

A low-angle, upward-looking photograph of several modern skyscrapers with glass facades. The buildings are positioned around the edges of the frame, creating a sense of height and scale. The sky is filled with soft, white clouds against a blue background. The overall tone is professional and modern.

CONVERGX[®]

WHERE INDUSTRY LINES DISAPPEAR
2019 SUMMIT

SUMMARY REPORT

A FEW WORDS FROM OUR CEO



Kimberley Van Vliet
CEO & FOUNDER



Simply put, a heartfelt thank you.

Your participation and open dialogue at ConvergeX® made it the most successful summit yet. Your engagement to blur the lines between industries allowed the creation of real x-sector business opportunities. We are delighted to share the results*: 31 handshake/LOI deal initiations and 5 signed deals happened at the summit from the select group of senior decision makers present. The keynote speeches, panel insights, innovation award winners, B2X meetings, and reception events set a new standard for our upcoming fifth annual global summit.

We at WāVv look forward supporting your x-sector business growth strategies. We act as your trusted guide to navigate the different timelines, expectations, requirements and jargon between military, aerospace, defence, security, energy, mining and government. I look forward to welcoming you to ConvergeX® in Calgary February 4-6, 2020.

*that we are aware of. We ask delegates to keep us in the loop when business is created so we can gauge how effective the event is. Some entities may not be able to disclose an initiation of a deal.



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Canada

CHATHAM HOUSE RULE & METHODOLOGY

Companies tend to stay in their lane. It isn't always intuitive to think about who might have already solved a problem we're having, or how a technology we've developed might apply to another sector. ConvergeX® is the first and only global X-sector summit to intentionally connect executives from aerospace, defence, security, energy, mining and military together to generate business opportunities for faster results. Growth to the power of X.

The world needs the innovations these organization produce. They're solving problems in cyber security for critical infrastructure, water management, sustainable energy, energy storage, transportation of goods and people to remote places, high speed secure communications, autonomous transportation, advanced materials for next generation manufacturing of lighter and stronger parts. The faster they go, the higher we all rise.

The entire summit operates under **Chatham House Rule** and without media present. It is as follows: The Chatham House Rule reflects a media free environment that allows for speakers to voice their own opinions and engage in open dialogue where any comments will not be attributed directly to an individual or company. When a meeting, or part thereof, is held under the Chatham House Rule, participants are free to use the information received, but neither the identity nor the affiliation of the speaker(s), nor of any other participant, may be revealed.



EVENT OVERVIEW



The fourth annual global ConverGX® Summit was held February 5-7, 2019 in Calgary, Alberta, Canada. ConverGX® increased sponsorship and hosted 150 delegates comprised of senior executives, military officials, government ministers, and leaders from academia. Delegate representatives from 92 organizations from 5 countries spanning 4 continents.

ConverGX® also signed a partnership with Farnborough International Limited. We will be hosting a UK executive roundtable in September 2019, followed by the launch of ConverGX® Europe at the Farnborough International Airshow in July 2020. Negotiations for expansion to the USA and South America in 2020 are well advanced.



Return summit delegates commented that 2019 was the best ConverGX® summit so far. The calibre of people in the room was appreciated, as well as the breadth and depth of conversations. Many first-time attendees were surprised at how open the other delegates were about the challenges they face.



HOW YOU BENEFITED THE OBJECTIVES

ConvergX® brings together a select group of top executives and decision-makers at the most senior levels of the aerospace, defence, security, energy, mining industries with government and military. They come to do business: making excellent connections and getting valuable market intelligence from their peers about what challenges they face.



GLOBAL REACH

2019 delegates represented

- 92** companies, government agencies, military branches
- 5** countries
- 4** continents



- 31** Initiation of deals from the onsite connections in 2019
- 5** Signed x-sector deals at the 2019 summit

THE PANELS

The inspired conversation methodology was used to facilitate the summit under Chatham House Rule

ConvergX®-U

The X-Factor

Industry 3.0

Security

Wednesday February 6
Summit Day 2



CONVERGX[®]-U

ENERGY

The energy industry is under downward pressure from all directions: commodity prices are relatively stable but at a much lower new normal range than recent history. In turn, this forces cost competitiveness within energy producers and down the supply chain to energy service providers. More must be done with less capital, forcing efficiencies and innovation. Due to transportation bottlenecks and an inability to get product to market, global prices are more stable than those seen in Western Canada.

Traditional sources of energy are also under pressure to demonstrate social and environmental responsibility on all fronts. Shareholder meetings must address the people who hold hydrocarbons accountable for climate change, demanding a hydrocarbon-free future as quickly as possible. A single protester with a sign and a social media account can impact public opinion and erode years of good corporate citizenship, no matter the truth or fiction of their message. The current energy mix of traditional hydrocarbon sources (oil and natural gas), nuclear and sustainable sources (primarily wind and solar) is shifting.

Wind and solar installations are growing rapidly, with installed costs benefiting from technology advancements and economies of scale. And yet, there is no current scenario where hydrocarbons are not part of the energy mix in 20 years' time, particularly for transportation fuels (long haul trucking, sea shipping, jet fuel). Somewhat ironically, if we were to move to an entirely electric future as quickly as predicted, the demand for hydrocarbons to meet all of the industrial demand from mine to consumer would not fall for a long time. Advancing equitable partnerships with Indigenous communities remains a key focus of this sector. Job creation and the expected growth of Indigenous owned businesses are currently tracking positively. An example is the creation of the Project Reconciliation group prepared to invest in a 51% ownership stake.

CONVERGX[®]-U

MINING

Mining is a key industry in Canada with more than 60 metals and minerals sourced with almost \$100 billion in exports alone. There is continuing demand for mined materials globally utilizing advances in technology, digitization, manufacturing, autonomous vehicles, sensors and communication systems.

This increased and consistent demand requires a strong mining sector with access to innovation to solve the issue that most of the easy deposits have already been mined. Remaining deposits are harder to access, both in terms of location and in terms of extraction methods. The increased cost of extraction and environmental stewardship measures with concurrent lower yields presents a challenge for cost control to maintain margins.

One particular area of opportunity is to build strong partnerships with our First Nations and Indigenous communities, including very early involvement in the process and equity in the project. A few other areas of opportunity are accessing the minerals in harder to reach locations, mapping regions for their geological composition, and finally advancements in water-less mining.

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CONVERGX-U

Aerospace, Defence, Security (ADS)

Facilitating commercial, civilian and military solution delivery provides for common requirements such as potable water, renewable energy, energy storage and food security. In peacetime, humanitarian relief and defending against human and drug trafficking remain ever present missions.

Canada continues to deliver on its Strong Secure Engaged (SSE) defence policy, however very little of the announced 20 year spend has actually yet to happen. The federal government's forecasted spending has yet to meet budget in any year since SSE was announced in 2017.

Given the lukewarm economic position of many NATO ally countries, one can't be both a fiscal hawk and a defence hawk at the same time. Priorities need to be set and the need for economic security against real and present threats to our people, privacy and institutions.

ADS continues to pursue technology advancement that removes humans from the "dull, dirty and dangerous" functions. In concert, digitization of the industry remains key. Augmented reality, IOT, blockchain and cyber defence remains top priority initiatives. The pursuit of adjacent industry partners where technology transfers can expedite delivery are of keen interest.



X-FACTOR

Several sectors – including energy, mining and ADS, are all trying to solve similar challenges: how to do more with less, how to do it safely and securely for all stakeholders.

These range from how to integrate all of the data they capture into intelligence, securing the devices and networks where the data lives, how to automate aspects of high-risk jobs to improve worker safety and reduce time away from home, to how to reduce their environmental footprint of consumption (energy, water, resources) and how to deal with waste to lessen or eliminate their impact, to name a few.

Since different industries are looking for the shared solutions it only makes sense that to begin, working in a collaborative process will get results faster with less duplication of effort.

Access to private equity capital and general attitudes towards risk/innovation are less than favourable much to the frustration of the entrepreneurial communities. Capital tends to be centralized and suffer from group-think so the collaborative approach to solving problems helps to unlock value, particularly for small-to-medium enterprises (SME).

Partnerships between large companies and SME's become more pragmatic, offering benefits to both sides. The SME achieves proof of concept, revenues and scale that makes raising capital much easier. The larger company gets access to technology and entrepreneurial thinking that can get lost in the silos of bigger corporations. There is value in working smarter together.



INDUSTRY 4.0

Data is the new currency and there is an enormous opportunity behind shareable, verifiable, clean datasets underpinned by blockchain technology.

Industry moves at the speed of innovation and yet keeping an entrepreneurial spirit is an issue many large companies struggle with. Purchases or partnerships with other entities can be hampered by asking the very in-house people whose job it will impact to assess the new technology or process can run afoul of the “not invented here” attitude, looking for reasons it won’t work rather than for ways it can.

Sensors are already prolific but by no means as ubiquitous as they will become. How will we convert and collate the myriad data collected into a synthesized intelligence platform for actionable intelligence, prediction and detection. This type of cross-sector intelligence collaboration will require some ongoing conversations, including the conversation about how to protect the data integrity and privacy.

All of the power generated today will be consumed fully by technology (billions of devices) in 2037. Data is energy and how to solve the challenge of power consumption is key. Next generation computing with lower power circuits via binary computers and chip on chip capability could be one way forward.

SECURITY

The number and variety of digital threats is such that data analysts can't outrun the risks on our networks. We need to use smarter tools like AI and machine learning to enable faster threat detection, deterrence and defence.

There many benefits of cloud computing but there are also inherent risks, particularly when our data goes over the horizon into other jurisdictions. Cloud computing can be more secure by ensuring identity pieces are in place prior making the leap into the cloud.

Cyber threats are now not just to an individual or corporation for financial gain. It is now directed to anything with access to the internet. Power stations, aircraft, traffic systems, water plants and so forth are their targets. From a military perspective, there are legions of members trained to inflict damage to sovereign nations within their own borders. The key message, network security and the ability to quickly identify the attack and launch counter attacks.



THE PANELS

The inspired conversation methodology was used to facilitate the summit under Chatham House Rule

**Rise of the
Robots**

**Tech
Innovation**

**Beyond
Borders**

Power

Wednesday February 7
Summit Day 3

RISE OF THE ROBOTS

Building off of the security discussion, the panelists discussed the relationship of software, hardware and humans in the industry of the future.

There is a need for information and observation from the growing multitude of sensors in use and ready to deploy, from sub-surface to satellites in various orbits over our planet (and others).

It was observed that technology will not replace people but provide timely information to act upon, combined with the use of AI and machine-to-machine learning to process data into intelligence. Simply put, use technology to create decision ready data where the human provides the action needed. The opportunities for uses in safety, security and environmental protection were compelling, let alone all the myriad other micro-to-macro scale applications.

It was a resounding theme that there is a skilled labour shortage in STEM fields generally, and machine learning and AI specifically. The delegates present discussed several programs at the student level to, agreeing to be allies in championing the need for better education and training in coding and computer science skills from early ages.

Recognition and relevance of TRL levels in many applications where there aren't life or death implications is well suited in this discussion. The questions were towards how you find avenues to get stakeholders acknowledgement that zero risk isn't always necessary; policies and restrictions can be agreed to build bridges for adoption.



TECH INNOVATION

Step-change innovation projects often have long durations, for example some space projects will span more than a decade. This presents a challenge to avoid over-engineering while keeping current on technology developments since the project inception.

A delegate noted the value in small incremental changes to meet an immediate customer need, rather than large step-change innovations that have inter-departmental approvals and a longer process. R&D teams don't always get the buy-in from the operations group, who feel it was designed without their input or customer needs in mind – and vice versa.

The delegates felt that silos in companies and between industries resulted in us only meeting a small portion of our potential as a society. Realizing the dual opportunity/challenge in accepting innovation from external sources and welcoming ideas from others, despite it being not-invented-here is path forward to collaboration. We heard about several programs, both in-house and external facing that encourage innovation through labs, accelerators and challenges.

When working with SME's it is important to remember that they need speed. More attention is needed to provide for rapid contracting and funding, a huge help for high growth and often cash-strapped companies.

The concept of failing fast is widely accepted, but failure is still stigmatized while going hand-in-hand with innovation. A firm's cultural attitudes towards failure are important, whether it is penalized or celebrated. Some companies going so far to recognize the role of failure in progress by having failure parties.



BEYOND BORDERS

Attitudes towards business relationships have evolved over time, including with whom and how we create them. It is increasingly common for partners to seek true win/win relationships with all people irrespective of nationality, race or ethnicity.

NATO, CUSMA (NAFTA), NORAD, 5eyes and the long standing international trade relationships among the delegates confirmed the need to drive further economic support. Discussing briefly the value of each agreement, notionally it was determined that the demand generation of one market should benefit the supply chain of many. Programs between nations for foreign direct investment, grants and export support are key.

Important steps forward are underway with Indigenous communities, which represent a massive economic opportunity as they move towards managing poverty to managing wealth by installing critical infrastructure for power, communications and services. Like any other culture, we must beware of drawing sweeping generalizations about “the Indigenous”, who are no more homogeneous in attitudes, needs and wants than “the Europeans”. We need to do our homework on our prospective partners’ culture, no matter where in the world we do business.

A delegate noted the growing necessity of multilateral trade agreements, such as the CPTPP, were refreshing in the context of the usual bilateral commentary. It seems obvious from the way we can describe today’s complex multi-national supply chain, from fruit to iPhones, and yet it is a missing component of contemporary dialogue.

POWER

Battery and energy storage technologies are an important part of a new sustainable energy future, particularly in remote communities. Many of these technologies currently rely on rare earth metals, which have inherent supply chain risks as there is limited availability for many of these materials outside of China. Other jurisdictions with underdeveloped mining and processing capacity for rare earths, like Canada, should at least be considering the risks to industry if these inputs aren't readily available at home.

Persuasive arguments were made for the broader use of nuclear for power and other applications, as well as the safety of nuclear including the risks for weapons and accidents. Learning about the newer thorium-fuelled reactors, other small and large-scale technologies, and technology advancements in the sector was of interest in developing near term opportunities.

There are at least two under-used technologies (gas-to-liquids, or GTL, and small-scale liquefied natural gas (LNG)). These solutions use conventional natural gas, both cheap and abundant, that can convert low-value natural gas to replace expensive diesel for both transportation fuel and power supply, particularly in remote locations.

THE FUTURE IS NOW

INNOVATION AWARDS



Blackline Safety

Blackline Safety is an end-to-end technology manufacturer. Blackline dedicates millions annually to research & development to fulfill our vision of becoming the world's leading wirelessly-connected safety solutions provider. With more than 10 years of manufacturing expertise, Blackline Safety has revolutionized the industry by bringing to market the world's only connected device featuring interchangeable and configurable gas detection cartridges and intelligent analytics platform. G7 provides businesses in every industry, including energy, utilities, mining, aviation and aerospace, with a customizable solution to meet their safety needs.

SkyFire Energy

SkyFire Energy is Western Canada's leading solar contractor. We have designed and installed hundreds of grid connected and off-grid solar power systems throughout central, western and northern Canada. SkyFire delivers on complex engineering and logistically challenging projects. SkyFire Energy provides solar power systems for a broad spectrum of companies and industries, delivering cost-effective energy in many applications, such as: solar power systems for oil and gas well sites, a container-based portable solar powered backup power system for the Canadian Armed Forces, and solar power.

Hydrogen in Motion (H2M)

The world is moving to renewable energies and hydrogen is key to a carbon free society, but high costs and technical challenges of storing and transporting hydrogen, either as a compressed gas or in liquid form, significantly impede the adoption of hydrogen technology. Hydrogen In Motion Inc.(H2M) has engineered a proprietary nanomaterial that selectively attracts hydrogen under ambient temperature and low pressure; providing twice the hydrogen in the same volume at half the cost. H2M conformable tanks will revolutionize the industry, dramatically driving down capital and operating costs and open new markets from drones to utility scale energy storage.

ATTEND OUR UPCOMING SUMMITS

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FEBRUARY 4-6, 2020

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SUMMARY REPORT



2019 SUMMIT

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