



The Digital Economy

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Abstract

Five major technology trends have collided to shape what is becoming known as the digital economy: Hyper-connectivity, supercomputing, cloud computing, cyber security, and smart products have created a world where the traditional boundaries of products vs. service offerings no longer exist. Individuals, businesses, and societies are connecting in real time, creating a world that is more collaborative, intelligent, and responsive. Fortunately, the oil and gas industry has been highly automated and digitized for decades. Yet the technology powering the digital economy is taking connectivity to a new level, transforming nearly every aspect of operations and customer engagement. Early adopters are growing shareholder and stakeholder value faster than their peers while those failing to adapt are falling behind. Staying ahead of the curve means taking a hard look at existing practices and reimagining everything from business models and processes to work management solutions.

Keyword: *Digital Economy, Digital Transformation, Digital Communities, Process, Sharing Information, Economic Development*

Characteristics of the digital economy

Over the past decade we have seen significant changes in how people and businesses connect. Building on the popularity of social networks, enterprises have established their own business networks to connect suppliers, customers, and internal systems. The result is a growing global trade that is estimated to reach \$65 trillion by 2020 ([SAP Business Trends](#)). Add to this the rise of the Internet of Things, with an estimated 45 billion connections between devices by 2020, and you have a business environment of endless possibilities. To successfully adapt, one must first understand the five main attributes of the digital economy:

1. **Digitized and tracked.** In a digital economy, analog objects generate digital signals that can be measured, tracked, and analyzed for better decision making. While the oil and gas industry has been ahead of the curve on digitization for over 30 years, digitalized assets have been limited to high-value equipment and machinery. Now, however, lower costs for sensor technology are allowing operators to push more processing out into the field. For example, companies could connect multiple oilfields to improve forecast accuracy and increase profitability on a well level basis.
2. **Connected.** Linking assets, suppliers, workers, and stakeholders by wireless communications allows people to make data-driven decisions, thereby improving safety, efficiency, and visibility across the enterprise. By connecting remote pipelines to each other and leveraging predictive maintenance, oil and gas companies are eliminating unexpected failures, improving asset integrity, and increasing asset uptime.
3. **Shared.** The digital economy operates on sharing. Soon, companies will buy only what is needed and pay as they go. Purchasing what is needed lowers inventory costs, while buying usage as a service allows companies to pay only for

the time used and value received. Consider the possibilities of true collaboration among service station operators, third-party carriers, refineries, and terminals to consumers. Oil and gas companies could automate the replenishment of tanks, use best-buy scenarios, and plan optimized truck routes for deliveries to service stations.

4. **Personalized.** Another characteristic of the digital economy is customer personalization. Personalization means customers get tailored products and experiences from their favorite brands when and where they want them. Imagine delivering the specific type of fuel a gas station prefers at the exact moment it runs out, or providing fleet drivers with specific routes optimized to their personal preferences and driving habits.
5. **Direct.** The digital economy also allows oil and gas companies to bypass the middleman, eliminating unnecessary intermediaries or channels and creating a more direct relationship between buyer and seller. A simplified ecosystem has less friction and lowers the barrier to entry for players in another part of the value chain. Remote service monitoring is a good example of more direct operations. Leveraging remote intelligence to track, monitor, manage, report, and resolve asset issues throughout the service lifecycle eliminates the need to have full-time local personnel.

What the digital economy means for your business

The digital economy is transforming people's lives, giving them greater convenience choices and value than ever before. It's transforming society with increased efficiency, economic development and improved problem solving. And it is transforming businesses by giving decision-makers new insights to help optimize processes and make smarter decisions. The resulting

value-added benefits can positively impact a company's bottom line.

For example, oil and gas companies can strengthen customer loyalty by developing hyper-personalized products and services and a more unified end-user experience. They can also drive new innovation through technology platforms that enable the sharing of ideas from anywhere and anyone. Data-driven, actionable insights also help companies get more out of constrained resources with improved processes such as real-time resource allocations, more agile infrastructures, and sophisticated applications that can create greater abundance of scarce resources. Finally, the digital economy can drive efficiencies by preventing disruptions and automating processes such as maintenance and work load schedules.

In conclusion, companies have a unique opportunity to leverage the efficiencies and growth promised by the digital economy. It begins by looking for ways to digitize content and then capturing, analyzing, and delivering the resulting data in easy-to-consume formats so that real action can be taken. Now is the time to activate, optimize, and transform to secure new competitive advantages and establish sustainable leadership in this new world.

Transform Or Die: What Will You Do In The Digital Economy?

By now, most executives are keenly aware that the digital economy can be either an opportunity or a threat. The question is not whether they should engage their business in it. Rather, it's how to unleash the power of digital technology while maintaining a healthy business, leveraging existing IT investments, and innovating without disrupting themselves.

Yet most of those executives are shying away from such a challenge. According to a recent study by [MIT Sloan and Capgemini](#), only 15% of CEOs are executing a digital strategy, even though 90% agree that the digital economy will impact their industry. As these businesses ignore this reality, early adopters of digital transformation are achieving 9% higher revenue creation, 26% greater impact on profitability, and 12% more market valuation.

Why aren't more leaders willing to transform their business and seize the opportunity of our hyper connected world? The answer is as simple as human nature. Innately, humans are uncomfortable with the notion of change. We even find comfort in stability and predictability. Unfortunately, the digital economy is none of these – it's fast and always evolving.

Conclusion

At this moment, we are witnessing an explosion of connections, data, and innovations. And even though this hyper connectivity has changed the game, customers are radically changing the rules – demanding simple, seamless, and personalized experiences at every touch point.

Billions of people are using social and digital communities to provide services, share insights, and engage in commerce. All the while, new channels for engaging with customers are created, and new ways for making better use of resources are emerging. It is these communities that allow companies to not only give customers what they want, but also align efforts across the business network to maximize value potential.

To seize the opportunities ahead, businesses must go beyond sensors, Big Data, analytics, and social media. More important, they need to reinvent themselves in a manner that is compatible

with an increasingly digital world and its inhabitants (a.k.a. your consumers).

Here are a few companies that understand the importance of digital transformation – and are reaping the rewards:

1. Under Armour: No longer is this widely popular athletic brand just selling shoes and apparel. They are connecting 38 million people on a digital platform. By focusing on this services side of the business, Under Armour is poised to become a lifestyle advisor and health consultant, using his product side as the enabler.
2. Port of Hamburg: Europe's second-largest port is keeping carrier trucks and ships productive around the clock. By fusing facility, weather, and traffic conditions with vehicle availability and shipment schedules, the Port increased container handling capacity by 178% without expanding its physical space.
3. Haier Asia: This top-ranking multinational consumer electronics and home appliances company decided to disrupt itself before someone else did. The company used a two-prong approach to digital transformation to create a service-based model to seize the potential of changing consumer behaviors and accelerate product development.
4. Uber: This startup darling is more than just a taxi service. It is transforming how urban logistics operates through a technology trifecta: Big Data, cloud, and mobile.
5. American Society of Clinical Oncologists (ASCO): Even nonprofits can benefit from digital transformation. ASCO is transforming care for cancer patients worldwide by consolidating patient information with its CancerLinQ. By unlocking knowledge and value from the 97% of cancer patients who are not involved in clinical trials, healthcare providers can drive better, more data-driven decision making and outcomes.

Conflicts of Interest

The author(s) declare(s) that there is no conflict of interest regarding the publication of this paper.

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