$\diamond \diamond$ THE LOSANT GUIDE UNLOCKING THE VALUE







DATA IS THE NEW CURRENCY

Enterprise leadership teams are no longer questioning the value of data. This intangible asset is required for the creation of new products and critical to customer loyalty. Companies need data for refining even the most efficient processes-from manufacturing lines to smart offices- and today, it is factored in the very valuation of corporations. In fact, four of the five businesses in Financial Times' Global 500 list for top market capitalization in 2019 are businesses rooted in technology and data.

Here are two examples of companies already using IoT to capture data for new products and generating revenue.



AUTOMOTIVE

McKinsey predicted that there could be as much as \$750 billion of value in vehicle data by 2030. Data from cars using IoT can provide information for autonomous vehicles, insurance companies, future products, maintenance services, and more. Toyota, which is viewed as a leader in the automotive industry, has already invested \$1B in a data center to convert vehicle data into intelligence that will help them build in-car services, autonomousvehicle technology, and create partnerships for revenue-generation outside of the auto industry.





AGRICULTURE

Agriculture is one of the fastest-growing markets for IoT and projected to reach \$48.71 billion by 2025 according to Allied Research. John Deere leads in agriculture innovation and has outfitted many of its machines with connected sensors. Planters can measure the distance between seeds and pressure used when planted. Tractors are outfitted with modems to send data about the machine's engine and transmission to the cloud for condition-based maintenance. The company is also using GPS sensors in its plowing and sowing equipment to improve accuracy.





WHAT IS THE VALUE OF DATA?

If you are making the case for IoT inside your organization, you will likely field questions about the true value of a project. Leadership teams may want a guaranteed pathway to profit or at least ROI; operations teams want to know how much will be saved. Every stakeholder wants to be sure the investment doesn't outweigh the potential gains, which leads to the most critical question: how much is the data really worth?

Because there are so many ways to use data-to improve products, to introduce as-a-service models, to improve customer service, to refine operations- there is not one perfect answer to this question.

Your savings or revenue will depend on your selected opportunity. As you calculate the total cost of ownership (TCO) and ROI of IoT projects, you should consider the current cost of the specific process you are trying to improve, your IoT implementation costs, and the projected savings IoT will provide.







HOW DO I GET THERE?

The questions that exist today are not about whether data is valuable. Instead, the questions are about tapping into the value of data generated from connected devices, sensors, and the physical world as part of the Internet of Things.

Many organizations are starting conversations about the use of data for machine learning, predictive maintenance, and AI as part of a larger long-term data strategy. But, what is mentioned less often is the strong foundation of organized data required for these these technologies, collected using IoT.





The purpose of this guide is to provide introductory guidance for enterprises interested in unlocking the value of IoT data. This guide will explore opportunities for incorporating IoT into existing systems and share new methods to aid in the creation of revenue streams.

CUSTOM EXPERIENCES

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3RD PARTY DEVICE





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NOTIFICATIONS



BUY vs. **BUILD**

When it comes to implementing IoT, many enterprises explore the "buy vs. build" debate. Without careful analysis, it may seem that building in-house is more affordable, but according to the analysts at MachNation, using an IoT application enablement platform or (AEP) is 40 percent less expensive than building and maintaining an in-house solution. Some organizations may prefer an in-house development team to build and maintain a custom IoT platform without an external supplier for more control and customization, but there are a number of factors to consider:

ASSESSMENT OF IN-HOUSE IOT SKILLS

- Engineering
- Hardware
- Database management
- Software
- Web development
- Data analytics
- UX/UI design
- Security
- IP Networking
- Automation



A WIDE RANGE OF EXPERTS The construction of an IoT platform requires a team with expertise in a variety of software, hardware, infrastructure, and embedded systems skills. (See sidebar)



LONG-TERM MAINTENANCE An IoT platform will require updates in line with everchanging business needs.

PLATFORM FLEXIBILITY The architecture will likely need to be cloud-based, portable, and scalable to work for more than one solution.







"A quote from a customer was 'I want the diamonds, not the coal.' That is what Losant looks to deliver to our customers, the ability to find value in the data they collect."

PAT HUGHES STRATEGIC PARTNER MANAGER, LOSANT

THE DIFFICULTY WITH DATA

Challenges with data vary. Oftentimes, there is so much data, enterprise teams don't know which data to collect. Or, the alternative happens-an organization has been collecting data without a strategy and now has a bloated data lake. A few respondents from a study conducted by the Harvard Business Review about the challenges of prioritizing data in large enterprises cited technology hurdles as an obstacle, while many other respondents cited people and processes.

Combating the known challenges of implementing data into decision-making, new products, and daily processes requires a strategy. One suggestion provided by the same Harvard Business Review article was for enterprises to focus not on overall data-driven digital transformation, but rather to identify specific projects and business initiatives that move a company in the right direction. One way enterprise teams can validate the value of a new project is with a proof of concept. Enterprises can discover opportunities by narrowing in on one or a few processes and collecting information to understand where to find efficiencies.

How are you collecting information about your current processes? Without knowing the speed of a production line or the amount of water that flows through a pump on a site, or the way space is used in an office during the day, it will be difficult to improve. Visualizing data from your organization's critical processes with IoT can provide teams with an opportunity for savings and optimization before even getting to deep data insights.







UNCOVER EFFICIENCIES WITH DATA VISUALIZATION

Before enterprises used IoT, sensors, and the Cloud, collecting data from existing systems, environments and machines commonly required manual processes or legacy SQL databases. This process allowed only a few people with SQL knowledge to interact with the data once collected.

Today, IoT applications provide enterprises with the opportunity to collect data from varying building systems, sensors, or machines and share it via an application or interface. When data flows into an IoT platform, it becomes more shareable and accessible. Once data is accessible, processes can be monitored and this information can be used to gather insights or feed into other enterprise systems for additional value.

A good example of this can be found in manufacturing. Manufacturers can retrofit equipment connected to the internet or tap into existing controllers using edge computing and see real-time data on machines with an IoT platform. This first step allows a team and other departments to have access to production data, reject rates, equipment uptime (OEE), or other KPIs. Once a team can visualize data about processes with cloud-based technology, it can be monitored from anywhere.







MONITOR, REPORT, REACT

Many organizations are in pursuit of using data for machine learning or artificial intelligence programs. However, the act of using IoT to monitor equipment, assets or an environment opens up a great number of opportunities for enterprises. It is at this stage that an organization can begin to realize the value of seeing real-time data from IoT.

Monitoring real-time data allows an organization to react to conditions that can save on costs. For example, Clark Construction uses an IoT solution to remotely monitor water delivery and consumption to prevent water damage on its construction sites. By connecting sensors in water mains to an IoT platform, teams can be notified if water is flowing during off-hours and, in turn, causing damage to a construction site. The same IoT technology that enables monitoring also enables automated responses. Depending on the severity of the situation, a crew can be dispatched immediately or a technician can be alerted to immediately shut off the water main.

As illustrated, once data is collected, visualized, and monitored, anomalies and issues can be reported. This information can trigger automated notifications to staff if there is an outage. Using the strong foundation of IoT, historical data around specific events can be stored then analyzed and future processes can be optimized.





"Understand the business problem before you do anything with the data. If you're confident about what the data source is going to be and if you understand the scope of where the data is coming from, there's no reason not to start collecting."

CHARLIE KEY CO-FOUNDER / CEO, LOSANT

GETTING TO THE DATA

Defining a business problem, strategy, or goal will guide your project direction and partner decisions. The requirements for getting data from existing sources in your environment depends on your goal and your equipment. At a minimum, you will require a data source, such as devices or sensors, a connectivity partner, a systems integrator, and an IoT platform to help you build applications and get insights from your real-time or historical data.

Your working team must also consider how the data will be normalized for use before the project begins. This will help your team understand which critical partners to bring on board.

FOR EXAMPLE:

If your strategy is to *automate cold chain operations and collect data for process improvement*, connected sensors can gather data about assets then report it to your IoT platform. You will need to be able to connect your inventory management systems to your IoT platform and deliver updates and reports.

If your strategy is to offer compliance or maintenance monitoring services to your customers, you may need to use a platform that can read Modbus, OPC UA or Serial. You may also require gateways and edge computing to connect machine components. By providing access to machine condition data in real time, you can help your customers respond to compliance, OEE, or maintenance information and charge a subscription fee for those services.

If your strategy is to provide space utilization information for energy efficiency or productivity in your environment or through products made for your customers' *environments*, you will need to identify a variety of partners with motion detection hardware, smart lighting, and possibly beacons for reporting. You will also need to visualize and analyze data in an application or a user interface.



RECOMMENDED NEXT STEPS

- Evaluate the value of an IoT project with a proof of concept.
- Once the concept is proven, incorporate IoT components and use an IoT platform to visualize the data.
- Use the IoT data you've gathered to uncover efficiencies related to specific business initiatives.



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FROM RAW DATA TO ROI

There are a number of opportunities to monetize data through cost savings or revenue generation. Enterprises have already found success with the following industrial IoT and smart environment projects.





UNLOCKING THE VALUE OF IOT DATA





THE TEAM

IoT analysts and researchers agree, successful IoT implementations are not silo operations. They begin with collaboration between internal departments and external IoT experts who are willing to embrace the larger goals of an organization's digital business model.

Externally, hardware partners, IoT platform partners, and connectivity providers are needed to build an IoT solution. Inside of an organization, product managers, innovation leads, user experience professionals, engineers, and developers have all been known to lead or be a part of IoT implementation teams. Additionally, there may be a number of people in your organization from unlikely sources with information to support an effective IoT solution.

HERE ARE A FEW SOURCES OF INFORMATION YOU MAY NOT HAVE ALREADY CONSIDERED:



Customer service representatives who communicate with customers daily.



 HVAC technicians who know which machine components should be monitored.



Field technicians responsible for diagnosing problems in a range of equipment models.



to stop.

LOSANT ()) guides

Controls engineers who keep the line up and running and know what causes it



Security guards who are aware of the gaps in coverage.

RECOMMENDED NEXT STEPS

- Identify one or a few processes your team can improve with an IoT solution.
- Differentiate new IoT projects from mounds of data collected for other purposes.
- Consult with your internal team and gather external IoT experts.





OPPORTUNITIES FOR IOT DATA

We covered the process three companies used to bring data-backed solutions to market in our Losant Guide: Business Innovation and Expansion with Industrial IoT. This guide gives tips on how to identify opportunities, select IoT hardware and connectivity partners, and bring connected solutions to market.

Here are some ways to identify opportunities for revenue-generating or costsaving data solutions in your environment.



MAKE EXISTING PRODUCTS OR **PROCESSES BETTER**

One example is enabling employees or guests to use real-time data to find open desks or conference rooms in a smart environment. This information can save time and increase productivity for your team.



INCORPORATE CUSTOMER FEEDBACK PAIN POINTS, OR PLANS FOR INNOVATION

Do you have customers in an industry that requires compliance reporting? Instead of using manual processes to check food and drug safety, for example, it can be reported via email or text. Offering a subscription to this information is an additional revenue stream opportunity.







INTRODUCE THE ABILITY FOR CUSTOMERS TO USE YOUR MACHINE-AS-A-SERVICE IN PLACE OF OWNERSHIP

Access a new market of business owners who would be better served by a subscription to access to your product in place of ownership. In place of onetime sales, some OEMs are charging customers based on machine use and service. See Kaeser Kompressoren's model for air-as-a-service.



MONITOR MACHINE CONDITIONS TO PROVIDE MAINTENANCE SERVICES

Preventative maintenance costs a company downtime and may oftentimes be unnecessary. Creating a conditionbased maintenance model based on realtime data could create a streamlined maintenance department for your organization, save your customer costs, and extend the life of equipment.





GETTING STARTED



- ⊘ Built-in dashboard reporting
- Workflow or rules engine \bigcirc
- Automation capabilities \bigtriangledown
- *⊘* Batch processing
- Application enablement



- Your team can begin unlocking the value of data by following these steps:

 - Integrate IoT to collect data related to the business objective.
 - Visualize and analyze your IoT data to learn where processes
- This process is much easier with an IoT platform. As you evaluate IoT platforms, be sure to find a partner that can meet the short-term and long-term goals for your project. We recommend selecting an IoT platform with the following features:





WHAT IS LOSANT?

Losant is an easy-to-use and powerful enterprise IoT platform designed to help teams quickly and securely build complex real-time connected solutions. Losant uses open communication standards to provide connectivity from one to millions of devices and provides data collection, aggregation, and visualization features to empower enterprise teams with new data insights. Edge features are integrated directly into the Losant IoT platform for seamless integration of connected and non-connected devices. Start independently or work with Losant's experienced solutions engineers.



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