Narrator:

Welcome to the MIT CISR Research Briefing Series. The Center for Information Systems Research is based at the Sloan School of Management at MIT. We study digital transformation.

Ina Sebastian:

I’m Ina Sebastian, a research scientist with MIT CISR. Today I’m excited to share with you the March 2021 research briefing, named “Three Types of Value Drive Performance in Digital Business.” I co-authored this research briefing with Peter Weill and Stephanie Woerner. We also thank Tomaz Sedej for his collaboration.

There are new types of value companies can create in the digital era. In a recent study, we conducted interviews with executives and identified three types of value for companies from digital business—value from operations, value from customers, and value from ecosystems. All three types impact company performance: using data from a global MIT CISR survey of executives, we conducted an exploratory statistical analysis and found that the three types of value collectively explained 39 percent of companies’ revenue growth and 24 percent of their net profit margins. All three types of value were significant predictors of company performance, although their relative impacts varied.

In this briefing, we describe in detail the three types of value and how that value is captured in the financial performance of the company. And we illustrate how two companies, Maersk and Kaiser Permanente, designed digital initiatives specifically to create value from ecosystems—a new value for many large, traditional companies.

We consider value to be all the beneficial outcomes from digital business, such as lower cost, a better digital offering based on more data, better customer experience, and more loyalty and growth from cross-selling and from innovative products. In our research, executives described three interdependent types of value for the company from their companies’ digital initiatives:

Value from operations: The foundation of digital business, this includes reduced cost and increased efficiency and speed. In our survey, companies created this value by developing modular components, automating processes, and becoming more open and agile. Companies were on average 54 percent effective at creating this value.

Value from customers: This includes increased revenue from customers via cross-selling and new offerings, plus more customer stickiness. In our survey, offering more choices and expanding knowledge of customers were important drivers for creating value from customers. Companies can leverage interdependencies between value creation from customers and operations—imagine the intersection of two overlapping circles. For example, self-service offerings help create both value from customers and from operations. Companies were on average 40 percent effective at creating value from customers.

Value from ecosystems: This includes revenue from ecosystem participants plus new value from customers and operations through partnering. Companies create the most value from ecosystems when they leverage partnering to offer go-to destinations, which drive reach and range and help retain innovation. Companies with an ecosystem business model create more value from ecosystems than companies without that type of business model, and in earlier research, MIT CISR found that companies with an ecosystem business model are high performers. Other drivers—which are also important for creating value from operations and customers—include digital connections via APIs and access to ecosystem data. Companies were on average 30 percent effective at creating value from ecosystems.

The three types of value were significant predictors of firm performance individually; an exploratory statistical analysis of the three combined showed that each significantly contributed to the overall impact on company performance. With a 10 percentage point increase in value, value from customers had the strongest relative impact, with an increase of 5.9 percentage points in revenue growth and 4.5 percentage points in profitability; next was value from ecosystems, with 4.2 and 2.1 percentage point increases; and then value from operations, with 2.1 and 1.5 percentage point increases.

Value from ecosystems contributes only a small part of revenue growth and profitability for the average company today, but in our research it was becoming a significant contributor to company performance for the companies that create it. While many companies are not able to create the full potential of value from leading ecosystems, by participating in ecosystems and pursuing digital initiatives, as described in the following case studies, they can increase value from ecosystems over time.

Kaiser Permanente is a leading not-for-profit healthcare provider with 12.4 million members in eight states in the US. Digital technologies have been key to enabling an integrated care model that provides members with seamless access to care at low cost. In 2018, the organization delivered thirty-one million prescriptions, fifty-four million lab results, and hundreds of thousands of telehealth visits online. Kaiser Permanente is building a health and wellness ecosystem with digital partners to create value from ecosystems.

Kaiser Permanente partnered with Samsung in 2018 to develop an at-home program that uses digital technologies to guide rehabilitation after a heart attack. Kaiser Permanente’s virtual cardiac rehabilitation program, started as a pilot program, is now at scale in Southern California and deployed in Georgia, with almost 7,000 patients enrolled.

The number one priority for the virtual cardiac rehab initiative is creating new value from customers through partnering in the form of increased engagement, resulting in healthier members and more loyalty. Since the program commenced, more than 80 percent of patients in the at-home program have completed rehab, compared to only 50 percent of patients in-clinic. The program has reduced cardiovascular mortality by 27 percent. As a not-for-profit organization, Kaiser Permanente’s primary goal is to provide value for customers through high-quality affordable healthcare.

The second priority is creating new value from operations through partnering. The digital solution has created greater efficiency in healthcare delivery, improving productivity of care delivery staff, and cutting administrative and clinical costs from outcomes such as reduced hospital readmissions. Less than two percent of patients in the at-home program have been readmitted since it started, compared to 30 percent of patients without rehab and 15 percent with in-clinic rehab. Other value created has included ease of enrollment and the elimination of transportation costs and co-pays.

The longer-term opportunity is a go-to destination. Kaiser Permanente is creating a one-stop destination for its members, increasingly including partners outside the organization’s health system. Kaiser Permanente developed and now runs a new, innovative offering in collaboration with ecosystem partner Samsung. The organization tests about a dozen partner programs at any time, including digital health coaching and telehealth, and explores potential collaborations with other technology companies. Kaiser Permanente is building the ecosystem selectively and gradually, with targeted applications and alliances, due to the effort needed to scale solutions in clinical settings, complicated by challenges such as integration, training, and data sharing with partners.

A. P. Moller - Maersk (Maersk) is a global transport and logistics company operating in 130 countries. In 2016, Maersk began a digital transformation from port-to-port ocean carrier to integrated logistics company. The goal of one digital initiative—the Global Trade Digitization (or GTD) initiative—was to resolve inefficiencies for customers by combining information about supply chain events and trade documents using blockchain, thereby creating more value from operations and customers. In an industry of point-to-point solutions, customers wanted an ecosystem solution that would manage all their containers.

Maersk and strategic partner IBM jointly developed the platform and launched it as a commercial solution named TradeLens in December 2018. But value creation was delayed because some companies were concerned that in joining the platform they would be sharing secure data with a competitor. Maersk created the independent subsidiary GTD Solution Inc. in part to alleviate this concern. GTD Solution Inc. continues the strategic partnership with IBM through the TradeLens collaboration team, with the two companies making joint decisions on development of the platform and ecosystem. Positioned as a neutral platform, TradeLens is growing. In March 2021, TradeLens has 300 ecosystem participants (up from 175 in 2020) and covers more than 50 percent of global shipping container volume.

The first priority for GTD Solution Inc. is to create new value from operations through partnering for ocean carriers by digitizing events and trade documents. The value proposition for partners to join the ecosystem is operational efficiency through more visibility of events; and reduced costs from access to digital bills of lading, as provided by the TradeLens eBL (electronic Bill of Lading) solution. A key metric for this solution is $120 net value creation per bill of lading issued, including direct benefits, and also indirect benefits (like reduced working capital requirements, and improved compliance).

The second priority is creating new value from customers through partnering. TradeLens’s number of customers and usage are increasing; the platform had 100 customers in November 2020 through its three digital offerings: the core offering, and two applications related to the bill of lading (the eBL, and one for trade financiers). In December 2020, Maersk CEO Søren Skou said, “In the coming year, we will see actual revenue growth in TradeLens…. [The venture] is heading into a new phase where we truly have something we can sell.” The platform is also enabling new customers, in particular smaller companies, to join international trade.

The longer-term opportunity is a go-to destination. In 2020, TradeLens reached a major milestone for value creation: five of the largest ocean carriers had joined the platform, with two of them live and conducting customer pilots. In the same year, GTD Solution Inc. began to partner with software companies for inland transportation. The subsidiary’s next goals are achieving a critical mass of trade financing banks and custom authorities in the TradeLens ecosystem and developing a third-party marketplace.

Using the three types of value as a lens can help your enterprise look for and evaluate opportunities, prioritize your digital investments, and then design roadmaps and outcomes that assess how those digital initiatives progress. Our results suggest that it’s not enough to focus on value from operations and value from customers—it’s time to start thinking about how your enterprise will also get value from ecosystems. While creating value from ecosystems is new for many enterprises, both Kaiser Permanente and Maersk show how companies can create the three types of value and develop goals and track progress over time. Succeeding in the digital economy means that your enterprise needs to start creating, tracking, and capturing all three types of value: value from operations, customers, and ecosystems.

Narrator:

Thanks for listening to this reading of MIT CISR research, and thanks to the sponsors and patrons who support our work. Get free access to more research on our website at cisr.mit.edu.