Speaker 1: 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.

Peter Weill: Hi, I’m Peter Weill, MIT Sloan Senior Research Scientist and Chairman of MIT CISR. Today I’m pleased to share with you the August 2024 research briefing that I co-authored with Elizabeth van den Berg; Jason Birnbaum, the CIO of United Airlines; and Max de Planta—

What’s Next: Top Performers Are Becoming Real-Time Businesses

While most companies have not yet completed their digitally enabled business transformations, what’s next for leading companies is to operate more in real time. Real-time businesses are those that can respond immediately to opportunities and challenges by executing key business processes through automated digitized operations and employee-made data-driven decisions, supported by governance and risk guardrails.

In a study with Insight Partners, we found that companies operating in the top quartile versus the bottom quartile of “real-time-ness” had more than 50 percent higher revenue growth and net margins—a huge premium. The top-quartile companies automated processes and enabled fast decisions by employees at all levels using trusted and easily accessible data. Real-time decision-making enables digital customer journeys that are more seamless, empowered employee experiences, and increased business agility.

Operating increasingly in real-time helps companies sense and respond to changes in an increasingly volatile business environment. There is no longer time to pass decisions up and down the traditional business hierarchy. This briefing describes what it takes to become a real-time business—and illustrates the journey with a case study of United Airlines.

Real-Time Business Performance

In our research, top quartile real-time business companies performed significantly better than bottom-quartile real-time business companies, with 62 percent higher revenue growth and 97 percent higher profit margins. The top-quartile companies were superior at just about everything we measured. Compared to bottom-quartile real-time business companies, top-quartile real-time business companies were:

20 percent better at innovation, measured as percent of revenues from new products introduced in the last three years

22 percent better at operational efficiency

17 percent better at managing risk

Reducing the lag from sensing a threat or opportunity to acting on it and providing feedback allows companies to be more agile and to course-correct when needed. Trusting the same data across the company reduces the need to double-check it and helps improve operational efficiency and enable better risk management. Most importantly, both customers and employees are more likely to be satisfied when answers, actions, or both are immediate.

However, becoming a top-quartile real-time businesses requires significant changes for most companies. It means moving from relying on gut feel and experience to evidence-based decision-making, with high levels of trust in and empowerment of employees, along with increased automation and the use of AI.

Four Capabilities That Help Drive Real-Time Businesses

Excellence in four capabilities—real-time data for decision-making, integrated customer experience, business agility, and high-quality employee experience—distinguished the real-time businesses in our research from the rest. We will explore the four capabilities, and then describe how they were implemented at United Airlines.

Real-Time Data for Decision-Making

The foundation of a real-time business is having easy access to trusted real-time data for use as inputs to automated decision-making and in decision-making by employees and systems, tracking company performance on key metrics, and real-time governance and risk management.

The other three capabilities rely on access to real-time data for-decision making.

Integrated Customer Experience

A hallmark of a real-time business is integrated customer experience. A real-time business supports customers in navigating their journeys, identifying multiple products from different parts of the company that customers can easily acquire and combine to fulfill their needs. Self-service, which requires real-time data on both products and customers to deliver, is another hallmark of a real-time business.

Business Agility

A real-time business’s distinguishing attribute is the ability to sense a threat or opportunity, course correct, and change direction without getting multiple (sometimes redundant) approvals or undergoing a multiyear change management program. The real-time data enables employees to simplify, rationalize, and improve product offerings in the current business model with streamlined approvals for key decisions. The access to real-time data and dashboards enables employees to identify trends that could inspire a change in business models. The combination of real-time data and simplified governance empowers people at all levels of the company to identify opportunities and issues, then make and be accountable for decisions to address them.

High-Quality Employee Experience

Real-time businesses use real-time data to create a better employee experience and transform the jobs of the company’s people. Automating tasks allows people to spend far less time doing repetitive, often paper-intensive work and instead to focus on improving processes and innovating. Using real-time data in dashboards enables employees to better understand how the company is doing and how they contribute to the company’s performance.

Coordinated Development of the Capabilities

The change needed to operate in real time can feel daunting for many leadership teams. The good news is that it isn’t necessary to be brilliant at the outset at delivering fully real-time data for decision-making; instead, the company just needs enough real-time data and decisions to enable the other three capabilities to generate value daily. In time, the company will be able to increase all four of the capabilities in concert. Think of the real-time data and decisions as the rotor on a helicopter, providing the power to the three blades (integrated customer experience, employee experience, and business agility) to achieve lift. Just having enough real-time data focused in the areas of the three other capabilities will boost performance. As confidence grows, increasing real-time data and decisions will enable the blades to spin faster and achieve more performance lift.

Real-Time Business at United Airlines

In 2023, United Airlines, Inc. had over 100,000 employees and operated 938 aircraft, producing revenues of US$53.7 billion. United’s performance was strong, with one-year revenue growth of 19.5 percent, and a net margin of 6.3 percent (versus an industry average net margin of 4 percent). The company’s customer experience, based on a net promoter score of 50, was nearly double the industry average. United has made great progress in becoming a real-time business—with a United twist.

Real-Time Data for Decision Making

United has invested heavily in making trusted real-time data available to its people. United started by consolidating multiple data sources into one data hub, then served that data to customers and employees via digital channels. United uses this data to make better decisions about flight routes, diagnose reasons for delays, help passengers make their connections, suggest ways to use fuel more efficiently, and more.

For example, United created a tool called Connection Saver that monitors connections in real time. It calculates whether connecting passengers will make or miss their connections and identifies the solution that disrupts the least number of people. If holding a flight for five or ten minutes would help a good number of passengers get on board, the flight crew will wait.

Integrated Customer Experience

In 2022, United found that 85 percent of its customers used the company’s mobile app as part of their trip. With a design based on customer journey mapping, the United Airlines app gives customers real-time information about their trip and the power to take action. The highly rated app allows users to check in for a flight, track bags, rebook flights, and chat with an agent.

United is now moving from empowering to predicting. The company’s goal is to use the data not only in real time but also to anticipate what will be needed in the future and make an offer in advance of the need. For example, if United knows that your flight might be delayed, and observes that you take this flight regularly, the company can anticipate your need to rebook your flight and offer real-time booking changes in response to the delay.

Business Agility

To enable agility, United works hard to break its big programs into modules that can be pursued in short, defined efforts. For example, United has a large project underway to transform a critical legacy ticketing platform. Management has agreed to fund the whole program, but the implementation is being pursued in bite-sized pieces. Each module of work requires only a short conversation (less than an hour) to approve it; when the company is done managing one module, it moves to the next. Such structure has rendered building a big governance mechanism to allocate capital unnecessary. United designs work this way throughout the company with the goal that no one module of work for an approved project is big enough to require a separate governance bureaucracy that might slow progress.

High-Quality Employee Experience

Running an airline is a complex business involving real-time issues with variables such as weather, catering, and flight maintenance. United runs its operations in real time and has created a data environment that allows the company to make recommendations in real time. For example, if a storm is predicted for the Newark Airport area, United runs every flight permutation and adjusts plans to minimize the impact on passengers, crew, and aircraft. It used to be a slog to gather and analyze the data to make some kind of informed guess; now, models do it in real time. And flight attendants are provided with their own specialized app that lets them help customers in real time while en route, making the attendant’s job easier. United developed the flight attendant app because the company discovered, via data analysis, that responding to customer complaints in real time is more important to customers than providing greater compensation at a later stage.

United has made great progress in becoming a real-time business, but there is much more to do. For United, being a real-time business enables it to earn a customer’s trust by solving problems quickly, often via a device in the palm of their hand. United has invested heavily to ensure they have all customer and operations data available so all 100,000 employees can make the right decisions at the right time.

What It Takes to Succeed in Real-Time Business

How real time is your business? Many companies like United are already working to become real-time businesses. Imagine what your company would look like if the key decisions and operations were made in real time based on trusted data. The journey to become a real-time business starts with creating and consolidating enough trusted data to make key decisions, then empowering employees to empower customers, and finally predicting and satisfying customer and business needs in real time.

Speaker 1: 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.