Province of the Apps: Made-in-Alberta Apps That Are Changing the World

Jeff Brown (/contributors/jeff-brown) | January 14, 2019



Takeaway: *Alberta-made apps are more than child's play; they're serious business.*

"What's an app?" Some Albertans still ask. Many who know the answer still can't fathom what the silly things have to do with business, let alone shaping our futures.

For many of us of a certain *vintage*, apps are a pointless distracting fad. We think of youngsters with their eyes glued to their smartphone, irretrievably lost in their Facebook, SnapChat or Instagram. They're oblivious to our presence until they deem it amusing to gauge our reaction to a cartoon cat with a helium voice or (good God, why?) the popping of a virtual pimple. *This is valuable? This is the future?*

We remember when television, conversation and the corner phone booth met all our communications needs. Back then our economy manifested itself through concrete examples of saleable, necessary goods – cattle in pastures, lumberyards full of building materials, and truckloads of pipe bound for the oilfields. We knew what these things meant to our lives, whereas the benefit of apps and other interweb gizmos is intangible. We don't see the point.

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Alberta Backs Tech

But the province does. On June 5th of this year, it passed the Growth and Diversification Act (https://www.alberta.ca/growth-diversification-act.aspx). Highlights of the bill include adding 3,000 new or expanded tech spaces over the next five years, investing in new scholarships, the creation and expansion of technology-related programs, support for short-term skills development and the Talent Advisory Council on Technology. The province has also added 406 technology seats in post-secondary institutions across Alberta.

Tax credits will aid both technology and diversity. The Interactive Digital Media Tax Credit (IDM) features a 25% refundable tax credit on eligible salaries and wages, with additional credits for companies hiring under-represented groups. Meanwhile, the existing Alberta Investor and Capital Investment tax credits have been beefed up to spur investment in growing small business and encourage the higher advancement of underrepresented groups.

That's all very nice, some will contend. *But with tried-and-true industries like agriculture and resource development struggling, why are we chasing fluff like apps?* There are three answers to that question.

Why Apps?

First, investing in technology dollars does not mean abandoning the resource or agricultural sectors. Both remain key industries (https://meetings.travelalberta.com/why-choose-alberta/key-industries) on the province's radar. The Emerging Resources and Enhanced Hydrocarbon Recovery programs represent the government's commitment to the oil and gas sector's viability. The Capital Investment Tax Credit (CITC), Canadian Agricultural Partnership and Farm Energy and Agri-Processing Program (FEAP) support farmers and food producers.

Second, Alberta's resource sector and the challenge of helping it stay competitive in changing times (https://www.cbc.ca/news/canada/calgary/alberta-oil-layoffs-jobs-recovery-harsh-reality-1.4474862) actually creates a significant market for technology. In fact, some would argue that that business is the best hope for the future of oil and gas (https://business.financialpost.com/commodities/energy/trapped-inland-canadas-oilpatch-leans-on-technology-to-stay-in-the-game). Many tech companies are jumping on the opportunity with ingenious solutions to resource-sector needs.

Alberta-made apps have been part of oil and gas fortunes for years now. In August 2014, the six-month-old Petrofeed, which created real-time map views of Canadian drilling rigs, statuses and operators, became the nation's most downloaded business app (http://www.marketwired.com/press-release/new-oil-patch-app-hits-1-in-canada-1940986.htm). It was followed by a spate of Alberta-made apps designed to map and track drilling, licensing, land and mineral sales, production, etc., across Western Canada. These apps included Geo Activity Rigs (http://www.geoactivity.com/) and Petro Ninja (https://www.petroninja.com/).

Developing apps for day-to-day oil and gas operations creates a significant chunk of business for Alberta companies like Terraform (https://www.terraformcorp.com/oil-gas/), Ironsight (https://ironsight.ca/) and GeoLOGIC Systems (https://www.geologic.com/products/gdc/). Apps aren't just about productivity, efficiency and profit. Increasingly stringent standards for worker and environmental safety have created new opportunities for innovators to step up with solutions.

Consider the example of Trakopolis. (https://www.trakopoliscorp.com/) The Calgary company worked with Honeywell to provide technology (https://trakopolis-xniatba.netdna-ssl.com/wp-content/uploads/2016/08/59924_TK_ConneXtLoneWorker_CaseStudy_v01.pdf?x69482) that used global positioning, fail-safe communications, and real-time gas level monitoring to keep lone workers safe. Another Calgary company called Cenozon

(https://www.cenozon.com/) has developed Hydroflow (https://www.cenozon.com/solutions/hydroflow/), a standalone cloud-based app that warns pipeline operators and integrity management teams about river erosion and/or abnormal stream flow hazards (https://energynow.ca/2017/09/cenozon-launches-industry-first-hydroflow-app-offers-pipeline-operators-6-months-free-automatic-notification-abnormal-water-flow-events/) that could endanger crossings.

A Heavyweight When It Comes to Scale

The third answer to "why apps?" comes down to one word – scalability.

“One of the important things in building a platform business like ours – arguably any business – is the need for scale,” said Benevity (https://www.benevity.com) founder and CEO Bryan de Lottinville at the 2018 Start Alberta Tech Awards in Calgary (https://www.startupcalgary.ca/startup-calgary-news/start-alberta-tech-awards-celebrate-provinces-tech-sector). “Scale” is what sets technology apart from other sectors, and every technology company makes it a priority.

As defined by Investopedia (https://www.investopedia.com/terms/s/scalability.asp), scalability is “a characteristic of a system, model or function that describes its capability to cope and perform well under an increased or expanding workload or scope. A system that scales well will be able to maintain or even increase its level of performance or efficiency even as it is tested by larger and larger operational demands.”

This is what turns the seemingly insubstantial quality of technology into an advantage. It doesn’t need to maintain pastures, trucks, warehouses and lumberyards to keep operating. But it does need new, wide-open vistas to explore and enhance. Fortunately, technology is brimming with them.

Shaping the World - and Beyond

Researching the Alberta app-making landscape is a mind-boggling experience. You’d never expect to discover so many developers, so many apps and so much

quality.

There are apps for tourism, education, oil and gas, business, agri-business, emergency services, government, training, travel, leisure, gaming, creativity and generosity.

There are apps for detecting radar, remotely controlling the heat in your hot tub and even one proposal for a marijuana delivery app.

There is mastery of emerging technologies like the Internet of Things (https://www.techopedia.com/definition/28247/internet-of-things-iot)(IoT), artificial intelligence (https://www.techopedia.com/definition/190/artificial-intelligence-ai) (AI), machine learning (https://www.techopedia.com/definition/8181/machine-learning), augmented reality (https://www.techopedia.com/definition/4776/augmented-reality-ar) (AR), virtual reality (https://www.techopedia.com/definition/4784/virtual-reality-vr) (VR), mobile commerce (https://www.techopedia.com/definition/1540/mobile-e-commerce-m-commerce) (m-commerce), wearables (https://www.techopedia.com/definition/31206/wearable-device), geographic information system (https://www.techopedia.com/definition/1933/geographic-information-system-gis) (GIS), beacons, and other location-based technology, not to mention cloud storage (https://www.techopedia.com/definition/26535/cloud-storage), which gives technology and engineers alike all the room they need to grow. So which ones do you profile?

It seems the best option is to pick a representative cross-section of the variety and utility of Albertan apps and developers. They've put the emerging technologies to work, often in ingenious combinations, and created app solutions that will wow the world. So here goes:

A Random Sampling of Alberta App-titude

Mammoth XR (Calgary)

What can a soccer fan do during commercial breaks? How about getting some free kicks on an augmented reality football pitch in your own living room? The AR/VR gurus at Mammoth XR (https://www.mammothxr.com/) developed Football VR (https://www.mammothxr.com/football-ar.html) in 2017 for the FIFA World Cup in Russia. It's available on iOS and Android phones with ARCore capability. If you prefer your football more oblong, Mammoth XR's Field Goal AR (https://www.mammothxr.com/field-goal-ar.html) may be the game for you.

SensorUp (Calgary)

This company offers next-generation, GIS-friendly and future-proof solutions through its SensorUp (https://sensorup.com/) platform. The "All your data in one place" system empowers users to create more powerful apps, provides full-picture,

real-time updates via different IoT sensors and crystalizes findings with graphics-rich analytics, all of it up on the cloud.

SensorUp solutions make emergency response safer and quicker, provides complete views of industrial field operations and enables city agencies to monitor traffic flow, air quality and public safety.

The company's client list includes Lockheed Martin, Natural Resources Canada and cities around the world.

Showbie (Edmonton)

What would a paperless classroom look like? Pretty sweet, according to schools that get their students learning on the Showbie (https://www.showbie.com/) app, available for iPad, iPhone, or almost any computer or Internet-ready device.

Teachers set up a class code, which the students only have to enter once to stay in the loop all year. Shared folders mean everyone gets the assignment at once. So there's no losing it or claiming the dog ate it. Students can do their work using the annotation device of their choice, and teachers have plenty of options – including voice messages – to provide personalized feedback. If they're impressed, they can even share students' best work with their proud parents. Planning and scheduling is a breeze, so teachers can concentrate on, well, teaching. It's the ultimate tool as we move toward paperless classrooms - and its used in thousands of classrooms worldwide.

Intelligent Imaging Systems Inc. (Edmonton)

This tech service supplier (https://intelligentimagingsystems.com) provides government transportation and law enforcement agencies across North America with technologically advanced tools to make the roads safer and more secure. Its Drivewyze (https://drivewyze.com) application has become a hit with bureaucrats, businesses and truck drivers alike because of the time and inconvenience it saves them all.

Instead of going through the rigmarole (no pun intended) that's usually associated with weigh station stops, any trucker with a smartphone can enter his pertinent information and leave the app to handle the rest. Drivewyze detects upcoming weigh scales and forwards the information. If it's approved, the driver can keep on rolling by. The app is also available and easily activated on dashboard-mounted electronic logging device (ELD) systems.

It's now used at over 700 sites in Alberta and in 42 American states.

VizworX AR (Calgary)

Originating in the research labs at the University of Calgary, VizworX

(https://www.vizworx.com/) now produces cutting-edge data visualization technologies to solve business problems using augmented reality, virtual reality and mixed reality.

Its Panoptica Augmented Reality Collaboration Suite (http://www.vizworxar.com/ar-apps/panoptica-ar/) allows engineers to do walk-around inspections of structures that are yet to be built. Thanks to incredible 3D modelling technology and Microsoft HoloLens glasses, engineers can inspect their creations in real space, reaching up, ducking under and avoiding parts of structures that workers will later encounter. This is their opportunity to identify design flaws, discuss solutions and make corrections before anyone has to turn the first bolt.

The Palmyra Augmented Reality Experience (http://www.vizworxar.com/ar-apps/palmyra-ar/) is helping restore lost history. In the recent Syrian conflict, many of the magnificent archaeological monuments of Palmyra were damaged or destroyed. Fortunately, VizworX is helping rebuild that history. Working with volunteers of the #NewPalmyra (https://twitter.com/search?q=%23NewPalmyra&src=typd) project, the company's Augmented Reality Experience has created a 3D model from crowdsourced photographs to guide the reconstruction and conservation effort.

Serious Labs (Edmonton)

Workforce training needn't tie up equipment or put employees in uncertain or dangerous situations. Serious Labs puts its virtual reality technology to work with equipment simulators and interactive learning.

Virtual reality simulators for Aerial Work Platforms, cranes and heavy snubbing tasks in the oil and gas sector allow workers to familiarize themselves with the equipment they'll be operating. They can put on a virtual reality headset and start training without the risks of getting hurt or breaking something expensive.

Meanwhile, Serious Labs' (https://seriouslabs.com/) interactive learning helps workers build their muscle memory and decision-making skills through training games available via their OJT (on-the-job training) app for smartphone, tablet or desktop computer.

ScopeAR (Edmonton)

Scope AR ()'s augmented reality technology facilitates safe, efficient, step-by-step interactive and visual guidance for training and maintenance.

Its Remote AR (https://www.scopear.com/products/remote-ar/) collaboration tool allows workers in the field to get remote advice from experts via smart device, wearable or desktop computer, while its Work Link (https://www.scopear.com/products/worklink/) authoring software program allows users to create rich,

engaging, augmented-reality Smart instructions.

WorkLink was initially created for handheld smart devices, but workers can now go hands-free, thanks to its adaptation to Microsoft mixed reality technology glasses. That innovation persuaded Lockheed Martin to employee WorkLink technology in assembling its Orion crew capsule for NASA. Its partners and customers have included Boeing, Tesla, Toyota and Lockheed Martin.

Orpyx Medical Technologies (Calgary)

Diabetes is on the rise, and one of its most dangerous symptoms is peripheral neuropathy, the loss of feeling in the extremities. Immediate sensory warning of foot ulceration is crucial because 15 minutes of walking on unhealthy feet can cause irreversible damage, hospitalization, and possible amputation.

In 2013, Orpyx (http://orpyx.com/) designed a wearable app solution that picked up foot pressure readings through sensors in an insole. Warnings could then be transmitted to a smartphone or smartwatch – or a pad on the back, which is less susceptible to nerve damage and where foot pressure can be represented on a 1:1. Scale. Now known as SurroSense RX (http://surrosense.orpyx.com/), the technology has FDA clearance and a U.S. Patent. It will be front and centre as Orpyx teams up with major diabetes management company Onduo to boost foot ulcer prevention.

Benevity (Calgary)

Benevity (https://www.benevity.com/) doesn't just call itself "the global leader in online workplace giving, matching, volunteering and integrated grant management solutions," it can prove it. When Apple asked (https://nonprofitquarterly.org/2016/11/18/apple-pay-rolls-instant-donation-technology-nonprofit-organizations/) for Benevity's help in streamlining charitable donations made on its iPhone and Mac platforms, the Calgary company was ready, willing and able.

Apple needed two things: security and the instant, seamless transactions, which studies had shown increased the frequency of completed donations. Benevity had a solid reputation for managing workplace giving and corporate philanthropy. It also had the most extensive network for distributing funds efficiently to nonprofit (https://www.benevity.com/press-releases/benevity-supports-the-launch-of-apple-pay-for-charities) organizations, with over 2 million charities from more than 200 countries in its global database.

After the launch of the Apple Pay for Donations, Jennifer Bailey, Apple's vice president of Apple Pay, saw reason to be enthusiastic:

"We're making it incredibly easy to give back with Apple Pay," she said. "Websites and apps tell us they see twice as many people actually completing a purchase

with Apple Pay than with other payment methods."

Going to the Head of the Class

Students are increasingly finding opportunities in apps as well. U of A alumnus Greg Burlet (http://www.startupedmonton.com/blog/2018/4/11/note-worthy-app-brings-ai-to-the-masses) combined what he learned from an introductory machine learning class with his love of music to create Frettable (https://frettable.com/), an app that uses AI to quickly convert recorded singing or playing into sheet music. The innovation earned Burlet an invitation to the National Association of Music Merchants (NAMM) Show in Anaheim, California.

Some can't wait until after graduation to jump into the app-developing game. In 2017, University of Calgary Students created an on-campus meal delivery app (https://www.ucalgary.ca/utoday/issue/2017-11-14/university-calgary-students-launch-deliverus-campus-meal-delivery-service). In 2015, a student-developed ranting and venting forum (https://www.cbc.ca/news/canada/edmonton/alberta-students-take-anonymous-social-media-app-to-tech-mecca-silicon-valley-1.3473103) earned its U of A and Athabasca University creators a trip to Silicon Valley and $120,000 in operating capital. This summer, a Calgary high-schooler was likewise summoned to the mecca of tech, thanks to a math app (https://www.cbc.ca/news/canada/calgary/calgary-teen-app-divi-aiden-olfert-wwdc-apple-1.4677240) he'd created.

So Alberta's capable of cultivating a generation of tech-ready minds. Now the question is, "Will they stay here?"

Plugging the Brain Drain

"What we don't want is for those people to leave this province, because of the lack of activity, the lack of opportunity," said Evan Hu, at the 2018 Start Alberta Tech Awards held in November. He's a member of the A100, (https://www.thea100.org/) a non-profit network of volunteers providing support to this province's valuable entrepreneurs. "I know the other jurisdictions would love to have those people."

Support groups like the A100 are critical to Alberta's app developers and other startups. They provide advice, networking opportunities and direction. If they don't directly fund initiatives themselves, they can help new apps find funding. They range from official economic boosters like Alberta Innovates (https://albertainnovates.ca/), TEC Edmonton (https://www.tecedmonton.com/) and Calgary Technologies Inc. (https://www.calgarytechnologies.com/) to entrepreneur collectives like Startup Calgary (https://www.startupcalgary.ca/) and Startup Edmonton. (http://www.startupedmonton.com/)

A lot of things are going our way. The oil and gas industry's necessary embrace of

technology (https://business.financialpost.com/commodities/energy/trapped-inland-canadas-oilpatch-leans-on-technology-to-stay-in-the-game) creates a lucrative market for entrepreneurs. So do the many industries and services that have expanded in the wake of our resource bonanza. The federal government has invested $125 million (https://www.newswire.ca/news-releases/canada-funds-125-million-pan-canadian-artificial-intelligence-strategy-616876434.html) in artificial intelligence. The province is beefing up tech (https://www.alberta.ca/growth-diversification-act.aspx#toc-0) in post-secondary schools. Worldwide app revenues are forecast to hit 189 billion by 2020, (https://www.statista.com/statistics/269025/worldwide-mobile-app-revenue-forecast/) with over 258 billion app downloads expected by 2022. (https://www.statista.com/statistics/271644/worldwide-free-and-paid-mobile-app-store-downloads/)

That doesn't mean app development is found money. Alberta isn't the only place to notice the potential of technology. In fact, observing our position (https://crozdesk.com/software-research/top-startup-cities-ranking-2018-cloud-saas) in the global tech pecking order is quite humbling. The current boom is apt to unfold like the California gold rush – easy pickings for those who get there first, hard digging for latecomers. But we can't lurch backwards, because according to economist Todd Hirsch, *there is no going back (https://www.cbc.ca/news/canada/calgary/alberta-oil-layoffs-jobs-recovery-harsh-reality-1.4474862)*.

What Our Aspirations Can Teach Us

If we hope to become anything like a Silicon Valley, we need to understand what made that locale what it is today. According to author and tech expert Paul Graham, it came down to six things (https://www.quora.com/How-did-Silicon-Valley-become-the-location-for-the-largest-tech-hub-in-the-world): Good universities with a solid tech track record, bright-minded people (who attract other bright-minded people), personality, youth, time (to let startups beget other startups) and proximity to venture investors.

It sounds promising, right?

"Alberta is made up of a set of personalities that you don't find anywhere else in Canada – people that don't take direction well and cut their own path and are driven to be successful," said David Edmonds, another A100 member at the Start Alberta Tech Awards. "You can make yourself anything you want to be when you come to Alberta. "

We have advantages. We have the will. We have the technology. We have the talent. The next few years will tell what we can make of it.