accenture

DELIVERING DIGITAL DIVIDENDS

HOW TO MAKE TECHNOLOGY INVESTMENTS REALLY PAY OFF

FOREWORD

In 2017, Accenture showed how Industry X.0 businesses combine digital technologies to drive exceptional efficiency gains and enable new business models to promote growth.

However, many companies embarking on their digital reinvention journeys simply focus on internal strategic alignment between technology and business objectives and pay little attention to external triggers such as ecosystems that will help them unlock value from technologies being adopted.

Our extensive research on companies that are on the digital transformation journey uncovers a distinct set of levers that allow executives to pinpoint gaps they must bridge to effectively adopt and integrate those new digital technologies and ultimately drive value. To help companies harness these findings, we have developed the Digital Dividends Diagnostic.

What do companies stand to gain by using such a diagnostic? As just one example shown by our research, companies in our sample who actively engaged with their ecosystems—one of five key levers or "value-triggers" that make up the diagnostic—were able to save millions of dollars more in comparison to those who did not.

We will also introduce you to the companies that are already benefiting from focusing on multiple value-triggers, as they build new business models (some using the Accenture Digital Services Factory methodology) and create more effective technology-driven services, products and operations.

We hope this report will help you take the next step in your journey to becoming an Industry X.0 business.

Dave Abood

Aidan Quilligan

GETTING TO AN INDUSTRY X.0 WORLD

These days, it's not enough to digitize one part of your business and expect positive results for the entire organization. Companies that are profitable deliver game-changing experiences and products, adopting and integrating digital technologies to achieve higher efficiency and new growth. These Industry X.0 businesses embrace change and leverage the right combinations of digital technologies–and they do it continuously.

Take BP. Partnering with tech-startup Kelvin, the oil and gas multi-national tackled pollution and preventative maintenance at production site wells by combining Big Data and artificial intelligence (AI). BP installed sensors—including methane-detecting cameras—that collect and analyze data about every aspect of the field,[1] including years of maintenance records and even the weather.

The result? The methane emissions from these wells decreased 74 percent, production volumes increased 20 percent and overall costs dropped 22 percent.[2] That means greater efficiency, cost savings and business growth.

But identifying the perfect combination of rapidly evolving digital technologies to create such value isn't easy. As we discovered in our survey of 900+ multi-billion-dollar enterprises, only 13 percent of executives believe they are getting both top-line and bottom-line-growth from their digital investments (see figure 1).

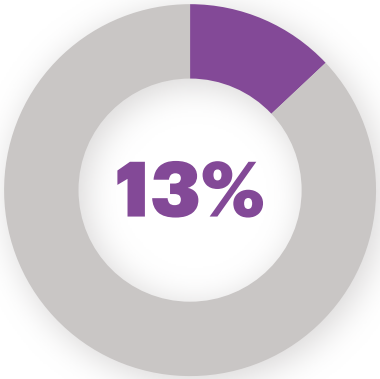
Industry X.0 businesses know how to digitally reinvent their operating models, production and value chains to deliver meaningful worker and customer experiences, at speed and scale. And they are markedly better than their peers at combining digital technologies profitably.

"Almost 50 percent of the executives surveyed cited an inability to successfully combine rapidly evolving digital technologies as a key obstacle to transforming their business into an Industry X.0 enterprise."

FIGURE 1

Combining fast evolving digital technologies is hard. Creating value from them is even harder.

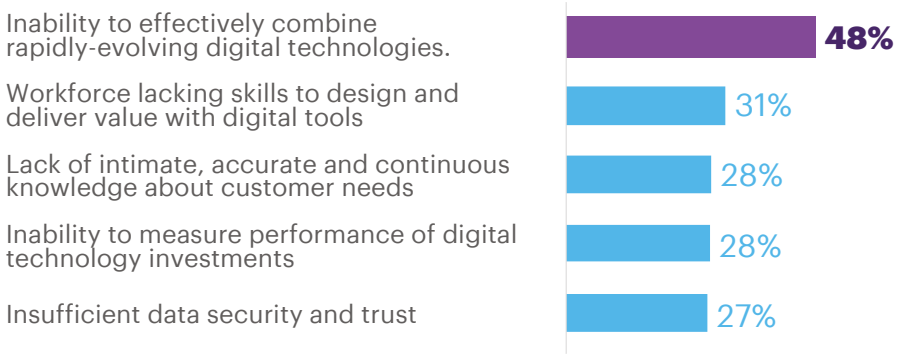
Only 13 percent of the companies we surveyed achieved both top-line and bottom-line growth with digital



% of executives saying that they get both higher efficiency and new experiences from digital

Almost one in two companies struggle to effectively combine rapidly evolving digital technologies

TOP 5 CHALLENGES TO DRIVING EFFICIENCIES AND EXPERIENCES WITH DIGITAL



Source: Accenture 2017 Global Industry X.0 Research

"Many companies lack knowledge of drivers that can help them create value with digital technologies."

Prof. Nicolas Van Zeebroeck
Professor of Digital Economics & Strategy, ULB, Solvay Brussels School

THE CHALLENGE OF DIGITAL REINVENTION

Our experience of working with companies in the sphere of digital transformation shows that many lack a comprehensive vision for newly adopted technologies and a plan for how business models and organizations will adapt around the tech.

On the other hand, successful Industry X.0 businesses benefit from digitization roadmaps that guide tech adoption and integration. These roadmaps involve proactive measurement of external metrics, or "value-triggers," that may advance or hinder digital transformation efforts. While internal strategic alignment is a must, it will be useless without a robust analysis of value-triggers.

So, which value-triggers must companies assess and address while building their technology roadmap?

KEYS TO SUCCESSFUL TECHNOLOGY ADOPTION

Through numerous consultations with experts specializing in technology adoption combined with extensive reviews of industry reports and proprietary surveys, we have identified five value-triggers that can drive the successful take-up of a new technology. Our Digital Dividends Diagnostic enables companies to consider individual technologies in the context of these key factors and related sub-elements (see figure 2):

1 TALENT READINESS

An analysis of your technology talent pool and its current size and quality serves as a barometer for talent readiness. Carefully assessing and managing the talent pool ensures the availability of consistent technical and strategic skills throughout the entire timespan of technology adoption. It also requires you to ask important questions about capabilities. For instance, do you have access to enough people, both inside and outside your organization, who understand the technology and can apply it to your business and industry context?

2 CAPITAL ADEQUACY

The amount of capital being invested for development of a technology and its applications—across sectors—measures the technology's capital adequacy. Venture capital investments, for example, present one indication of the money funneled into startups and tech incubation centers for future development. Mergers and acquisitions (M&A) activity is another great barometer and a worthwhile source of market intelligence as technology applications mature. For a technology that's in the early stage of capital investments, for example, could your company maximize value by acquiring a startup in this area?

3 ECOSYSTEM MATURITY

The maturity of the ecosystem to drive value with a technology, including partners and vendors, is the third value-trigger to consider. For example, is your preferred parts supplier also investing in blockchain as you are? Do you share the same vision for an artificial-intelligence-enhanced supply chain with your primary distributors?

Ecosystem evaluation should also include an exploration of standards and protocols in place, such as those governing technology applications and use cases. Think about how these governing standards promote or hinder technology adoption.

4 ADOPTION INTENSITY

Evidence of successful technology integration—within the same or in related industries—can also guide your investment decisions. One starting point? Evaluating the average industry spend on digital technologies, which can help you decide how much to invest and for what outcome. Here's another: identifying the estimated growth in spending for a technology across the market.

5 VALUE POTENTIAL

Value potential centers on estimating the plausible returns on digital technology investments, which sets expectations for both executives and shareholders. Quantifying expected top-line and bottom-line gains can serve as a useful benchmark throughout your digital reinvention journey.

FIGURE 2

Evaluation of technologies using the Accenture Digital Dividends Diagnostic

VALUE-TRIGGER	SUB-ELEMENT	SUB-ELEMENT DESCRIPTOR
TALENT READINESS	**Existing Workforce**	What is the availability of talent/skillsets required for development, integration and maintenance of a said technology?
	New Job Postings	What is the current demand for talent having a specific technology skillset?
CAPITAL ADEQUACY	**VC Investment**	How has venture capital investment in this technology area grown in the past 3-5 years?
	M&A Activity	How many M&A transactions related to the technology have taken place during the last 3-5 years?
ECOSYSTEM MATURITY	**Standards & Protocols**	Are widely-accepted technology standards and protocols governing companies available?
	Interoperability	What efforts have been made to address interoperability challenges (e.g., formulation of open standards, open software/platforms, etc.)?
	No. of Consortiums	How many consortiums have been formed for the advancement of the technology (both academic and industry-specific)?
	No. of Start-ups	How many start-ups are currently focused on advancing the technology and its use cases?
ADOPTION INTENSITY	**Use Cases - Spread and Variety**	How many potential use case applications can be built using the technology?
	Sectoral Adoption	How many use cases have moved from pilot/ testing to commercial deployment so far?
	Enterprise Spend	What is the estimated growth in spending for this technology?
	No. of Companies in Business	How many companies are currently in the business of developing the technology or related offerings?
	Enterprise Adoption	How many companies have shown interest in investing in the technology?
	C-Suite Perception	How does the C-suite of Industry X.0 industries perceive the technology in terms of its ability to improve efficiencies and deliver new experiences?
VALUE POTENTIAL	**Incremental Cost Savings**	What is the potential cost savings that this technology can unlock?
	Incremental Top Line Gains	What is the potential gains in market value that this technology can unleash?

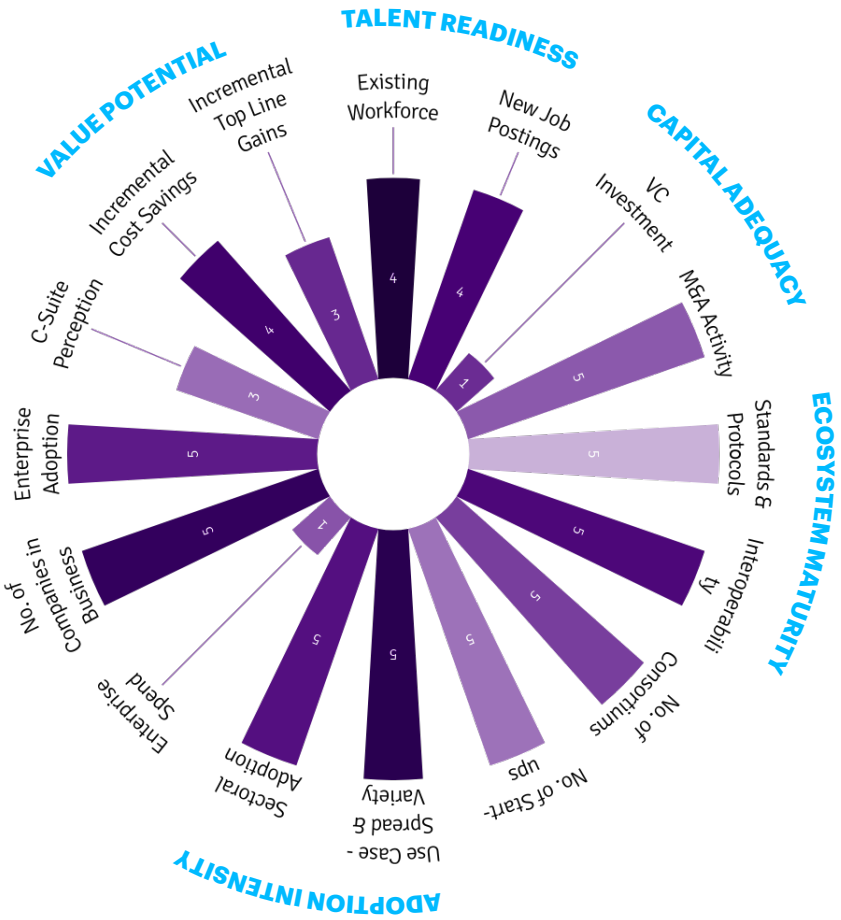
Each technology identified as part of a winning combination in our "Combine and Conquer" [3] research has been assessed individually and in relation to the others in terms of these value-triggers. Here are their value-trigger scores:

1

BIG DATA ANALYTICS

As a mature technology, Big Data analytics benefits from a very robust ecosystem. It tops the charts in terms of governing standards, number of startups as well as levels of interoperability. And, its maturity also explains why it scores low on VC investments and growth in enterprise spends.

A French utility discovered the enormous capabilities of Big Data to improve how it operated its heating and cooling networks and provided services for customers. Historically, the company relied on manual and unstructured processes to gather and analyze performance data of key assets, such as boilers and pumps. But they discovered that data management and analysis of such an overwhelming amount of information could be improved. The company also sought to track the performance of asset-intensive co-generation units, which can generate electricity and heat simultaneously – another high-value opportunity. Now, with the use of real-time data, Big Data technologies identify root causes of deviations in the performance of the company's complex assets.



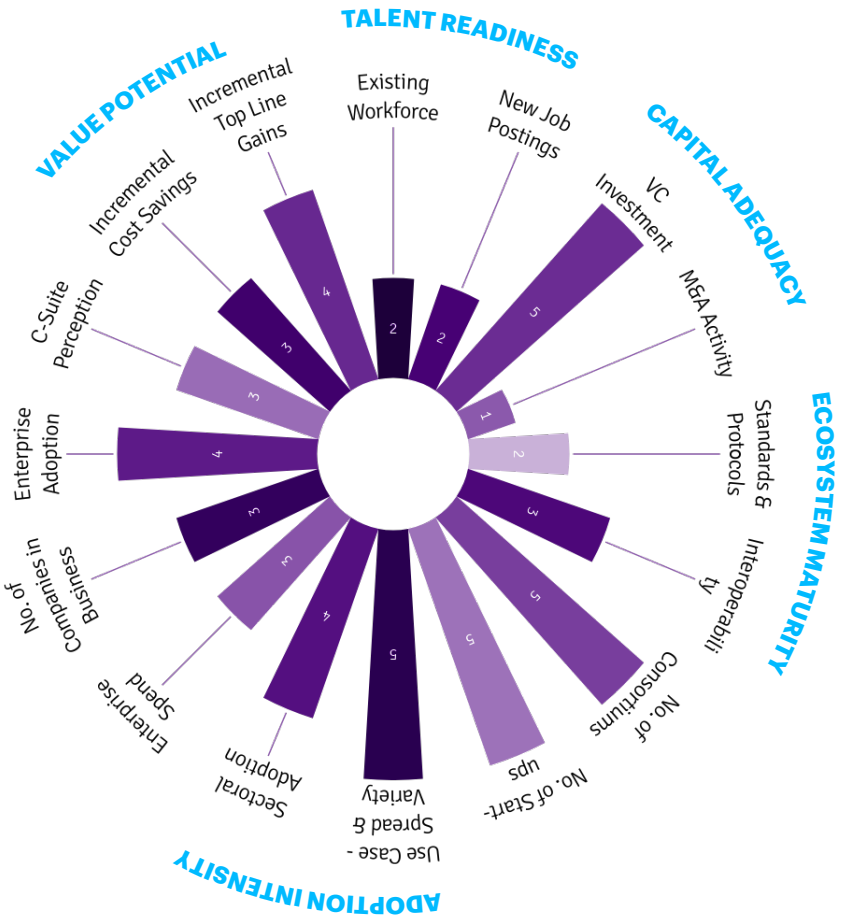
2

ARTIFICIAL INTELLIGENCE

AI has tremendous latent potential, considerably leading the pack both in terms of start-up and VC investment. What's more, thanks to its widespread industrial applicability and cross-sector adoption, C-suite executives see significant opportunities for value-creation, especially to drive new-to-market products and experiences.

"Everyone knows what Big Data can do today, and what its capable of doing in the not-so-distant future," Tracey Countryman, Managing Director and Industry X.0 lead for Accenture's Resources business, said. "The challenge is to make it work for clients, be with them through the journey and help them achieve tangible returns on their investment."

Case in point? Consider the previous example of the French utility. Together, AI, Big Data and a robust cloud platform reduced operating costs by providing actionable, relevant and real-time asset information to operations, maintenance and management teams.



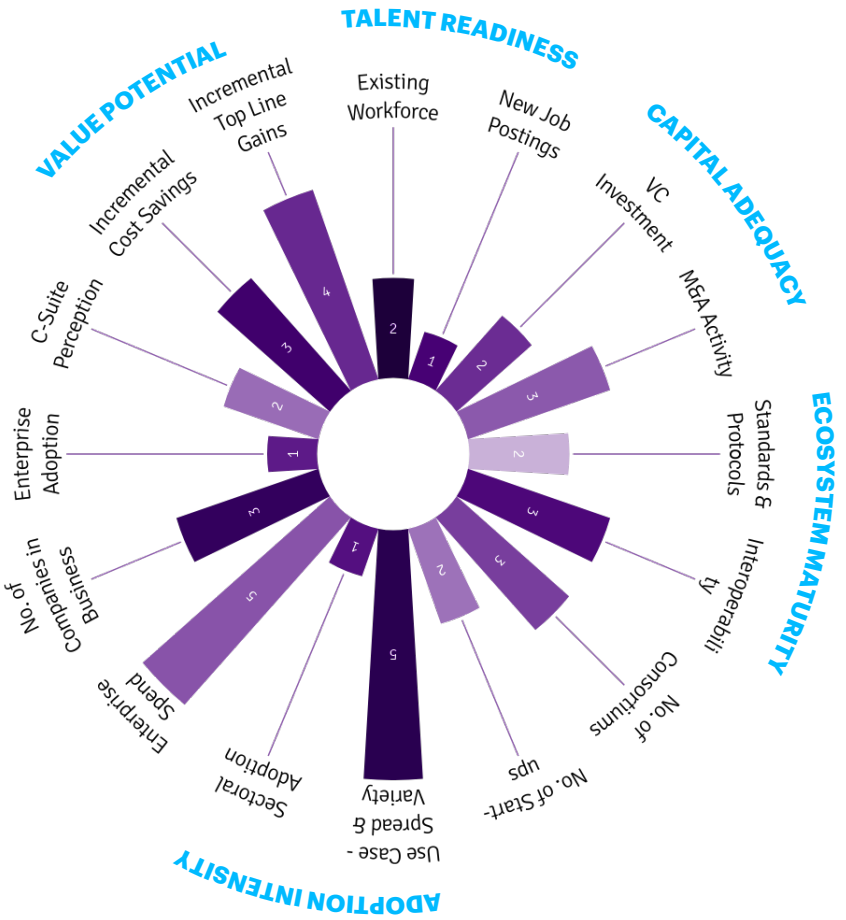
3

BLOCKCHAIN

Blockchain can also deliver significant cost savings and top-line growth. Yet, it currently suffers from a very low adoption rate and a poor C-suite perception regarding the returns on investment in the technology. That said, things may well look up for blockchain in the near future as growth in enterprise spend outpaces that of most other technologies.

So how can companies enhance and embrace blockchain adoption? Consider the case for collaboration:
One blockchain solution tested by a diverse group of partners, including AB InBev, Accenture, APL, Kuehne + Nagel and a European customs organization, eliminates the need for printed shipping documents and has amounted to huge annual savings for the freight and logistics industry.[4] Information is no longer exchanged physically or digitally. Instead, the data is shared and distributed using a blockchain. The technology speeds up the entire flow of transport documents, simplifies data amendments across the shipping process, streamlines the checks required for cargo, and reduces the burden and risk of penalties for customs compliance levied on customers.

"This collaborative platform will provide an industrialized, secure and scalable approach for the shipment process and trigger transformation of the shipping industry significantly," explains Adriana Diener, Managing Director and Global Lead for Accenture Freight & Logistics Practice. "Blockchain is changing how the shipping industry works."



4

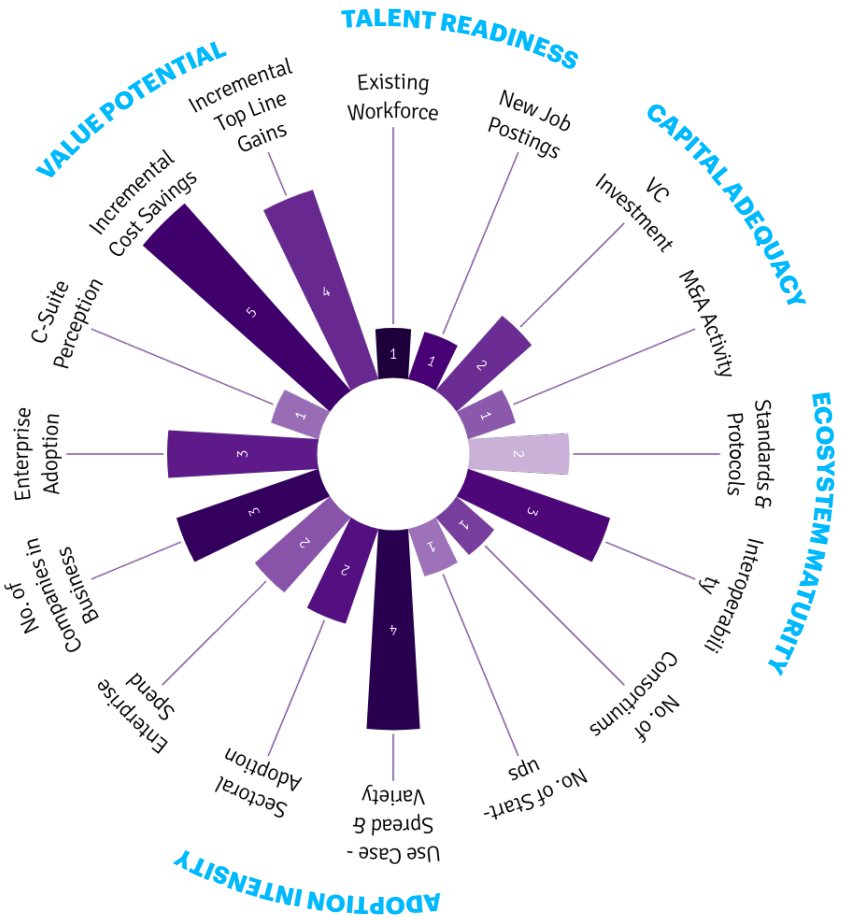
IMMERSIVE EXPERIENCES (AR/VR/MR)

Immersive experience technologies such as augmented reality (AR), virtual reality (VR) and mixed reality (MR) may be the most underrated among the bunch. Even though they boast the highest potential value, they fall far behind with regard to investments, skilled talent, governing standards and interoperability. Plus, the C-suite perception of immersive experience technologies still remains low.

David Sovie, Accenture's Global CMT-Industry X.0 Lead, explains, "The best way to trigger better C-suite perception about a technology is to transform it into a driver of exponential productivity or new growth." This is exactly what happened with AR at Airbus.

We collaborated with Airbus to develop industrial-grade smart glasses to improve the accuracy and reduce the complexity of aircraft cabin furnishing. Using contextual marking instructions, the smart glasses display all required information for an operator to help mark the floor faster and reduce errors to zero. The eyewear technology also offers interactivity features, including barcode scanning, data retrieval from the cloud, voice command and AR. With these wearables, aircraft seat locations are checked for accuracy and quality and can be marked down to the last millimeter.

The smart glasses reduced training time as operators can now receive data from the eyewear in real time without needing to rely on hard-copy manuals. What's more, the overall productivity for the cabin seat-making process per aircraft improved 500%.[5]

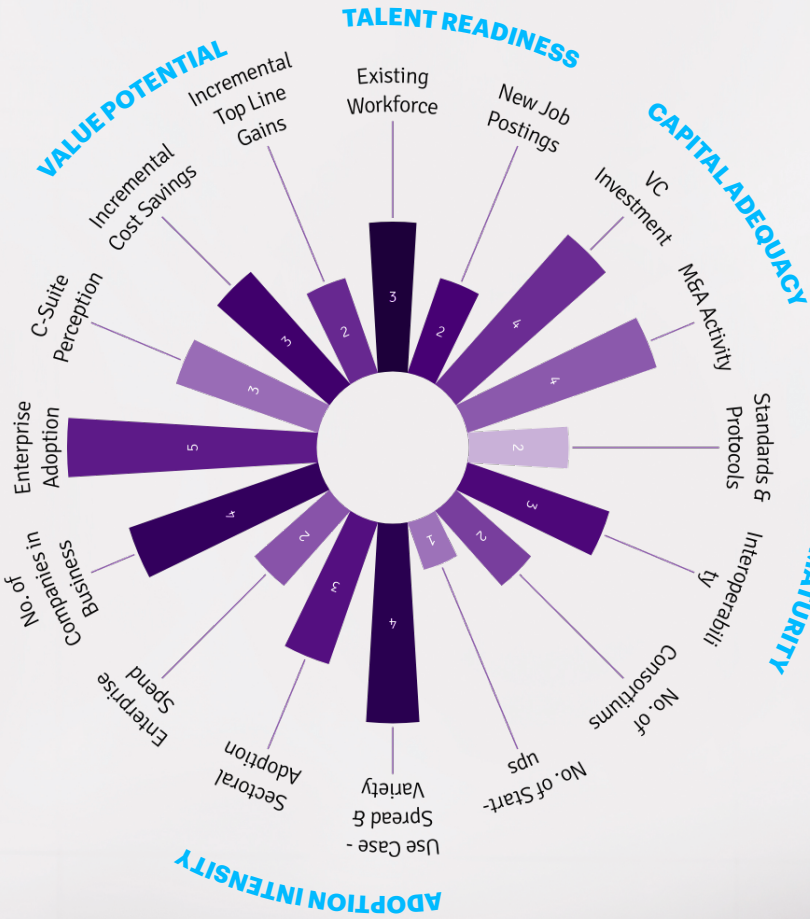


5

ROBOTICS

As the Airbus example shows, there's a need for technology that can improve productivity, particularly eliminating repetitive, labor-intensive tasks. Leading the pack in terms of capital adequacy, robotics is a highly mature technology with proven industrial applications. While robotics is largely regarded as a technology that can only deliver efficiency gains, it still enjoys high levels of enterprise adoption and commercial deployment, especially in combination with other technologies.

In the earlier case of the French utility, for instance, robotics supplemented the use of Big Data and other technologies. First, the performance of the company's different equipment types across the energy production, distribution and delivery lifecycle was assessed. By combing more than two terabytes of local and central data sources, assets with the greatest optimization potential, an optimal asset mix and opportunities to reduce fuel consumption were all identified. Robotics and AI then cleaned the asset performance data, while data migration and mining tools helped establish a framework for qualifying and identifying other ways to optimize operations. A strategy was then devised to generate more than US$1 million in savings within just one year with minimal to no capital expenditures required.



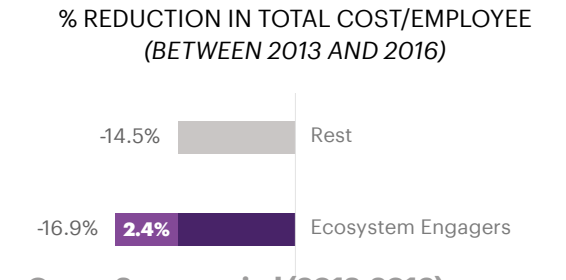
WHAT'S AT STAKE FOR COMPANIES THAT FAIL TO ANALYZE VALUE-TRIGGERS?

Thorough analysis of the value-triggers for digital technologies is critical. A poor understanding will only dilute returns on technology investments, the competitive edge for many firms. In fact, improper assessment and management of even a single external value-trigger—such as the ecosystem—can make a significant difference. For instance, between 2013 and 2016, companies that engaged their ecosystem saved an additional 2.4 percent per employee and had additional costs savings of 5.2 percent compared to those who didn't. That's a considerable amount of financial value for any company to forego (see figure 3). But only those that successfully digitize and become an Industry X.0 business can consistently take hold of this value.

Systematically analyzing the value-triggers of adopted technologies enables companies to thrive in the digital era. It's crucial for companies to thoroughly assess all five value-triggers–talent readiness, capital adequacy, ecosystem maturity, adoption intensity and value potential–for a complete technology roadmap.

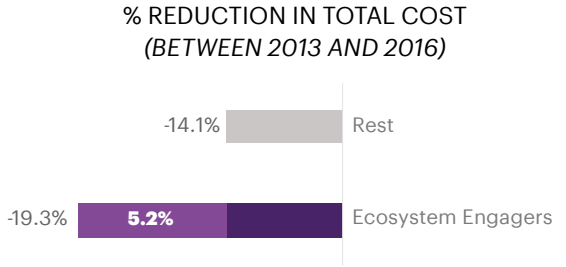
FIGURE 3

Disregarding a value trigger can be costly



Over a 3 year period (2013-2016), each Ecosystem Engaging company saved an additional

US$ 11K
per employee



Over a 3 year period (2013-2016), each Ecosystem Engager, as compared to each non-engager, enjoyed additional cost savings of

US$ 844 million

DIGITAL DIVIDENDS IN ACTION

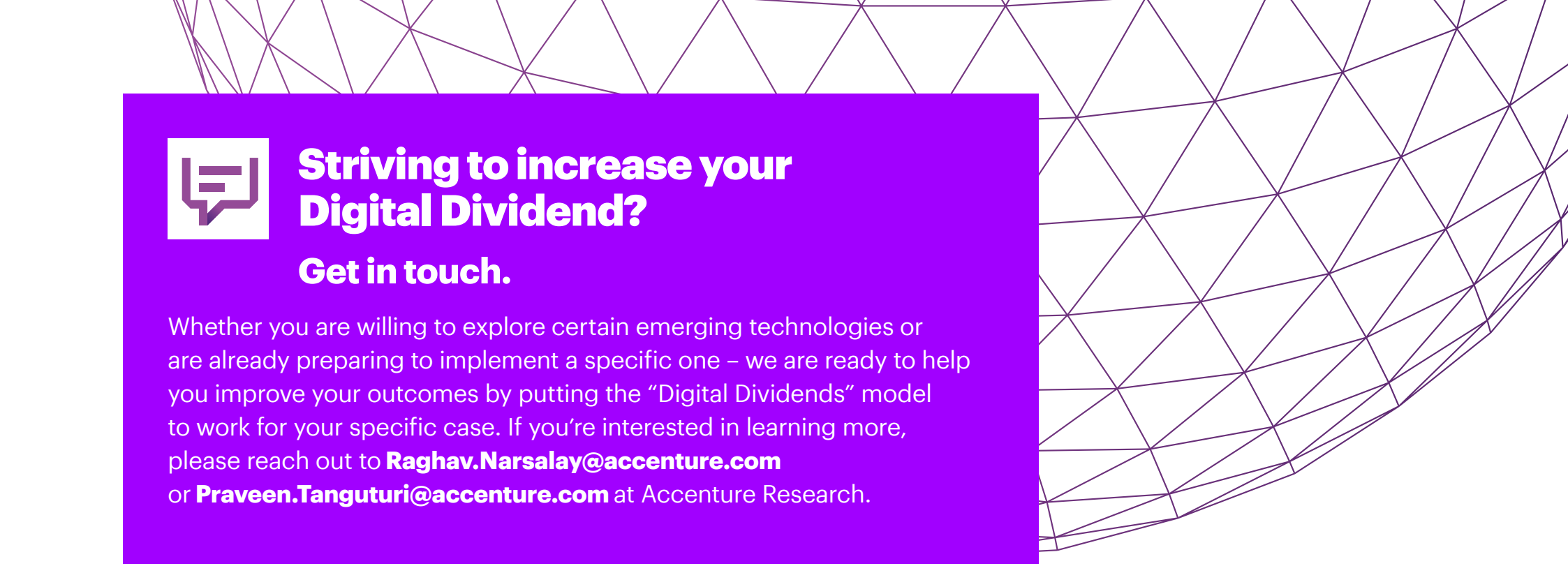
With a data-driven model that assesses value-triggers, companies can better engage with their digital reinvention journey.

Take Faurecia, the global auto-component manufacturer. By deploying a mix of AI, advanced analytics, AR/VR and blockchain, the company aims to design a car cockpit that's connected, intuitive and reflective of driver and passenger preferences. To do this, Faurecia has employed the Digital Services Factory, a modular approach and methodology that helps support the integration of new technologies and development of operating models.

"It serves as a good framework to ascertain, measure and bridge gaps across key value-triggers such as talent, ecosystem, investment allocation, amongst others," says Eric Schaffer, Accenture Global Products Lead. "This is helping both partners explore innovative ways to secure optimal returns from their technology investments."

Today, Faurecia is pursuing partnerships to identify and combine technologies to develop the intelligent cockpit. The company is renewing investment in in-house R&D and expanding its technology expertise. And it has started actively scouting for external skills at key locations, including Silicon Valley and Bangalore.

Industry X.0 businesses leverage digital technologies to continuously create new, hyper-relevant experiences for both B2C and B2B operations. As important as the technology, however, is an enterprise-wide cultural capability to act with speed, focus and agility to meet needs and seize opportunities.



Striving to increase your Digital Dividend?

Get in touch.

Whether you are willing to explore certain emerging technologies or are already preparing to implement a specific one – we are ready to help you improve your outcomes by putting the "Digital Dividends" model to work for your specific case. If you're interested in learning more, please reach out to **Raghav.Narsalay@accenture.com** or **Praveen.Tanguturi@accenture.com** at Accenture Research.

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