MIT CISR 2017 Research Projects

MIT CISR researchers focus on year-long projects to help executives meet the challenge of leading dynamic, global, and information-intensive organizations. The relevance of our research is ensured by the active participation of corporate sponsors and patrons from a range of industries.

Research results are disseminated through working papers, research briefings, an annual conference, and sponsor forums. Our 2017 research agenda includes the following projects:

Projects led by Peter Weill and Stephanie Woerner

- What Types of Digital Business Transformations Require Organizational Surgery?
- AutoData 2.0: Answering Hard Questions About Your Customers Using Your Own Data and Comparables
- What Are the Different Types of Digital Ecosystem Drivers… and How to Get There

Projects led by Jeanne Ross, Ina Sebastian, and Kate Moloney
with Monideepa Tarafdar and Mary Lacity

- Cognitive Computing: Developing the Human/Machine Partnership
- Designing Digital Organizations for Integration, Innovation, and Agility
- Exploring Blockchain

Project led by Barb Wixom

- Data Wrapping: How Companies Effectively Use Data to Create Competitive Products and Services

Projects led by Kristine Dery and Ina Sebastian

- Re-thinking Talent Management for Digital
- Orchestrating the Digital Workplace for Business Value

Project led by Nils Fonstad

- Getting Digital Innovation Right

Projects led by Peter Weill and Stephanie Woerner

What Types of Digital Business Transformations Require Organizational Surgery?

As companies reimagine themselves to succeed in a digital economy a key question is whether they can coordinate existing capabilities to both deliver great customer experience and streamline operations. Or do they need more radical organizational surgery, as many companies were not designed for the connectivity requirements of the digital era. In this research project we will look at the typical goals of digital business transformation—dramatically improved customer experience and significantly streamlined operations—and ask what it takes to achieve them. We will use a combination of exemplar case studies and a survey of senior executives to identify best practices and motivating stories.

Research questions include:

- What are the most effective types of organizational surgery and governance mechanisms in successful digital transformations?

- Do different digital transformation paths require different types of surgery or governance mechanisms?

- Is more radical organizational surgery or more incremental coordination associated with better firm performance?

AutoData 2.0: Answering Hard Questions about Your Customers Using Your Own Data and Comparables

Last year we studied how Autodata (i.e., automatically generated data) coupled with smart analytics and clever visualizations might be used to answer difficult enterprise questions. In a pilot study, we showed how transactional data could be used to highlight differences between satisfied and unsatisfied customers, and what to do about it. In a continuation of that project, we plan to 1) collect data from three to four banks in different global regions and 2) automate the collection and hypothesis testing and 3) make real time decisions on how to improve profit per customer.

Research questions include:

- Can we create a visualization that four banks can use to compare customer satisfaction, digital engagement, and profit per customer data to help answer challenging questions?

- Can we create a model of transactional data that keeps a running tab of customer satisfaction and actions to improve it?

- What drives customer profitability?

What Are the Different Types of Digital Ecosystem Drivers… and How to Get There

Recent MIT CISR research has identified 4 business models for the digital economy. One of those models, Ecosystem Driver, is the destination for a subset of your customers in a particular domain of their lives, like Aetna in healthcare, Netflix in entertainment, Amazon in shopping, and Schneider in Energy Management. The early evidence is that ecosystem drivers outperform other business models on all measures but there are real challenges to developing and managing an ecosystem, accompanied by strong first mover advantages.

Research questions include:

- What are the different types of Ecosystem Drivers and their relative performance to date?

- What does it take (e.g., visions, capability, investment, time and relationships) to become each type of Ecosystem Driver?

- How do companies buy options to become Ecosystems Drivers in the future?

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Projects led by Jeanne Ross, Ina Sebastian and Kate Moloney
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Cognitive Computing: Developing the Human/Machine

Cognitive computing is generating a great deal of hype but the impact in companies is still limited. Many companies have invested in experiments but far fewer companies can point to significant benefits. Prior MIT CISR research suggests that companies should choose their cognitive computing initiatives carefully to ensure that machine intelligence can improve a given decision or activity and accountable people can effectively teach and monitor machine outputs. Through in-depth case studies this research will examine how companies position themselves to drive value from machine learning and how they manage their portfolio of initiatives to optimize benefits.

Research questions include:

- What are the key roles in a company to manage key elements in the management and use of cognitive computing: design, implementation, operation, improvement?

- How should companies govern their cognitive computing initiatives?

- How can companies architect cognitive computing to flow seamlessly from core business activities?

Designing Digital Organizations for Integration, Innovation, and Agility

As companies attempt to take advantage of digital technologies and the greater availability of data and analytics, they are seeking to simultaneously ensure both efficiency and agility. To do so, leaders are redesigning their companies to facilitate integration while clarifying accountabilities. This has proved to be a challenging combination. This project is part of CISR's ongoing examination of how companies are redesigning themselves to meet the challenges and opportunities of an increasingly digital world.

Research questions include:

- How do companies manage the transition from hierarchical structures to more empowered, innovative environments?

- How do they define services and assign accountabilities to ensure both stable operations and rapid innovation?

- How do they create seamless interfaces with external partners to expand their capabilities and product offerings?

Exploring Blockchain

Most of the research on blockchain focuses on the platform developments that will make it a force in how business is done. If blockchain becomes a widely adopted platform, it will radically enhance transparency and accelerate the speed of business. We anticipate that it will be a disruptive force to established businesses and their embedded systems and processes. This research will examine how companies are preparing for blockchain and similar disruptive market forces. We will collaborate with multiple MIT blockchain research teams and conduct interviews of executives who are experimenting with blockchain initiatives.

Research questions include:

- Does blockchain present an imminent change in how companies transact business?

- Where are companies likely to feel impacts?

- Are some industries or functions most likely to feel these impacts?

- How—or for that matter should—established businesses prepare for blockchain or technologies that may supersede it?

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Project led by Barb Wixom

Data Wrapping: How Companies Effectively Use Data to Create Competitive Products and Services

Commoditization pressures and shifting consumer expectations have inspired many companies to use data to enrich products and experiences, a phenomenon that we call wrapping. Companies wrap offerings with data to differentiate them and to add value to customers, which increases product- or service-related outcomes that include price, sales, and loyalty. The best companies build distinctive competencies for wrapping and then coordinate wrapping's unique practices with those established to help organizations improve and/or sell. This study will investigate wrapping competencies for high-performing firms—and identify the most effective ways that firms coordinate wrapping with improving and selling activities.

Research questions include:

- What practices do firms put in place to wrap in ways that differentiate products/services, add value to customers, and ensure legal and ethical data use?

- How do IT and the product management functions perceive the effectiveness of wrapping practices?

- How do wrapping practices impact important firm outcomes?

- How do companies effectively coordinate wrapping with improving and selling activities?

Projects led by Kristine Dery and Ina Sebastian

Rethinking Talent Management for Digital

Pressure on IT to deliver digital services, faster and at lower costs, means that the ability to engage the right talent is more important than ever. Large, traditional companies have become really good at "command and control" business models that favor long term investment in the development of people and their careers. Increasingly, however, firms are reconsidering these traditional models and tapping talent pools made up of a blend of FTE, freelancer, contract and other forms of work arrangements. Our 2016 research identified four management approaches for digital talent based on (1) established talent management capabilities (transactional to relational) and (2) talent engagement approaches (FTE to hybrid/contingent).

Research questions include:

- How are digital leaders in top performing companies approaching talent management?

- How do companies design workplaces to engage effectively with digital talent across multiple employment arrangements?

- How do IT units transition to a more curated approach to engage digital talent?

Orchestrating the Digital Workplace for Business Value

Our 2016 research project on effective digital workplaces revealed that high performing firms excel at: 1) building employee connectedness for better collaboration and knowledge sharing; and 2) enacting more responsive leadership. In 2017 we will analyze the results of survey data and conduct additional interviews to understand more about how high performing companies design and lead effective workplaces to build employee experiences that add value in the digital era. In particular we are interested in understanding more about responsive leadership.

Research questions include:

- How do high performing companies understand and measure employee experience (EX)?

- How do firms enact Responsive Leadership to build effective workplaces to deliver value in the digital era?

Project led by Nils Fonstad

Getting Digital Innovation Right

Firms are expanding the number and range of innovations they introduce. Firms distribute resources across five types of innovations (process; employee experience; services/products; customer experience; and business models) and use practices to amplify the impact of successful projects.

Research questions include:

- What is the relationship between how firms allocate their total spend on innovation and performance outcomes?

- What innovation practices distinguish the most innovative firms that invest in specific types on digital innovation portfolios?