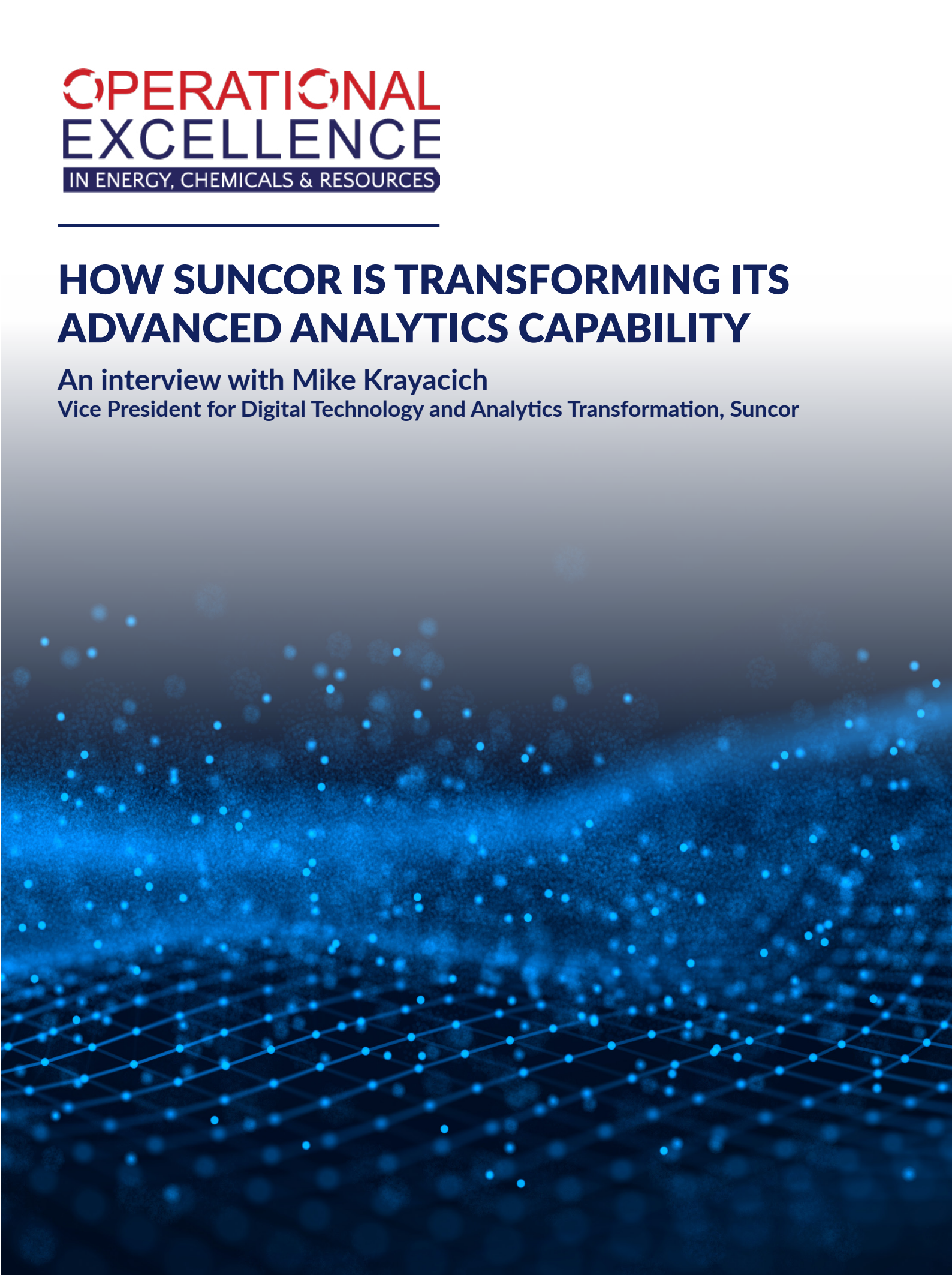
OPERATIONAL EXCELLENCE
IN ENERGY, CHEMICALS & RESOURCES

HOW SUNCOR IS TRANSFORMING ITS ADVANCED ANALYTICS CAPABILITY

An interview with Mike Krayacich

Vice President for Digital Technology and Analytics Transformation, Suncor





To start, Mike, can you tell us about your professional background leading up to, and including, your current role as Vice President for Digital Technology and Analytics Transformation at Suncor?

I studied chemical engineering in university and then went on to work in the engineering and construction industry for 14 years. After that, I went to Suncor and I've been at Suncor 17 years. During my time at Suncor, I've spent most of my time in engineering, operations, and technical roles. I spent the first four or five years in our projects organization, and I built a lot of our in situ facilities including Firebag Stage 2 and 3. After that, I went into operations and ran the Firebag operations.

When Suncor and Petro-Canada merged in 2009, I led our in situ merger team for the better part of that year, and then coming out of that, we set up our in situ business unit, and I was our Vice President for Technical Services for In Situ and did that for three or four years. In 2011, we reorganized our oil sands business and I came in as the technical leader for Oilsands and then I moved into my current role as Vice President for Digital Technology and Analytics Transformation. In my current role, it's actually in a new organizational structure for Suncor and it's being led by a Chief Transformation Officer - Bruno Francoeur - who sits on our Executive Leadership team. My role as Vice President Digital Technology and Analytics is looking at how we apply digital technology across in our operating businesses as well as functional group and how we are going to advance our analytics capability.

I'm in the process of building an Advanced Analytics organization. We've been hiring data scientists, data engineers, developing our advanced analytics strategy, and then are starting to operationalize that now. We are working across the company with all of our business units and functions looking at use cases and at the same time building an Advanced Analytics Academy.

So, your team is part of Suncor's recently set-up Transformation Management office; can you tell us more about this?

The organization started in May of last year and is headed by Bruno. The primary focus areas for the Transformation Management office are my group, responsible for digital technology and analytics; people and culture transformation; business process and data transformation; workplace transformation; the digital mine; project management and then engagement and communication. Those are the six main roles that encompass our TMO.

Data and analytics are critical assets. How do you get the entire organisation to view it in this way and to buy into the overall transformation?

We've established at the executive level six transformational priorities for the company and those have been cascaded across the entire organization. Two of those priorities are called "Creating Value From Data" and "Securing Our Future Through Digital Technology"

In terms of our mandate and what we're really set up to do, all of these roles are full time, they're all either functional leaders or business leaders that have come from other parts of the business. We've all been assigned full time to the TMO, and our mandate really is to accelerate the transformational change. So, through our ELT, we've established six transformational priorities across the company, and then the TMO is really there to act as a catalyst to accelerate that transformation and change.

Great. So, you are leading the digital and analytics part of the transformation you just mentioned. I understand you have eight programs in your jurisdiction. Can you tell us a little bit about those?

I mentioned one already around advanced analytics: how do we build up our advanced analytics capability across the company? How do we build a center of excellence? So, we're in the process of doing that. We're hiring data scientists, data engineers, data visualization roles. We've been working with the company across the organization to establish our strategy, and then the use cases we want to execute. We're in the process of identifying our top ten use cases we want to execute over 2020, and we're in the process of working with the BUs on these.

Like many energy companies, we are a technical organization; lots of people with engineering backgrounds. We are focussed on how do we can upskill those folks with new ways of working, agile, artificial intelligence, machine learning-type skills to go execute these use cases? That's the advanced analytics piece. We're also focussed on another project around the integrated energy value chain, so how do we look at the value chain across the company and start to optimize that? From resource extraction in situ and in the mines, through upgrading our refining network, right through to the retail customer. How do we start to optimize processes from the front end to the back end of the value chain? How do you optimize what the market's signaling, in terms of demand and pricing, and then how we run our operations to optimize that?

One of the other programs we are focussed on is called Digitally Optimised Assets: how do we apply digital technology into our operating environments? And one example of that would be what we're calling our connected worker program, so how do we enable operators and start to digitize some of the processes that are currently paper-based and manual.

We're also working on what we're calling APM: how do we start to use predictive analytics for our critical equipment, pumps, compressors, critical equipment across the company to make better decisions faster? So we can see a fault earlier, and then we can intervene early with maintenance.

Another part of the program is our customer-centric experience: how do we start to digitize and advance our customer experience from our retail network? So, we've got a large retail network with our Petro-Canada brand, over 1,400 retail stations across the country including 50 electric vehicle fast-charging stations, and how do we start to interact with the customer in a much different way? How do they have much a better experience when they're buying our products at the service stations?

Finally, we are also working on our Supply Trading organization transformation: optimizing inventory management and supply and trading. Those would be a few examples of the things we're doing in the digital technology portfolio.



That's great. Can you tell us more about the use cases that you've identified for your advanced analytics work?

We looked across the company to identify improvement opportunities, and we started with a list of more than 350 opportunities. We put those through a relatively simple prioritization matrix based on value, based on the availability of the data, based on the complexity of the problem as well as a number of other critical criteria.

We ranked them and identified the top ten, and now we're working with the businesses to staff those initiatives.

We've defined a few new roles, including a product owner and a business translator, which are business unit roles that have a deep understanding of the process. We want them involved so they'll bring the business unit knowledge. We'll match them up with a data scientist, with an agile scrum master to data engineer, and as a result, we have people from the business and people from the center of excellence now to go work on resolving that problem.

So, what's next when it comes to technology and advanced analytics at Suncor?

We're super-excited about the possibilities around digital technology and analytics. In the digital technology area, some things are very new or just getting going. Some things we've been doing for a couple of years like autonomous haul trucks in our mine; we've been doing that for a couple of years, and so we're looking at scaling that. Predictive analytics for critical equipment, we've been doing that for about a year and a half. We've got a number of models applied on about 500 assets, and we're looking to scale that to a couple of thousand assets across the organization.

Things that we've piloted over the last couple of years, we're looking at scaling broadly the things that have strong business cases. We're looking at standing up several new things in technology: how do we look at our value chain, how do we apply artificial intelligence and advanced analytics to opportunities across the company. It's about driving for value.

We are asking ourselves how do we use technology, how do we use analytics to generate free cash flow across our existing asset base? And we're pretty excited about some of those opportunities.

Is there anything that you wanted to add Mike?

I think, maybe just the other thing I'd add is, we're not doing this all on our own; we're looking at how we're building out our ecosystem, so we're working with others. We've established a strategic relationship with Microsoft. We're looking at partnering with some local companies, in terms of data science capability, local companies, the universities in Alberta and Canada, so we're really interested in building that ecosystem as well and building the capability across Alberta and across Canada and the rest of the North American region.

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