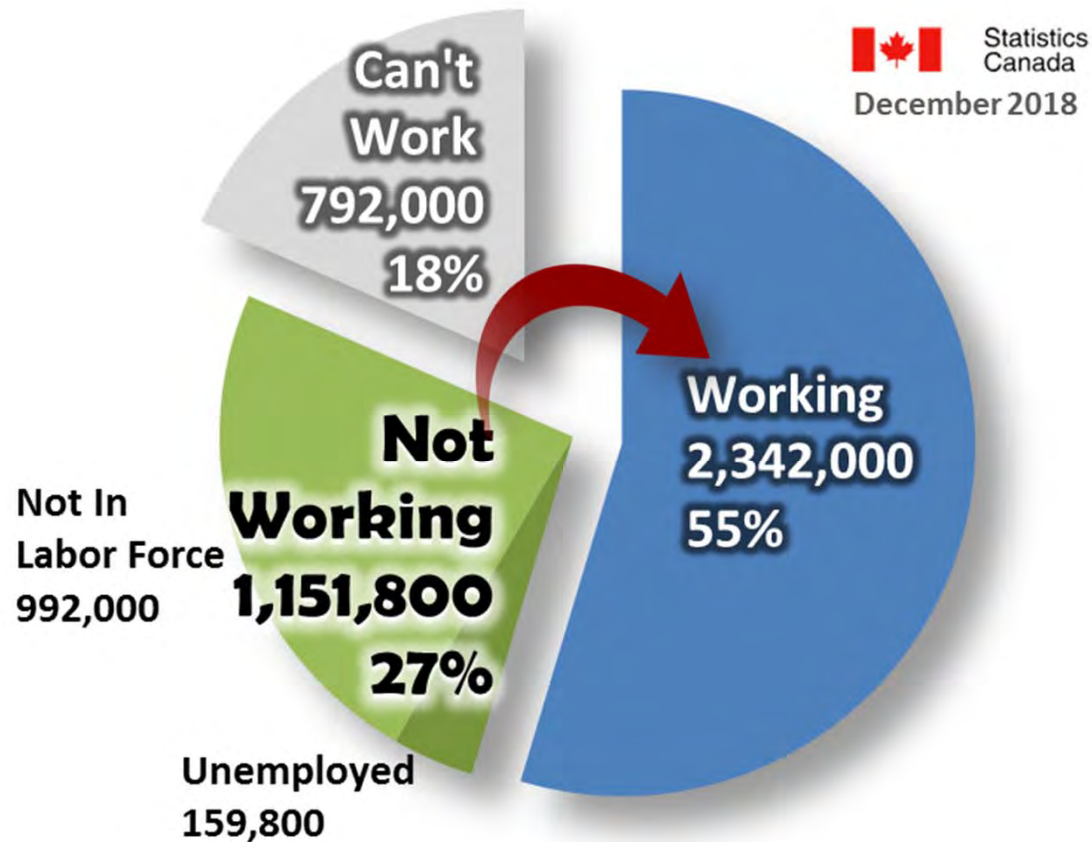
**“ It's more bad news: Report suggests thousands of workers gave up job search in Calgary.”** 7 January 2019

**“ 100,000+ Edmontonians live in poverty.”** **endpoverty**  
edmonton

**Poverty costs Albertans about \$7.1 to \$9.5 billion per year.**

# Primary Challenge: Help Sidelined Workers Rejoin Alberta's Labour Force

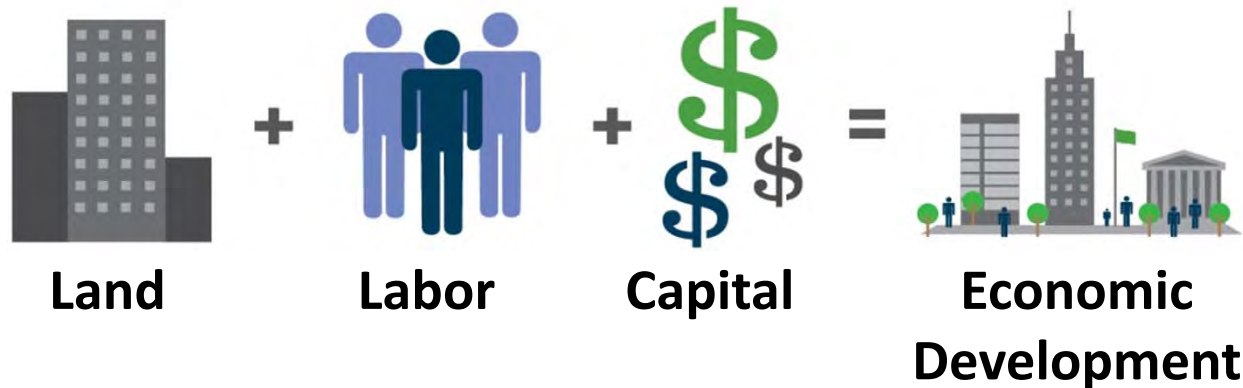
Alberta's Total Population: 4,286,134



“The Unemployed are people without work, are available for work, and are **actively seeking** work. Persons Not in Labour Force are **unwilling or unable** to offer or supply labour services.” *Statistics Canada*

# A Different Approach To Economic And Community Development

## Traditional **Top-Down** Approach



## Jobenomics **Bottom-Up** Approach



# Economic Development Emphasis



<b>Development Category</b>	<b>Traditional Economic Development Emphasis</b>	<b>Jobenomics Economic Development Emphasis</b>
<b>Economy</b>	Established Industry Supersectors in The Traditional Economy	Fill Open Jobs and New Opportunities in Emerging Digital And Energy Economies
<b>Community</b>	High-Skilled, Well-Resourced State, Regional and Metropolitan Areas	Lower-Skilled, Marginalized Inner-City Neighborhoods and Rural Areas
<b>Business</b>	Large-Scale Business and Real Estate Opportunities	Mass-Produce Highly-Scalable Micro-Businesses
<b>Workforce</b>	Standard Workforce Agreements. Degree-Based Education	Alternative Workforce Agreements. Certified Skills-Based Training

Jobenomics bottoms-up approach is synergistic with top-down economic development models.

# Economic Development Conundrum



## Traditional **Top-Down** Approach

Attract 1 Large  
\$100,000,000/year  
Enterprise



## Jobenomics **Bottom-Up** Approach

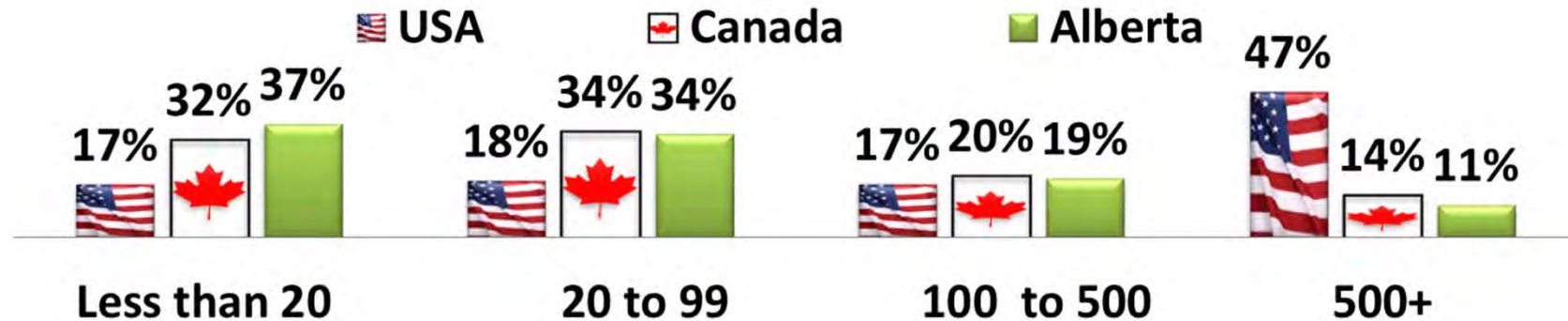
Start 1,000  
\$100,000/year  
Micro Businesses



Under-resourced communities have difficulty attracting big companies  
but can mass-produce **small employer** and **nonemployer** businesses.

# Canadian Employer Establishments

## Employer Establishment Employment



Government  
of Canada

## Employer Businesses by Size and Number

	Small (1–99)	Medium (100–499)	Large (500+)	Total	Number of SMEs per 1,000 Population
Canada	1,143,630	21,415	2,933	1,167,978	39
	97.9%	1.8%	0.3%	100%	
Alberta	165,792	3,076	437	169,305	50
	97.9%	1.8%	0.3%	100%	



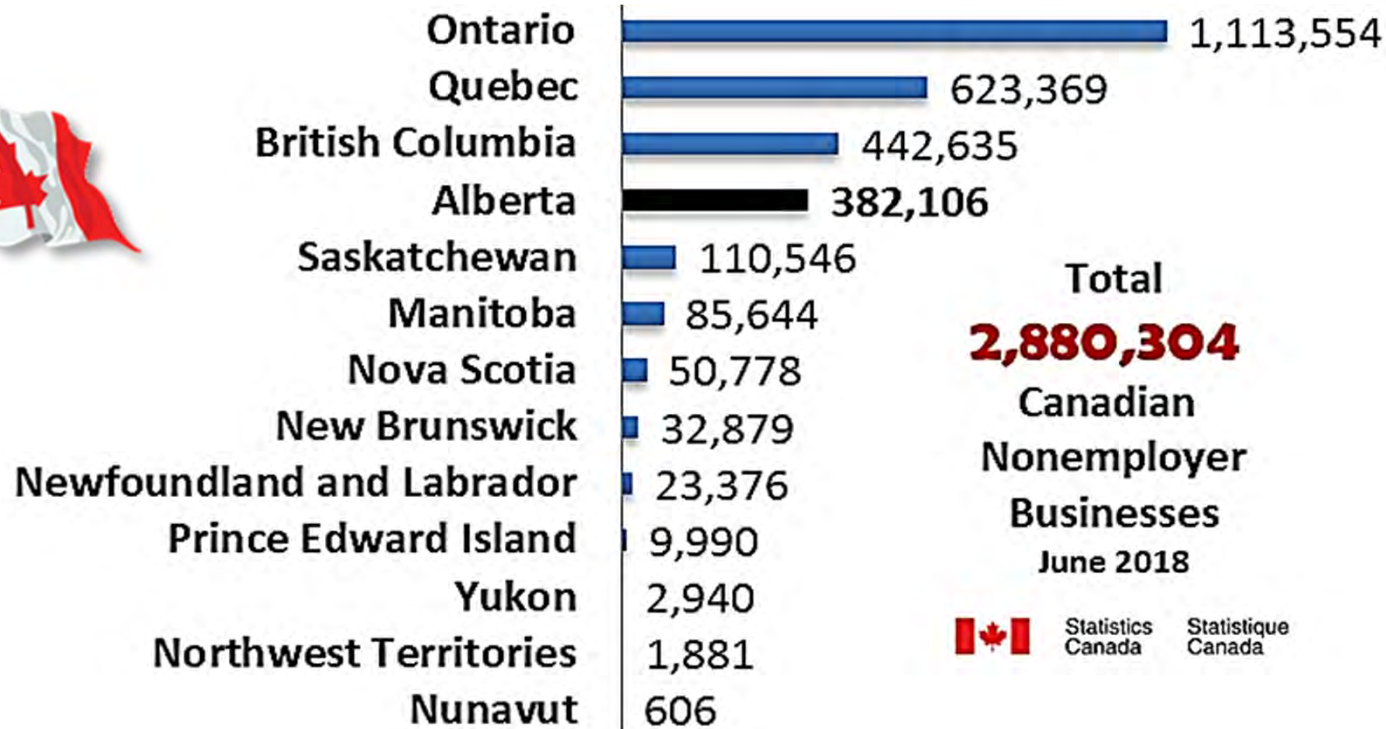
Statistics  
Canada

## “Small business is big in Canada”

- **98%** of all Canadian businesses are small (1-99 employees).
- **90%** of exporting companies are small businesses (1-99 employees).
  - **71%** of all Canadians are employed by small businesses.



# Canadian Nonemployer Establishments



## “Indeterminate” Establishments With **Over \$30,000** Revenue

- Establishments with no or an indeterminate quantity of employees.
- No employee payroll but may have contracted workers or family.
- Data from payroll remittances by the Canada Revenue Agency.

**Nonemployers and Self-Employed are about the same (2,889,304 and 2,866,800), so the true number of Nonemployers are **underreported**.**

# Nonemployer Establishments



- A nonemployer is a small business with no “paid” employees.
- Few Americans, Canadians and policy-makers understand the scope and economic impact of Nonemployer establishments.
- Nonemployers are largely excluded from major U.S and Canadian Household and Payroll surveys. Data is obtained from tax records.
- Nonemployer firms are growing significantly faster than traditional business and population growth.

**Statistics Canada reports 15.9 million private sector employees and 2.9 million nonemployer owners. 2.9 million equates to 18% the size of Canada’s entire private sector workforce (24% in the USA).**

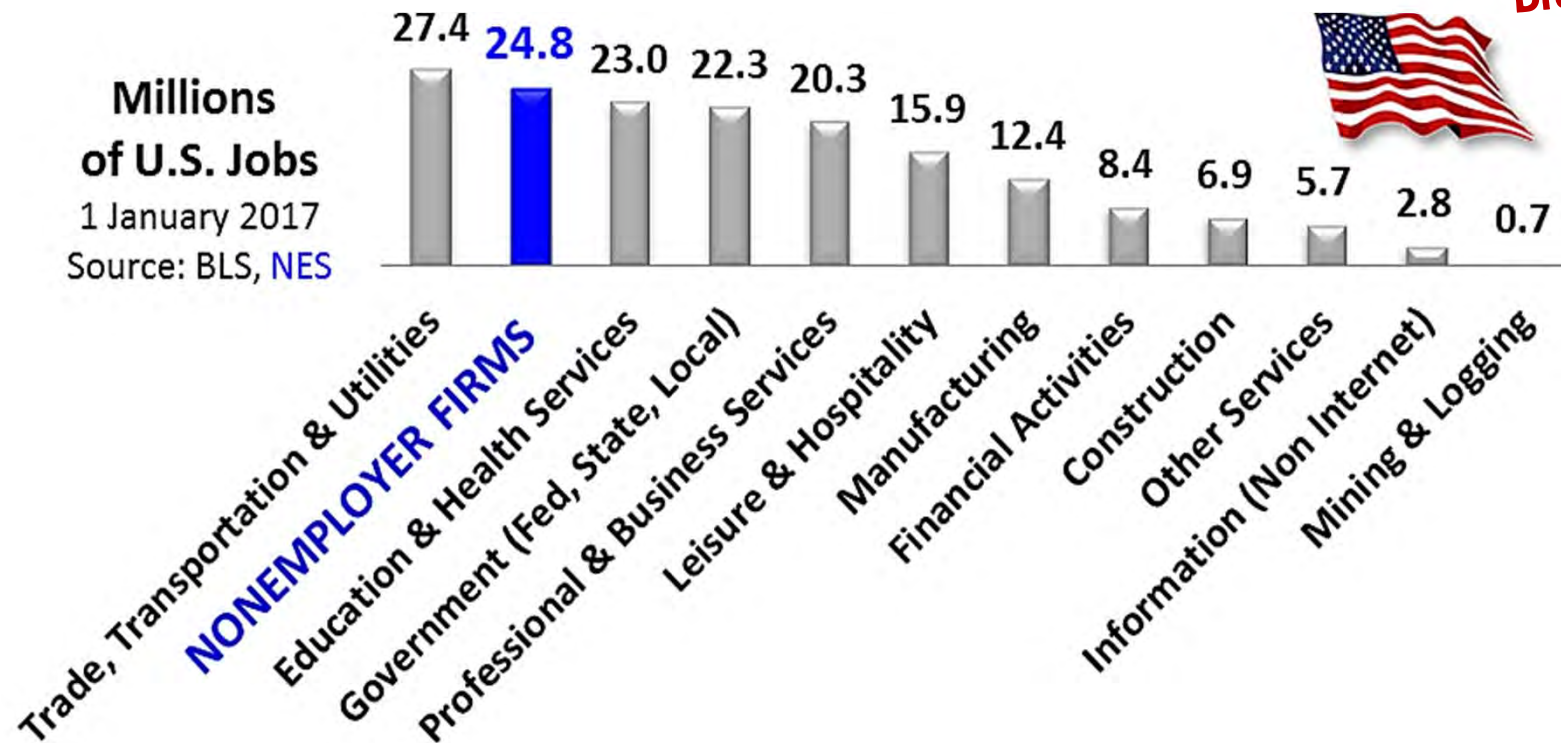
# Nonemployer Descriptions

- **Self-Employed** (earn income from one's own business rather than as a specified salary or wages from an employer)
- **Independent Contractors** (construction workers, accountants, authors, bookkeepers, engineers, masons, real estate agents, teachers)
- **Consultants** (professional services human resources, financial, information technology, management),
- **Freelancers** (administrative support, design, legal, journalists, tutors, marketing and sale, web and apps developers, etc.)
- **On-Demand Workers** (executives, doctors, nurses, healthcare aides, Uber drivers, operations and technical support, security analysts)
- **Flex Workers** (analysts, apps developers, loan officers, engineers, educational and technical assistants, food service and bartenders)
- **Gig Workers** (artists, actors, entertainers, delivery drivers, coders, programmers, handyman, photographers, and care givers)
- **Part-Timers** (who work less than 40 per week out of necessity or choice and workers who work full-time via multiple part-time jobs.)

**Alberta should prioritize micro-employer and nonemployer business creation. These businesses and employees are more anchored in Alberta than large business, and are less likely to migrate.**



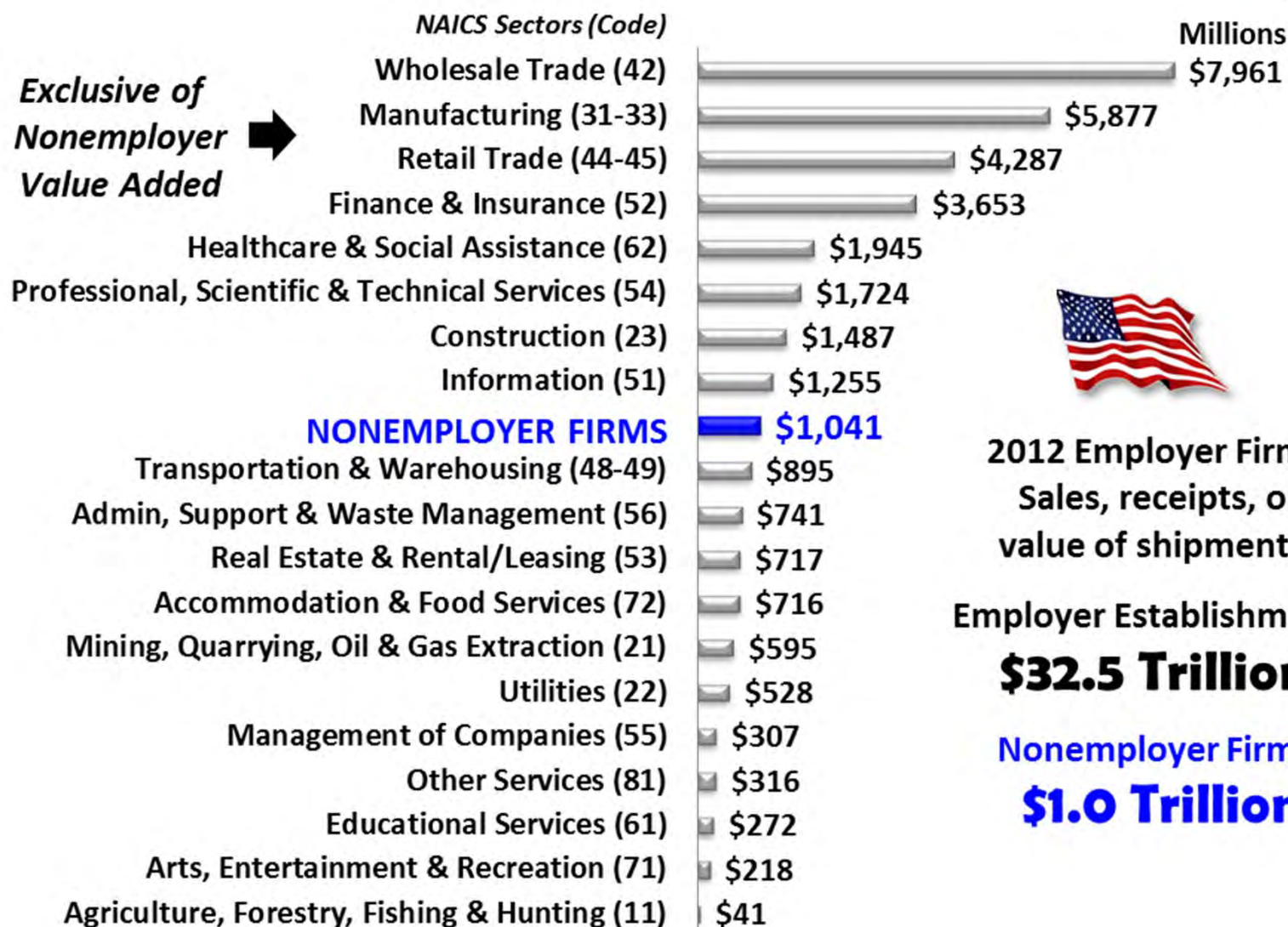
# 25 Million U.S. Nonemployer Firms



- 25 million firms growing twice as fast as employer establishments.
- Receipts \$1.2 Trillion/year, average receipts \$48K/year.
  - 63% unincorporated full & part-time proprietorships, \$34K/year
  - 37% incorporated firms (S-Corp, C-Corp, LLC), \$129K/year

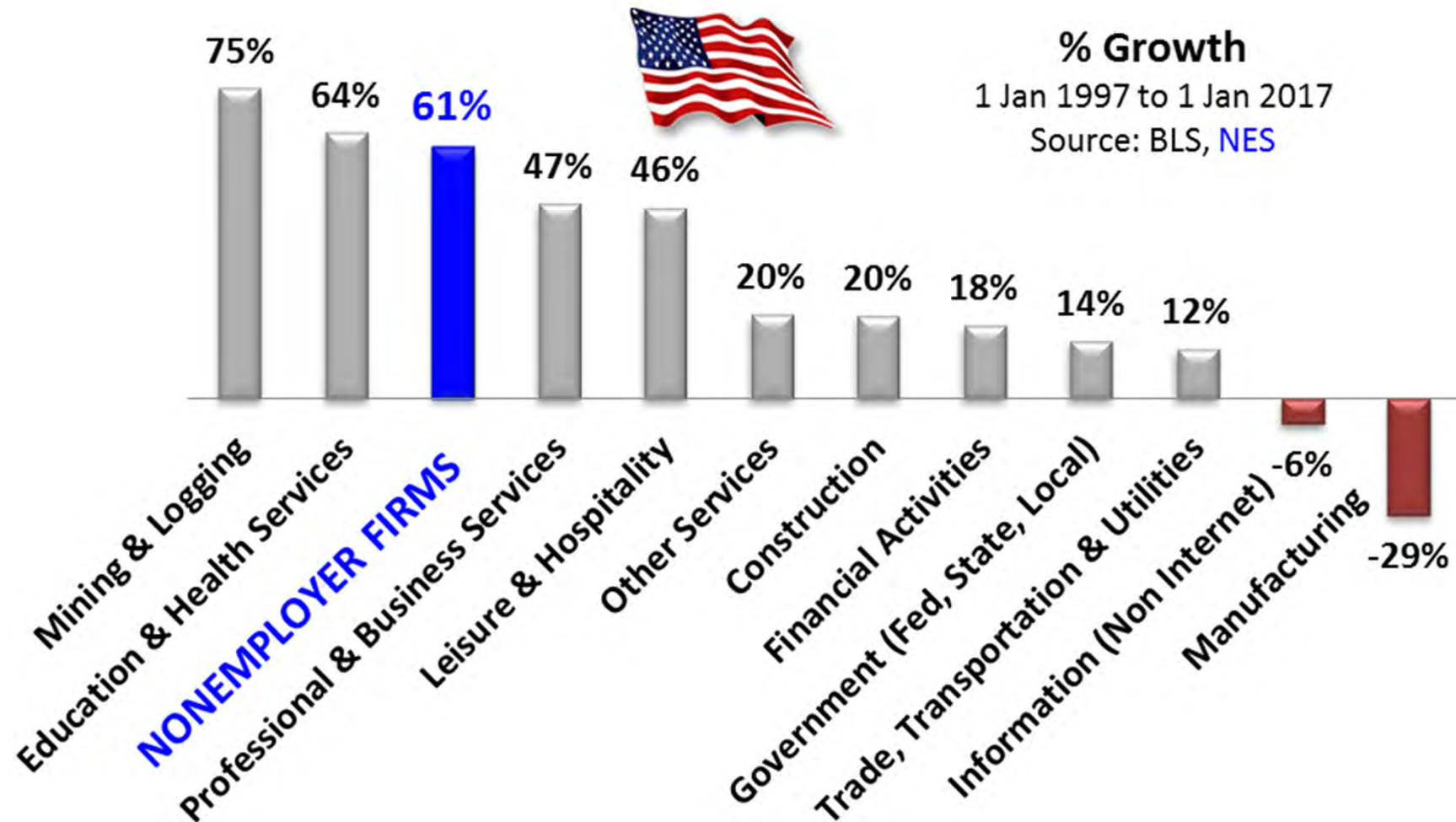
**Compared to employer owners, nonemployer owners are younger and more diverse in terms of race, ethnicity and gender.**

# U.S. Nonemployer Economic Impact



While total nonemployer economic impact is only 3% of all U.S. employers, it is higher than 60% of the U.S. industries listed above.

# U.S. Nonemployer Growth Rate



Compared to employer owners, owners of nonemployer businesses are younger and more diverse in terms of race, ethnicity and gender.



# Key Canadian Small Business Statistics



June 2016  Innovation, Science and  
Economic Development Canada




- **Nonemployer Firms:** **excluded** from “*Key Small Business Statistics*”
- **Employer Businesses.** 1.17 million total, **97.9% small (1-99 employees)**, 1.8% medium (100-499) and 0.3% (500+) large
- **Private Sector Employment.** 8.2 million total, **70.5% small**, 19.8% medium, 9.7% large
- **Job Growth (2005-2015).** **87.7% small**, 7.7% medium, 4.6% large
- **Small & Medium Enterprise (SME) Demographics:**
  - **Female owned 15.7%.** Jointly female and male owned 19.7%
  - **Age (Small only).** **59.2% 50+ years**, 26.1% 40-49, 14.7% 30-39
  - **Minority (20% of population) owned businesses not addressed**
- **Small Business Contribution To GDP:** Canada 30%, **Alberta 32%**

**Jobenomics specializes in mass-producing women-owned, minority-owned, Gen Y/Z-owned and veteran-owned startup businesses.**

# Key Canadian Labour Force Statistics

**BOTH SEXES** December 2018

**Canada** Workforce Population (15+)




Canada			
30,485,200	100%	 Statistics Canada	 
<b>Not in Labour Force</b> (can work not looking)	<b>10,551,700</b>	<b>35%</b>	
In Labour Force (Employed + Unemployed)	19,933,500	65%	
Employed	18,808,400	94.4%	
Unemployed	1,125,100	5.6%	

**Not in Labor Force (NiLF)** to **Unemployed** ratio is **9.4 to 1**

Non Working population (**NiLF & Unemployed**) is **62%** the size of the **Employed** workforce.

**BOTH SEXES** December 2018

**Alberta** Workforce Population (15+)

Alberta Province			
3,493,800	100%	 Statistics Canada	 
<b>Not in Labour Force</b> (can work not looking)	<b>992,000</b>	<b>28%</b>	
In Labour Force (Employed + Unemployed)	2,501,800	72%	
Employed	2,342,000	93.6%	
Unemployed	159,800	6.4%	



**Not in Labor Force (NiLF)** to **Unemployed** ratio is **6.2 to 1**

Non Working population (**NiLF & Unemployed**) is **49%** the size of the **Employed** workforce.

**Not in Labour Force** is significantly bigger than the **Unemployed**.  
Alberta's labour market is much "tighter" than Canada's.

# Alberta Labour Force By Gender



## **FEMALES** *December 2018*

Alberta Province				
Alberta Workforce Population (15+)	1,734,200	100%	 Statistics Canada	
Not in Labour Force (can work not looking)	587,400	34%		
In Labour Force (Employed + Unemployed)	1,146,800	66%		
Employed	1,079,900	94.2%		
Unemployed	66,900	5.8%		

Not in Labor Force (NiLF) to Unemployed ratio is **8.8 to 1**

Non Working population (NiLF & Unemployed) is **61%** the size of the Employed workforce.

## **MALES** *December 2018*

Alberta Province				
Alberta Workforce Population (15+)	1,759,600	100%	 Statistics Canada	
Not in Labour Force (can work not looking)	404,600	23%		
In Labour Force (Employed + Unemployed)	1,355,000	77%		
Employed	1,262,100	93.1%		
Unemployed	92,900	6.9%		

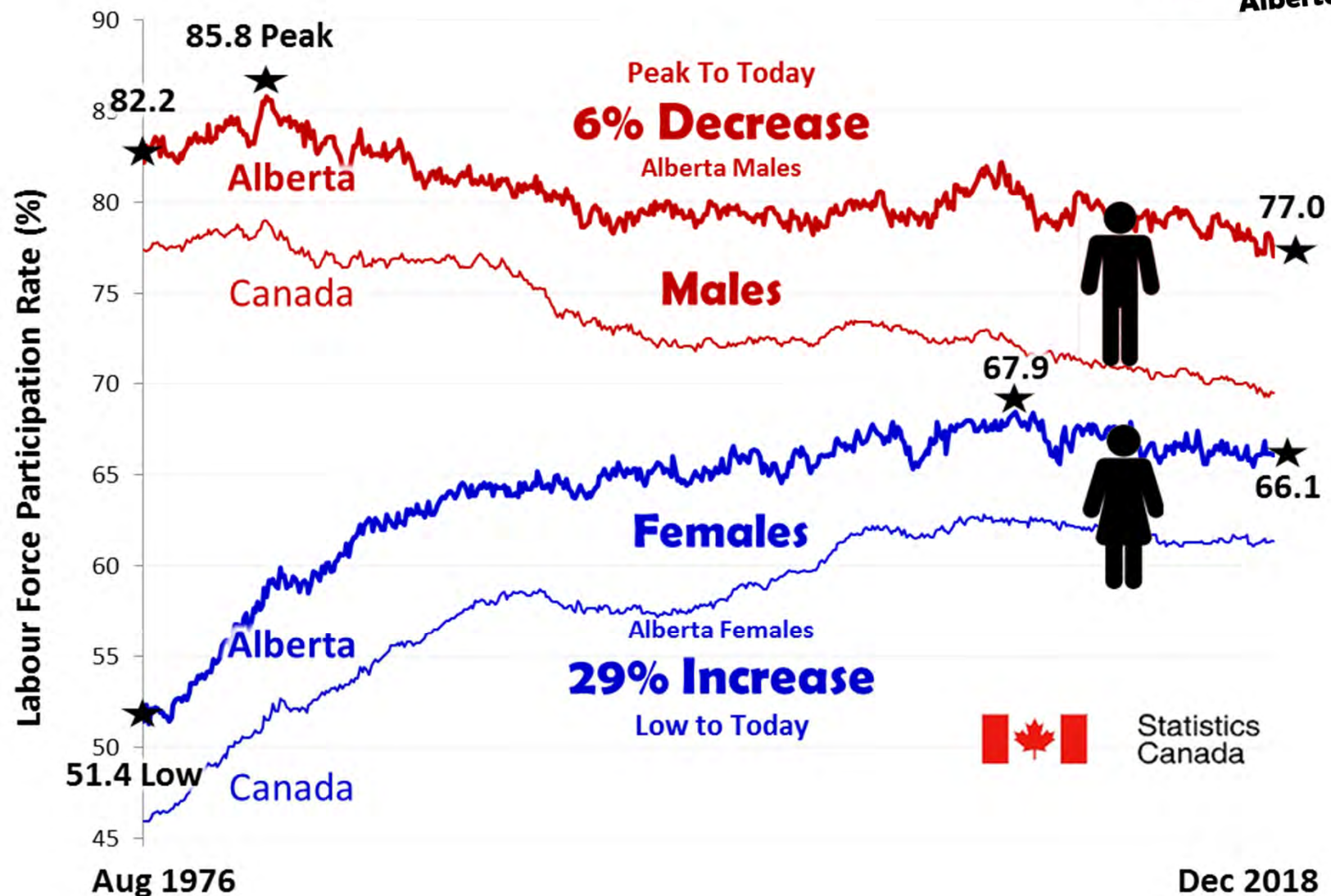
Not in Labor Force (NiLF) to Unemployed ratio is **4.4 to 1**

Non Working population (NiLF & Unemployed) is **39%** the size of the Employed workforce.

**Canadian women are an underused resource.**



# Labour Force Participation Rate



Since 1976, Alberta's female participation increased +29% while males decreased -6%. In 2006, female participation started declining.

# Canadian Women Entrepreneurs



- Canada's **Women Entrepreneurship Strategy** **\$2 billion** investment seeks to double the number of **female-owned** and **female-led** businesses by 2025.
  - **WES Ecosystem Fund** (training, networking, incubators, etc.)
  - **Women Entrepreneurship Knowledge Hub** (data & best practices)
  - **Women Entrepreneurship Fund** (grants, debt/equity financing)

- “We have the potential of adding up to **\$150 billion dollars** in incremental GDP to the Canadian economy,” *Mary Ng, Minister of Small Business and Export Promotion*



**“Women have been at the forefront, launching businesses at rates that often outpace men.”** *Karen Hughes, University of Alberta*

# Functional Unemployment

- The ability to work should be the determinant for unemployment as opposed to whether or not a person is looking for work. Jobenomics contends that people who can work, regardless if they are looking or not, are “**functionally unemployed**”.
- To be unemployed, one must want a job, be looking for work in the last 4-weeks, not working during the last 12-months, and take a job if offered. If one answers no to any of these four survey questions, one is enrolled in the Not in Labour Force category.
- Consequently, it is **theoretically possible to have a zero rate of unemployment** if all unemployed people simply quit looking for work and joined those in the Not-in-Labor-Force.
- From Dec 2015 to Dec 2018, the number of Alberta’s **Unemployed** (looking for work) **decreased by 14,600** and the number in **Not in Labour Force** (can work but not looking) **increased by 69,600**.

By focusing on functional unemployment, as opposed to unemployment, **policy-makers could make better decisions** regarding labor force resources and public assistance expenditures



# Working/Non Working Statistics

As a Percentage of Persons of Working Age (15+)



Statistics  
Canada

Labour force characteristics by  
province, December 2018

	Official Unemploy- ment Rate*	Working Population			
		% Working Employed	% of Non Working Unemploy- ed**	Not in Labour Force	"Functional" Unemployment Rate
<b>Canada</b>	<b>5.6%</b>	62%	4%	35%	<b>38.3%</b>
Newfoundland and Labrador	<b>11.7%</b>	<b>51%</b>	7%	42%	<b>48.5%</b>
Prince Edward Island	<b>9.6%</b>	<b>60%</b>	6%	34%	<b>40.4%</b>
Nova Scotia	<b>7.1%</b>	<b>57%</b>	4%	38%	<b>42.8%</b>
New Brunswick	<b>8.4%</b>	<b>56%</b>	5%	39%	<b>44.1%</b>
Quebec	<b>5.5%</b>	<b>61%</b>	4%	35%	<b>39.0%</b>
Ontario	<b>5.4%</b>	<b>61%</b>	3%	36%	<b>39.1%</b>
Manitoba	<b>6.0%</b>	<b>63%</b>	4%	33%	<b>36.6%</b>
Saskatchewan	<b>5.6%</b>	<b>65%</b>	4%	31%	<b>34.7%</b>
<b>Alberta</b>	<b>6.4%</b>	<b>67%</b>	<b>5%</b>	<b>28%</b>	<b>33.0%</b>
British Columbia	<b>4.4%</b>	<b>62%</b>	3%	35%	<b>37.5%</b>
U.S. Bureau Labor Statistics					
<b>United States</b>	<b>3.9%</b>	61%	2%	37%	<b>39.3%</b>

\* % of Unemployed in the Labour Force (Employed + Unemployed) **excluding** Not in Labour Force.

\*\* % of Functionally Unemployed in the Working Population **including** Not in Labour Force.

**Alberta's Official Unemployment Rate is 6.4%.**

**Alberta's Functional Unemployment Rate is 33.0% .**

# Growth Statistics



- GDP is the best way to measure economic growth.
- Economic growth is dependent on a growing private sector business base and their labor force that produces goods and services.
- When an economy grows at sclerotic GDP rates, instability occurs and governing institutions lose their sense of legitimacy.
- Any GDP growth below 2% is sclerotic, which makes economies vulnerable to financial downturns and social unrest.

**Alberta's economy underperformed for the last 4-years. Perhaps, a new economic, business and workforce approach is warranted.**

# Alberta Industry **GDP** Growth Versus Real GDP Growth Rate Last 5-Years



	2013 GDP (\$B)	2017 GDP (\$B)	Average GDP Growth Per Year	
Arts, entertainment and recreation	1.4	1.9	7.1%	Top Performer
Finance and insurance	11.3	13.2	3.4%	Better Than GDP
Mining, quarrying, and oil and gas extraction	72.2	84.0	3.3%	
Transportation and warehousing	13.3	15.2	2.9%	
Real estate and rental and leasing	30.0	34.2	2.8%	
Health care and social assistance	16.1	18.1	2.5%	
Public administration	14.0	15.0	1.4%	Worst Than GDP
Educational services	11.2	12.0	1.4%	
Utilities	4.3	4.6	1.4%	
Administrative, waste and remediation services	7.6	7.9	0.8%	
Accommodation and food services	6.6	6.8	0.6%	
<b>ALL INDUSTRIES</b>	319.3	327.4	0.5%	<b>2.1% Canada</b>
Manufacturing	24.5	25.0	0.4%	<b>Annual Real</b>
Retail trade	13.3	13.6	0.5%	<b>GDP Growth</b>
Information and cultural industries	6.8	6.8	0.0%	<b>2014 to 2018</b>
Other services (except public administration)	6.5	6.1	-1.2%	(2.3%, 2.9%, 1.0%, 1.4%, 3.0%)
Professional, scientific and technical services	18.5	16.1	-2.6%	Negative Growth
Wholesale trade	15.5	13.6	-2.5%	
Management of companies and enterprises	2.0	1.7	-3.0%	
Agriculture, forestry, fishing and hunting	5.9	5.8	-4.4%	
Construction	38.2	27.3	-5.7%	Bottom Performer

Only 6 out of 21 sectors exceeded inflation-adjusted economic growth,



# Alberta **Job** Growth Rate Versus Real GDP Growth Rate Last 5-Years



	Dec 2014 Employment	Dec 2018 Employment	Average Annual Job Growth Rate	
Public Administration	83,400	110,600	6.5%	Top Performer
Utilities	18,100	23,800	6.3%	
Educational Services	132,200	154,300	3.3%	Better Than GDP
Business, Building and Other Support Services	80,100	92,400	3.1%	
Health Care and Social Assistance	252,800	289,600	2.9%	
Information, Culture and Recreation	72,100	77,300	1.4%	Worst Than GDP
<b>SERVICES-PROVIDING SECTOR</b>	1,637,000	1,740,700	1.3%	
Trade	312,000	325,000	0.8%	
<b>ALL INDUSTRIES JOB GROWTH</b>	2,300,200	2,342,000	0.4%	<b>2.1% Canada</b> <b>Annual Real</b> <i>(Adjusted For Inflation)</i> <b>GDP Growth</b> <b>2014 to 2018</b> <i>(2.9%, 1.0%, 1.4%, 3.0%, 2.1%)</i>
Professional, Scientific and Technical Services	182,400	181,300	-0.1%	
Finance, Insurance, Real Estate and Leasing	104,000	102,900	-0.2%	
Transportation and Warehousing	142,200	139,800	-0.3%	
Other Services	120,800	118,000	-0.5%	
Accommodation and Food Services	154,800	149,400	-0.7%	Negative Growth
Manufacturing	145,600	136,300	-1.3%	
Construction	263,500	241,200	-1.7%	
<b>GOODS-PRODUCING SECTOR</b>	663,200	601,300	-1.9%	
Forestry, Fishing, Mining, Oil and Gas	172,900	151,600	-2.5%	
Agriculture	63,000	48,400	-4.6%	Bottom Performer

Only 5 out of 18 sectors created jobs faster than real GDP growth.

# **Jobenomics Alberta**

## **Proof-of-Concept Programs**

- Controlled Environment Indoor Agriculture
- Urban Mining/Advanced Materials Reclamation
- Exploit Next-Generation Business Opportunities
  - Digital Economy Jobs & Digital Academies
  - Direct-Care/Remote-Care/On-Demand Care
  - Renewable Energy & Energy Services
  - Business Generators and E-Clubs
  - Experiential Tourism & Entertainment

**Jobenomics National Grassroots Movement**  
focus is on mass-producing small businesses and jobs.



## **Controlled Environment Agriculture (CEA) Program**

**For Under-Resourced Urban & Rural Communities**



# California 1200-Acre Freedom Farm



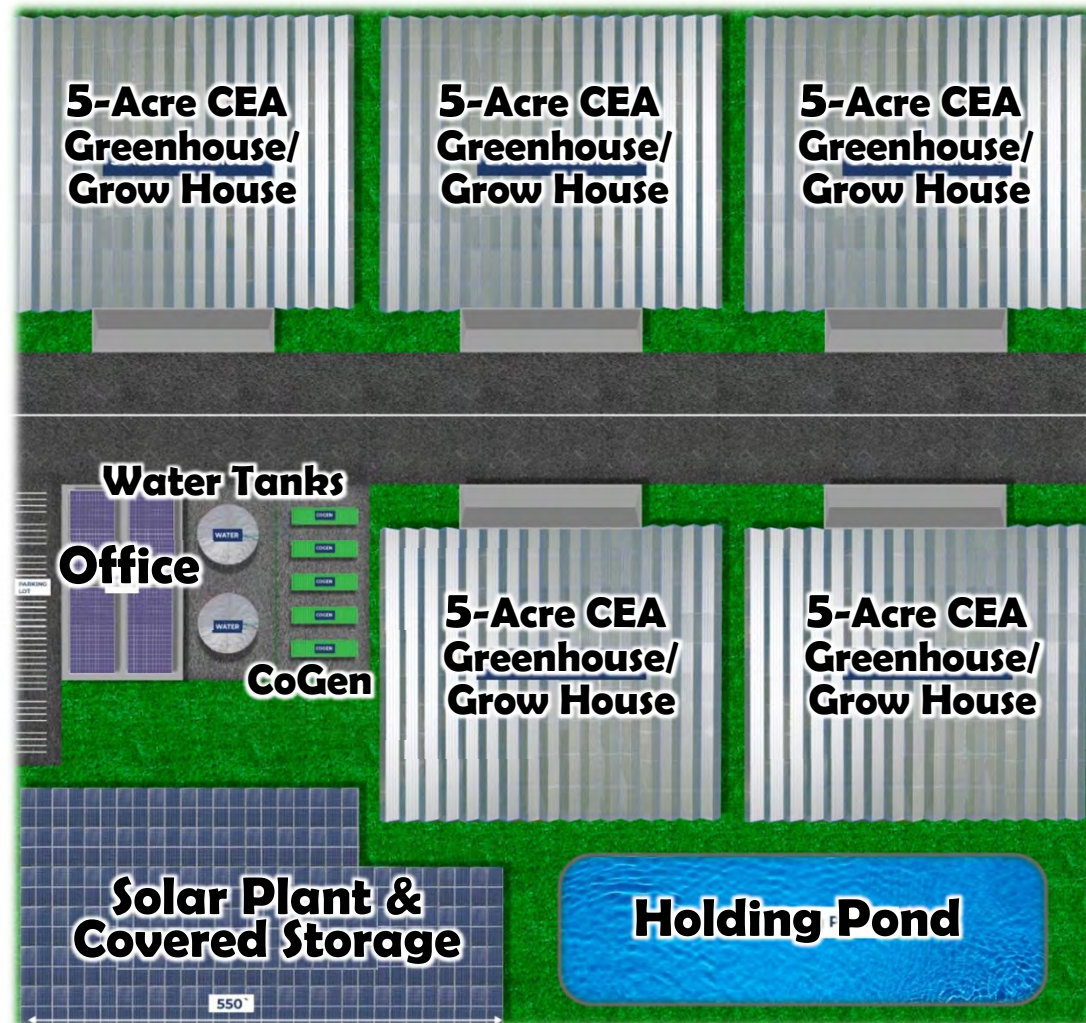
Designed by ACTSFFA/Oculus for veteran-owned businesses and homes.



**2.6 million sq. ft. of indoor controlled environment agriculture, greenhouse village, hotel, farmers market, winery, production and distribution facilities, commercial/community/education/worship centers, and 300 single-family homes on 2-acre lots.**



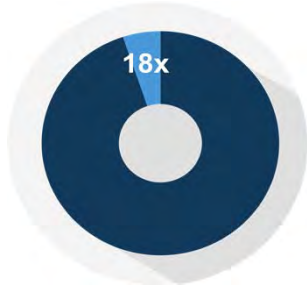
# 50-Acre Controlled Environment Agricultural (CEA) Rendering



The Jobenomics/ACTSFFA/PowerGrow team is working with leading greenhouse, grow-house and CEA vertical and hydroponic suppliers.

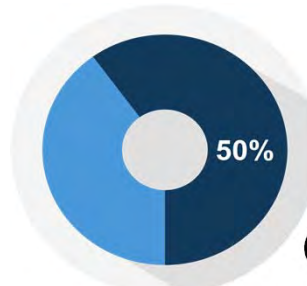
# 5-Acre Greenhouse

Large Scale Jobs Engine



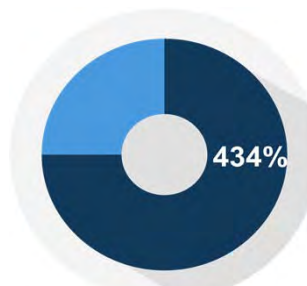
## Acre Comparison

Indoor: 5  
Outdoor: 93



## Revenue Comparison

Indoor: \$3,389,829  
Outdoor: \$2,259,886



## EBIT Comparison

Indoor: \$874,822  
Outdoors: \$201,322

Performance Categories	5 Acre High-Tech Greenhouse Grape Tomatoes
Acreage Under Glass	5
Growing Area (% actually planted)	95%
Growing Area in Square Footage	206,910
Yield per Square Foot	0.71
Total Yield per planting	146,906
Number of Plantings per year	10
Waste factor for transport and processing	94%
Estimated Yield to Market:	1,377,979
Estimated Market Price Per Pound	\$2.46
Estimated Gross Revenue	\$ 3,389,829
Cost of Labor, Seed, Water, Chemicals/Fertilizer	\$ 1,394,573
Cost of Lease and Power	\$ 1,046,980
Total Cost to Grow	\$ 2,441,553
Net income before shipping:	\$ 948,275
Cost of Shipping	\$ 73,453
<b>EBIT</b>	<b>\$ 874,822</b>

**Significantly more efficient and cost effective than outdoor farming.**



# 1-Acre Controlled Environment Agricultural Project



**Jobenomics/ACTSFFA are currently pursuing 1-acre CEA pilot projects in Iowa, West Virginia, Las Vegas, Washington DC, Baltimore, Chicago, Erie PA, Montgomery County MD, Puerto Rico, and Alberta Canada.**



# Live/Work Eco-Communities



**Opportunity Zone Fund financing now available.**



# 1/4-Acre Controlled Environment Agricultural Systems



**Ideal for small to medium-sized family businesses.**



# Produce On Demand (POD) System



- **Year End Cash Balance:** CAD \$430,000 Year 1, \$780,000 Year 2.
- **Indoors versus Outdoors:** 5-acre comparison: Indoor is 18-times more productive, Indoor generates 50% more revenue, Indoor EBIT is 434% higher than outdoor agriculture.

*Earnings Before Interest & Taxes*

**Significantly more efficient and cost effective than outdoor farming.**

# Sustainable & Affordable Ecosystems



- Highly-scalable designs based on integrated solutions
  - Design-build project delivery with advanced building, materials, energy and environmental technologies
  - Increased use of modular systems and pre-fabricated units
- Sustainable single-family, multi-family & community programs
  - Increase usage of single-family accessory dwelling units
  - Implement new multi-generational, multi-family concepts
  - Create dedicated workforce business/housing communities
- Revitalize under-resourced communities and neighborhoods
  - Mass-produce micro businesses and jobs with livable wages
  - Mobilize community-leaders and officials to streamline permitting, zoning and land use regulations
  - Maximize Opportunity Zone and private sector funding

**Efficiently produce high quality, lower cost homes and businesses.**



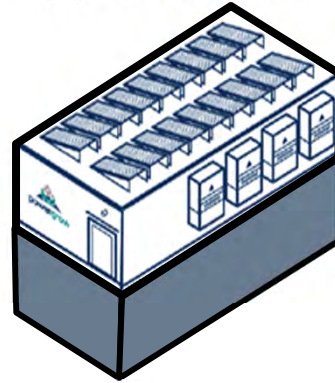
# Modular Construction

- Affordable multiuse configurations: micro farms, homes, offices.
- Livable: from 1,000sf to 3,000sf units.
- Environmental: LEED certified, insulated, mold resistant, solar.
- Suitable for small lots (1/8 acre) & spaces:



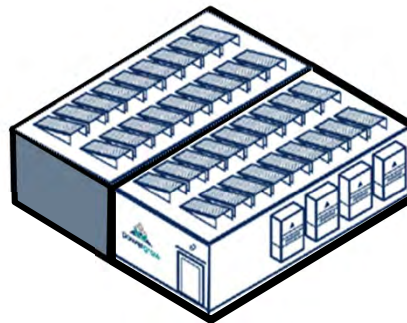
## Vertical Configuration

(up to 3 stories)



## Horizontal Configuration

(Attached or Detached Units)



## Modular/Portable



## Proven



(TV Star Rick Harrison's Pawn Plaza in Las Vegas was built with the same manufactured modules as a POD)

**Our modular units have even been utilized for shopping centers.**

# Produce On Demand (POD)

## Off-Grid Configuration



A POD is for growing.  
Processing and packaging will  
be either conducted in the  
POD or secondary sites.

100kW Solar Array

Modular  
Growing Facility

EV Refrigerated  
Truck & Charging Station

HVAC/Power  
& 20kW  
Storage Station

Produce will be harvested every 30-60-90 days depending on crops.



# CerarMix POD Construction

Near-Zero Heat/Cold Transference



Typically, structures have R-values from R-15 thru R-52 (the capacity of an insulating material to resist heat flow). CerarMix has no R rating since CerarMix technology resists 98% of all heat transference. Consequently, our CEA PODs (and other structures) are ideal for Arctic and winter food production and other applications.

See: <http://actscsi.com/faq-panelized-building>

**Ideal for growing in extreme environments.**

# High \$ Value CEA Products

## Common Crops

- Culinary Herbs
- Lettuce
- Spinach
- Tomatoes
- Strawberries
- Peppers
- Cucumbers



## Specialty Crops

- Medicinal Herbs
- Flowers
- Mushrooms
- Ground Covers
- Ornamental Grasses
- Bamboo
- **Hemp**

The highest value crop is hemp. Cultivating hemp for CBD oil can generate as high as \$75,000 per acre in controlled conditions.



# Cannabis CBD Oil Extraction

- **Cannabis** extracts include pharmaceutical-grade **CBD oil** used for body, health and medical applications
- CBD product market will grow 700% to \$2.1 billion market in 2020.
- CBD oil extraction systems fit in highly-sanitized PODs.



## CO2 Extraction Systems

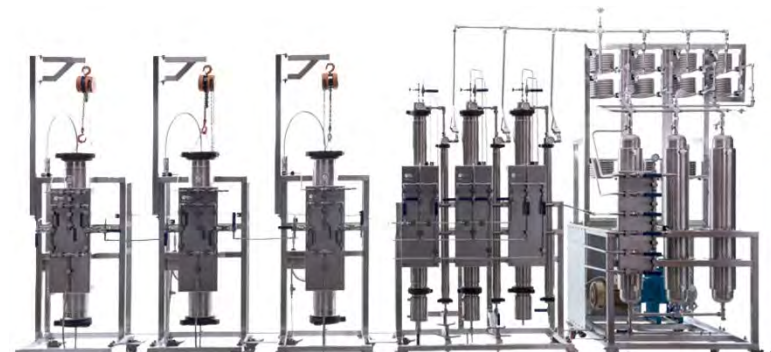
### Apex Commercial

Revenue/Day \$25,424-\$76,463



### Eden Labs Industrial

Revenue/Day \$163,440-\$217,920



**The U.S. hemp-CBD market is growing faster than marijuana and will be a \$22 billion industry by 2020 (up from \$600m in 2018).**

# Live/Work Eco-Communities



**An environmentally-friendly, net-zero energy complex.**



# Live/Work/Play/Retirement Complex



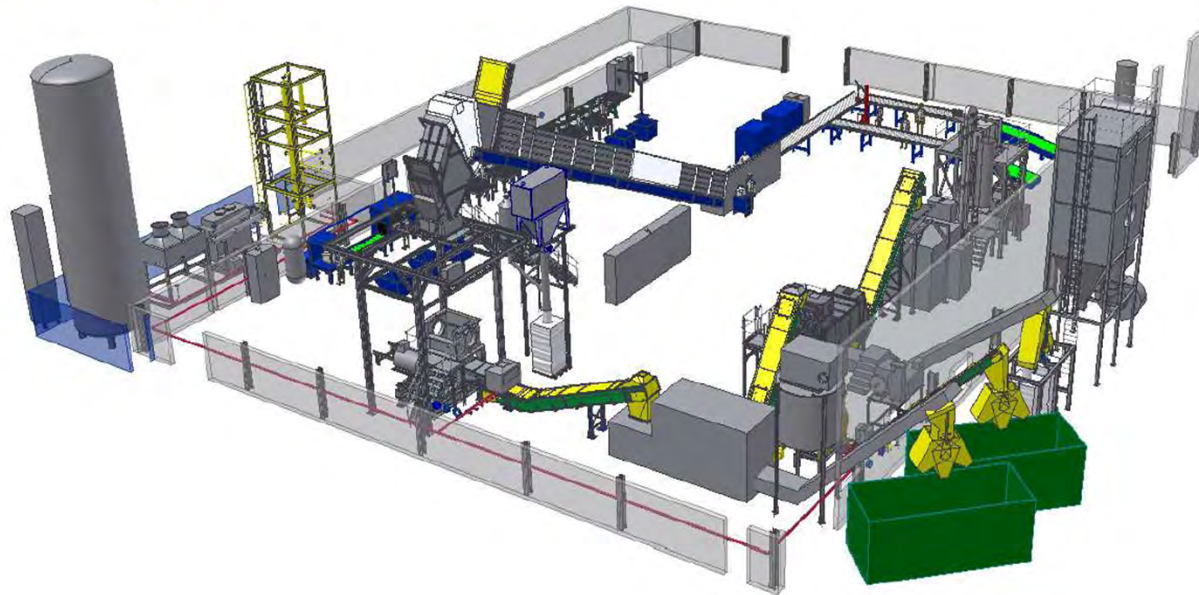
**Meets Alberta's desire for affordable homes, safe communities,  
and business/employment needs.**

# Jobenomics Urban Mining



Urban Mining Program could generate sufficient profits that will fund other skills-based training and certification programs.





**A new approach to urban mining, materials reclamation and business/job creation.**

# eCyclingUSA



- eCyclingUSA has partnership agreements with leading European manufacturers for building and implementing turnkey US eWaste Materials Reclamation Centers (formerly called recycling MRFs).
- Over 100 state-of-the-art European plants are operational.
- eCyclingUSA provides local communities the ability to shred, granulate, collate and reclaim their locally-generated eWaste-related raw materials without toxic emissions into the environment.
- eCyclingUSA envisions 50, locally-owned and operated, highly profitable, plants that employ up to 200 direct personnel.

**Most municipalities landfill or export their eWaste, instead of earning as much as \$40M annual profits by processing eWaste locally.**

# eCyclingUSA & Partner Locations



**Much of Europe has a zero landfill policy. The rest of the world is beginning to recognize the value of their waste streams.**



# eCyclingUSA Plants

- **Two Line 10 Ton/Hour Plant:**  
(Refrigeration & eScrap Separate Lines)
  - Equipment ≈ \$20 Million
  - 40,000 square foot facility
  - 10 to 15 acres
- **Combination 10 Ton/Hour Plant:**  
(Refrigeration & eScrap Shared Post Processing)
  - Equipment ≈ \$13 Million
  - 35,000 square foot facility
  - 5 to 10 acres
- **eScrap Only 3 Ton/Hour Plant:**
  - Equipment ≈ \$5 Million
  - 8,000 square foot facility
  - 1 to 2 acres

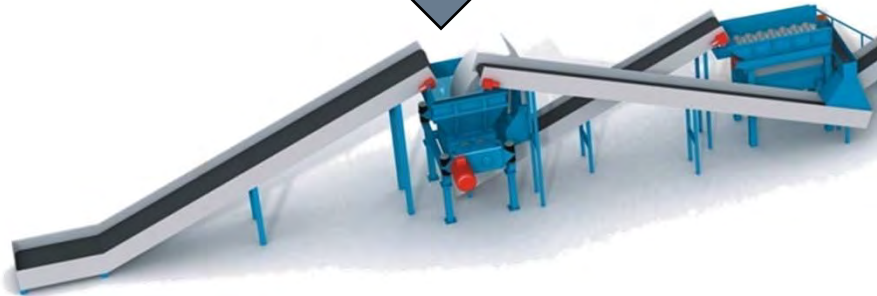
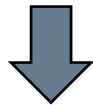


eCyclingUSA can implement a turnkey plant **within 12 months.**

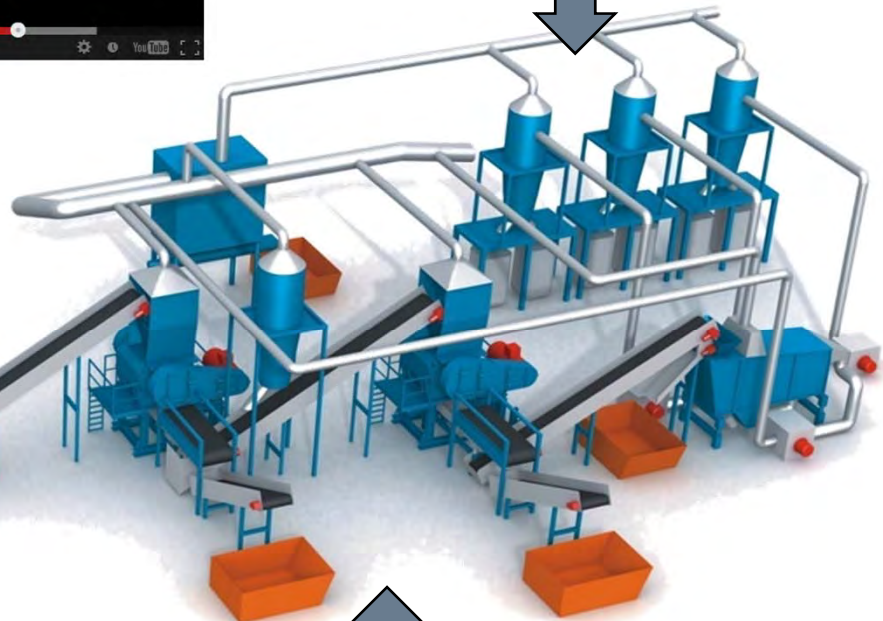
# Basic Operation



**Manual sort and pre-shred with return of oversized particles**



**Purification and environmental protection**



**Granulate, separate, collate, and reclaim raw material by type or color**



**eWaste is processed in a environmentally closed system.**

# Types of E-Waste

## ■ **Household Electronics**

- IT-Related Products (EPA definition)
- Consumer Electronics
- Large Appliances
- Small Appliances
- Cleaning/Power Tools
- Entertainment Systems
- Toys & Other Electrical Items

## ■ **Business**

- Computers, Servers, Peripherals
- Hardware, Cabling, Ducting, Racks
- Vending Machines & Other Items

## ■ **Government** (Federal, State, Local)

## ■ **Educational, Medical & Industrial**

## ■ **Construction & Demolition Materials**



**eCyclingUSA can process these items quickly and cleanly.**



# Types of Reclaimed Raw Materials

## eScrap & Electronics

Waste Electrical and Electronic Equipment



**Copper**   **Plastics**   **Aluminum**   **Iron**   **Gold**   **Silver**   **Palladium & Other Precious Metals**

## Refrigerators, Air Conditioners

Containing Air Polluting Refrigerants



**Copper**   **Plastics**   **Aluminum**   **Iron**

## TV/PC Tubes

Cathode Ray Tubes



**Glass**   **Metals**   **Plastics**  
Including Lead & Mercury

**eCyclingUSA systems are world-class in materials reclamation, and meet or exceed U.S. EPA standards.**

# Revenue & Profit Projections

(10 ton/hour plant operating 3 shifts)

## \$ Value of e-Waste Raw Materials

**For Rough Estimating Purposes Only**

**10 ton/hour plant operating 3 shifts per day for 300 days per year**

Feedstock: Computers, Consumer Electronics, Small and Large Appliances

Metal/Material	% of Feedstock	\$s per Metric Ton*	\$/Ton (2204 pounds)	Total \$/Year (10 ton/hour x 23 hour/day x 300 days/year)
Iron/Steel (Fe)	40%	\$ 350	\$ 140.00	\$ 9,660,000
Copper (85% Recovery)	5%	\$ 3,945	\$ 197.26	\$ 13,610,802
Aluminum (Al)	10%	\$ 1,499	\$ 149.87	\$ 10,341,168
ABS Plastics	25%	\$ 1,675	\$ 418.75	\$ 28,893,750
Other Plastics	25%	\$ 287	\$ 71.75	\$ 4,950,750
Computer Components	5%	\$ 2,082	\$ 104.10	\$ 7,182,900

Source: Jobenomics, eCyclingUSA

110%

Revenue\*\* \$ 74,639,370

Cost of goods sold \$ 30,238,000

Operating expenses \$ 5,780,000

Net Income \$ 38,621,370

EBITDA 52%

\* Scrap prices as of 12 March 2018

\*\*Does not include grants, tax incentives or tipping fees

**Profits from e-Waste operations can be used for community, micro-business and workforce development.**

# eWaste Plant Employment

(10 ton/hour plant operating 1 to 3 shifts)



- **Direct employees  $\approx$  42 to 200**

		Employees			3 Shift Operation	
		Shift 1	Shift 2	Shift 3	Minimum	Actual*
Combination eWaste (WEEE)-Large Appliance (CFC) for 10 Ton/Hour System		33	25	21	79	99
Optional Equipment	TV/CRT System	11	11	11	33	41
	Flat Screen/Thin Film Dismantling	2	2	2	6	8
	Mobile or Remote Preprocessing	8	8	8	24	30
	Smelting Unit	3	3	3	9	11
	Cable/Wire Shredder/Separator	3	3	3	9	11
		14	14	14	42	200

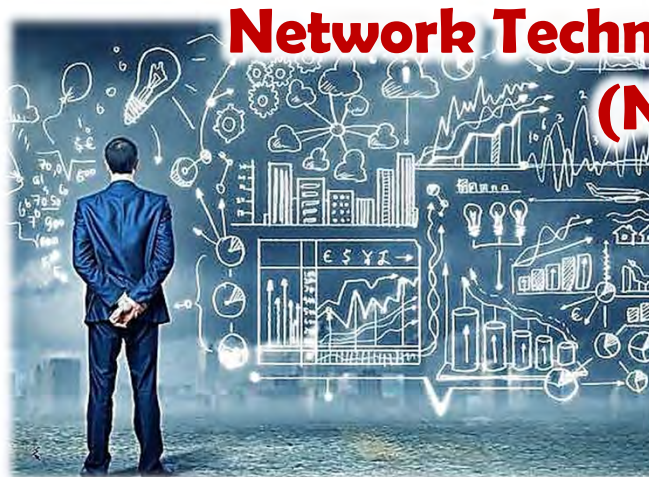
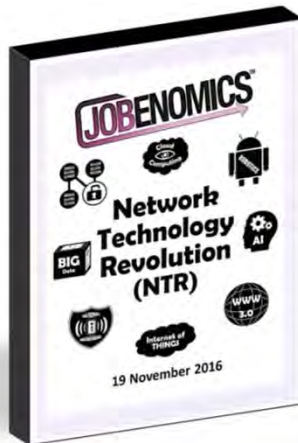
\* Includes vacation, sick and absentee allowances

- **Direct employees  $\approx$  200.** Jobenomics Business Generator programs: transportation, logistics, warehousing, demolition, construction, remediation, energy audit, weatherization, solar panel installation
- **Indirect employment  $\approx$  5x ratio** per light-industrial metrics.

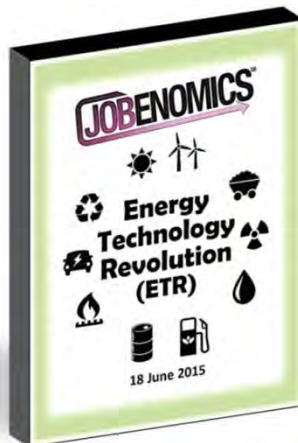
**Does not include new manufacturing-related jobs.**



# Next-Gen Business Opportunities



## Network Technology Revolution (NTR)



## Energy Technology Revolution (ETR)



The ETR and NTR will create **10s of millions** of new job opportunities and millions of micro and nonemployer businesses.

# Network Technology Revolution

The NTR is defined by Jobenomics as a perfect storm of transformative network and digital technologies, processes, systems and services including:

Big Data, Cloud Computing, Semantic Webs, Synthetic Reality, Mobile Computing, Ubiquitous Computing, Quantum Computing, 5G Broadband, Geo-Location, Near-Field Communications and Beacons, Inductive Charging, Spatial Sensing, Computer Vision and Pattern Recognition, Natural Language Processing and Speech Recognition, Data Mining and Predictive Analysis, Machine Learning, Transfer Learning, Deep Learning, Robotics, Telepresence and Telechairs, Nanobotics, Chatbots, Mechatronics, Memetics, Biometrics, Smart Cards, Blockchains, FinTech, Multifactor Credentialing, Emotive Surveillance and Management, Identity Management, Anonymity Networks, Ambient Intelligence, Artificial Intelligence and Intelligent Agents.



The NTR will be both brilliantly innovative and creatively disruptive:

**Creating** new global jobs and businesses,  
**Destroying** existing jobs and businesses,  
**Revamping** institutions and governments,  
**Instituting** new and different ideas, beliefs, behaviors and cultures, and  
**Changing** the very nature of human endeavor and work.

The global economy will be shaped by the digital generation and the \$124 trillion global economic impact by 2025.



# Energy Technology Revolution

## **The ETR Is A Perfect Storm of Energy Technologies, Processes and Systems :**

Renewable Energy Sources (Biomass/Biofuels/Wood, Hydroelectric & Hydrokinetic, Wind, Solar, Geothermal, Municipal Waste), Alternative Fuels, Advanced Batteries, Advanced Vehicles (Electric Vehicles, Fuel Cells, Hydrogen Vehicles), Nuclear (Small Modular Reactors, Fusion Reactors), Coal, Conventional and Unconventional Oil & Gas (Petroleum & Other Fluids, Natural Gas, LNG & GTL, Methane Hydrates), Exotics and Yet Unknown Technologies as well as new energy services including Energy Efficiency. Energy Conservation, Energy-as-a-Service (EaaS), Energy Assurance and Security and Energy Disaster Preparedness and Recovery Services.



## **The ETR Will Revolutionize Labor Forces, Economies And Nations Via The:**

Renewable energy sources, micro-grids, net-zero communities, advanced vehicles, alternative fuels, energy storage devices and smart networks will allow energy generation to occur closer to the consumer. Generating power close to the point-of-consumption eliminates cost, complexity, interdependencies and inefficiencies associated with transmission and distribution over 3-5 million miles of power lines in North America.

**California and Germany are at the forefront of the ETR transformation.**



# Alberta Is An Energy-Driven Economy

## BREAK EVEN COSTS

U.S. \$ PER BARREL WEST TEXAS INTERMEDIATE

### U.S. LIGHT OIL\*



### OILSANDS

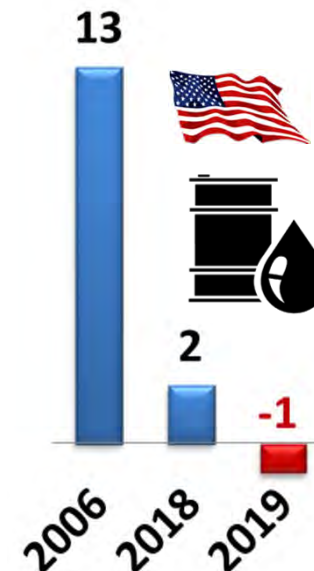


\*Price needed to cover operating on existing wells

SOURCES: CANADIAN ENERGY RESEARCH INSTITUTE; CIBC WORLD MARKETS;  
FEDERAL RESERVE BANK OF DALLAS, WOOD MACKENZIE, OXFORD INSTITUTE  
FOR ENERGY STUDIES, COMPANY ESTIMATES

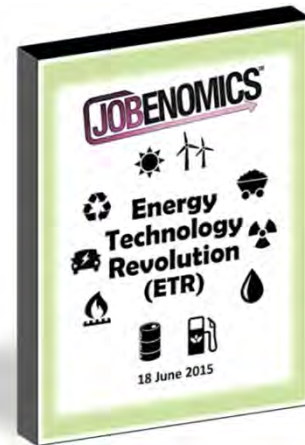
September 6, 2017  
NATIONAL POST

## Net Imports of U.S. Crude Oil & Petro Products (MMBBL)



**Increasing competition, environmentalism and the Energy Technology Revolution increases the need to diversify across the energy spectrum.**

# Renewable Energy Businesses & Green Jobs



**Renewable Energy (Solar,  
Wind, Hydro) Installation &  
Maintenance Businesses**



**Energy Audit, Weatherization  
& Renovation Businesses**

**The Energy Technology Revolution will create millions of new micro-business opportunities, such as independent contractors.**

# Green Business & Job Creation Programs

Examples of **highly-scalable** Jobenomics-EmeraldPlanet green business and job creation programs include:

- **Renewable energy**: solar, wind, low-flow hydro in tall buildings
- **Energy Efficiency**: energy audits, weatherization, renovation; LED electrical upgrading
- **Aquaculture**: aquaponics, hydroponics, water gardens, and salt water ecological farming
- **Storm Water Abatement**: urban capture, processing and retention; home-side water capture and reuse; rain gardens
- **Environmental Remediation**: soil, watershed and marshland remediation and regeneration
- **Affordable Housing**: small/tiny home construction & installation

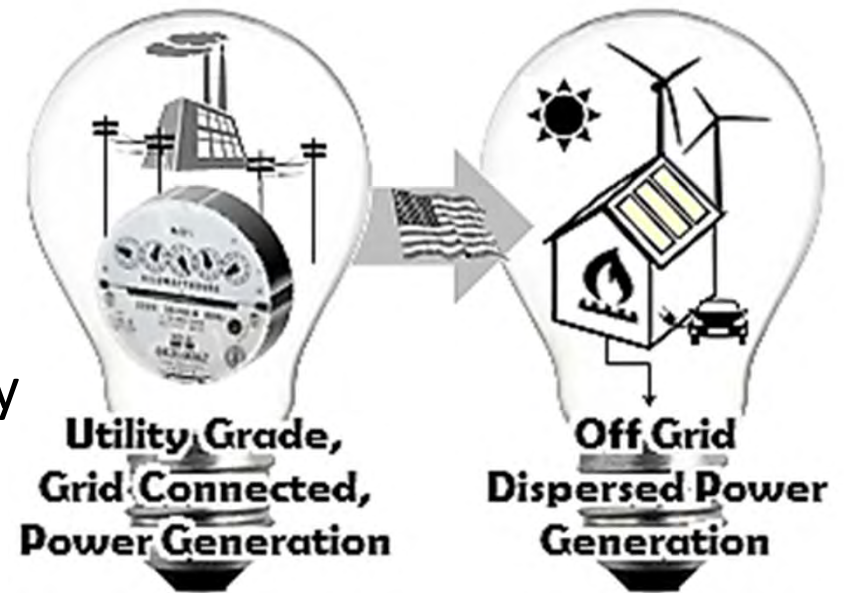
The Jobenomics-EmeraldPlanet collaboration emphasizes green micro-business creation in under-resourced urban and rural communities. <sup>61</sup>



# Energy Services

- Demand Side Energetics
- Net-Zero Communities/Buildings
- Services: “**Energy’s 3<sup>rd</sup> Rail**”
  - Energy Efficiency/Conservation
  - Energy Assurance/Security
  - Disaster Preparedness/Recovery
  - Energy-as-a-Service (EaaS)
- Energy Technology Center

## Demand Side Energetics



Jobenomics' Joe Sarubbi with President Obama and Mrs. Biden

# Digital Economy & Academies



- **Electronic Commerce**
  - Mobile Economy
  - Sharing Economy
- **On-Demand Economy**
- **Apps/Bots Economy**
  - Gig Economy
  - IoT Economy

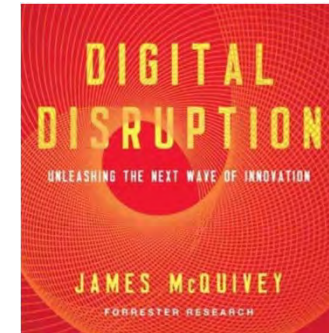
## Digital Academies



The tradition economy growing at 2% per versus eCommerce growth of 15% per year. Jobenomics' team of eCommerce experts help set up websites to selling on all major platforms; Amazon, Google, Facebook, eBay and Shopify.

# Digital Scaleups & Startups

- “Digital startups are at least **100-times easier to create** and have 10-times the number of innovators that can innovate at one-tenth the cost than traditional startups.” (McQuivey)



- **Top digital scaleup and startup platforms:** Amazon (2 million third-party sellers), Apple Store (650,000 apps developers), Google, Facebook, eBay, Craig's List, unicorns and gazelles.
- **Examples of digital occupations:** Digital health (health care, elder care, wellness, behavior care), shared economy (Uber, Airbnb), content providers, construction, transportation, technology, and various forms of mom-and-pop firms.

**Unlike other countries, U.S. policy-makers and decision-leaders are not concentrating on the economic impact of the digital economy.**



# Direct-Care Program

- **Direct-Care Services** include:
  - **Healthcare** and **social assistance**, the fastest growing occupations in the USA.
  - **Behavioral-care** includes drug addition, PTSD, obesity, spousal abuse, chronic illness, etc.
  - **Elder-care** forecasts 17 million assisted-living bed shortfall by 2020.
  - **Child-care** is the single biggest cost keeping women homebound.
- **Direct-Care Center** would connect service providers and clients via a **call and information center**. The center would start **home-based firms** certified to provide **in-home services** while connected to tele-health and other providers.



**Jobenomics Community-Based Business Generators would certify employees and small businesses for the Direct-Care Center.**

# Direct-Care Program Apps

## Examples of On-Demand Direct-Care Programs

- **Teladoc** is the largest telehealth platform with 20 million members and over 3,000 licensed healthcare professionals.
- **DoctorOnDemand** connects patients in minutes to board-certified doctors and therapists over live video.
- **Go2Nurse** is an on-demand nurse/caretaker application service.
- **referralMD**'s standardizes referral network communication between primary care physicians and specialists.
- **American Well** is a complete telehealth service for healthcare companies, employers, or delivery networks.
- **MDLive**'s telemedicine system offers a patient experience, a provider experience, and a call center.
- **SnapMD** is virtual care management system with a patient interface, a provider interface and an administrative back-end.

**In 2018, Canadian-based TELUS Health and U.K. Babylon combined forces to bring advanced digital health technologies to Canada.**

# CLINICSTOP Micro Clinic for Diagnosis, Counseling and Remote Care

[www.clinicstop.com](http://www.clinicstop.com)

**JOBENOMICS™**  
Alberta



**Ideal for pharmacies, churches, community centers that provide healthcare, social assistance, and behavioral care.**



# Jobenomics Community-Based Business Generator (JCBBG) Concept

A JCBBG **mass-produces** startup businesses by:

- Working with community leaders to identify high-potential business owners and employees,
- Executing a due diligence process to identify and assess work and social skills and aptitudes,
- Training and certifying participants in targeted occupations,
- Incorporating highly-scalable small and self-employed businesses,
- Establishing sources of funding and contracts to provide a consistent source of revenue for new businesses,
- Providing mentoring and back-office support services to extend the life span and profitability of new businesses.

**Most cities have Business Incubators and Business Accelerators, but not Business Generators for low-income citizens.**

# Jobenomics Community-Based Business Generator Process



Jobenomics is working with several dozen communities to create business generators to mass-produce startup businesses.

# Club E and ECentrs

- **Club E Atlanta is an entrepreneur empowerment center**
  - Public/private partnership with the City of College Park
  - Training , certification and startup business center
  - Co-working facility (hi-tech, offices, conference center, café)



- **Club E Startups**



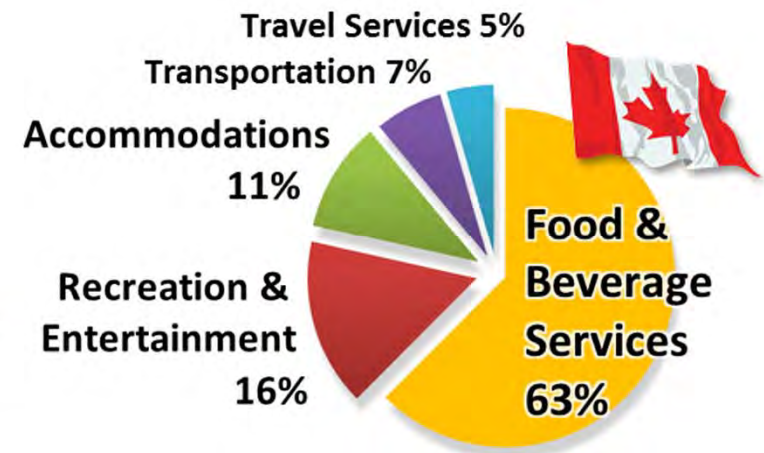
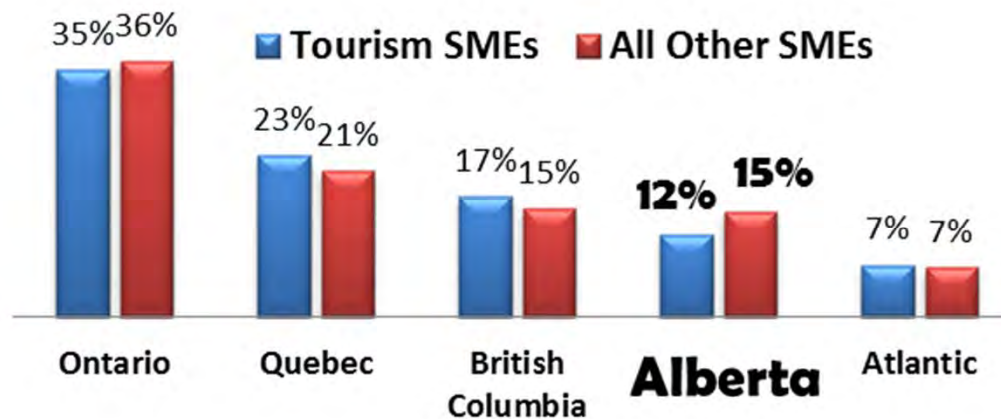
- **ECentrs is a next-generation co-work space company**
  - Raising capital from Opportunity Funds
  - Expanding to other cities like Washington DC and Chicago

**Chuck Vollmer is a member of the ECentrs Board of Directors.**



# Canadian Tourism

- One in ten jobs (**1.8 million**) in Canada depends on tourism.
- SMEs account for **99.9%** of businesses in tourism industries.
- Alberta ranks fourth with plenty of room to grow.



- Tourism SMEs tend to be older and larger than other SMEs. They have more female, indigenous and minority business owners.
- Tourism SMEs are the **primary source of entry-level employment** for youth and immigrants.

**In 2017, global tourism increased to 13.7 billion overnight visitations, twice the number in 2000. Canada now ranks 17<sup>th</sup> globally in visitations, down from 8<sup>th</sup> in 2000.**

# Experiential Tourism

Millennials prefer exciting junkets over sightseeing.



**Adventure travel** involves includes a “physical activity, a cultural exchange, or activities in nature.” *Adventure Travel Association*



**Eco-Tourism** entails “responsible travel to natural areas that conserves the environment and sustains the wellbeing of local people.” *The International Eco-Tourism Society*



**Cultural Tourism** entails a traveler's engagement with a region's culture, including the history, lifestyles and art of the indigenous and aboriginal people.

**Glamping** (glamorous camping) is an outdoor hospitality industry often associated with festivals, nature preserves and sports.



**Experiential tourism** is a viable and affordable way to boost tourist visitations to Alberta’s “**must see**” natural wonders and “**must experience**” Western, indigenous and aboriginal lifestyles.

# Experiential Push Marketing

*Share*  
**Alberta**  
*Push Marketing*

*Travel*  
**Alberta**  
*Pull Advertising*

## Push Marketing Connects Tourists:

### ■ Digitally

- Social media-driven approach
- Omni-channel content strategy
- Off-grid & satellite internet

### ■ Socialistically

- Environmental interests
- Cultural/indigenous insights
- Transcendental experiences

### ■ Logistically

- Air/ground transportation
- Accommodation/supplies
- Emergency assistance
- Concierge/guide services



*Travel Alberta* relies on **pull advertising**. *Share Alberta* uses **push marketing** that shares online **near real-time “bucket list”** experiences.



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