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Why Most IIoT Implementations Fail

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The IoT Revolution is picking up speed and as it does, it is changing the manufacturing world forever.

The Industrial Internet of Things (IIoT) brings together machines, advanced analytics, and people. It's the network connected assets and devices by communications technologies that results in systems that can monitor, collect, exchange, analyze, and deliver valuable new insights like never before. These insights can then help drive smarter, faster business decisions for manufacturers.

THE WAY FORWARD

Despite the undeniable impact IIoT is having on the manufacturing sector, how serious are manufacturers about moving forward with IIoT implementations and what do their IIoT roadmaps look like?

Look no further than the findings from Accenture's latest IIoT trend study (Digital Industrial Transformation with the Internet of Things, 2017):

72% of the companies will increase their IoT spending in the next three years. A solid amount of companies plan to keep this increase between 10% and 30%, while some of them are willing to raise spending by more than 30%.

60% of the companies are already involved in IoT initiatives. More than half of these, however, are still in the early stages of deployment and have some ongoing IoT projects.

Cost reduction is seen as the biggest driver of moving IoT initiatives forward for 69% of the companies. However, the fact that product improvement and development of new business models took second place on the list of drivers shows how IoT investment can be channeled towards driving top line growth rather than just reducing costs.

Investment decisions for IoT solutions are mostly made within IT departments but line of business executives also have considerable influence. This, however, largely depends on the country in question and the scale of the projects under consideration. Data security and privacy concerns top the list of challenges that are slowing down IoT adoption for 70% of the companies. Apart from fears of cyber attacks, there are also mounting regulatory burdens, especially ahead of the General Data Protection Regulation (GDPR).

Companies cannot bear the fruit of the IoT on their own, and will require assistance along the way. More than 50% of them are strongly involved with IT services companies and consulting firms, which is reasonable bearing in mind that successful IoT requires significant expertise both from a solution delivery and business advice perspective.

Of the many manufacturers in pursuit of digitization, a large number are unlikely to succeed.

According to a 2017 Cisco study, 74% of companies that begin an IoT initiative fail. More often than not, projects go over budget, deployment times run long, interoperability issues occur across legacy platforms or planning and resources aren't allocated appropriately, leading to their cancellation. This failure rate has lead to a greater hesitation for manufacturers to embark on their digital transformation journeys.

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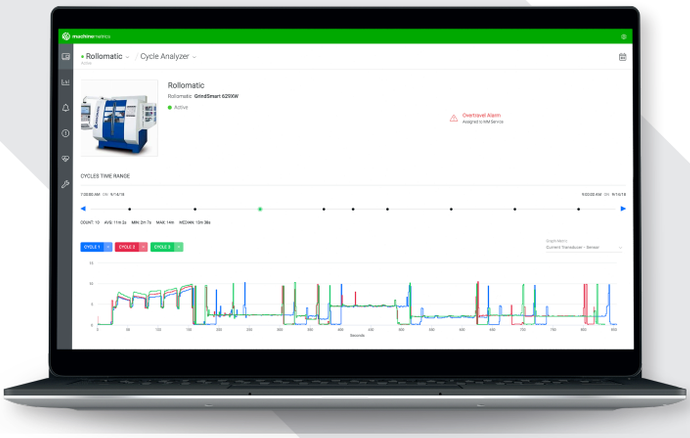
Here are some of the top reasons we've found for these implementations to stall out before they get off the ground:



NO CLEAR PURPOSE

Business should drive the technology, and not the other way around, but oftentimes transformation projects are driven by shiny new technology instead of business goals. In many of these cases, POC's are started with the goal of implementing technology for the sake of technology instead of with clear cut outcomes in mind. Objectives are rarely aligned and the details are often washed over. Thus, when things move into high gear, this lack of information leads to an inability to measure the success of the project relative to expectations.

NO PLAN TO SCALE

Many companies begin an implementation without an expansion plan. While it is essential to prove out a concept before going all-in, it's equally important to think through what the next steps of roll-out roadmap are going to be. What if this is successful? Where would we expand this technology to next? Oftentimes, pilots are kicked off without the knowledge of other facilities, locations, and departments. Without a roadmap and/or communication of the POC's purpose, even the most successful implementations can end up in a state of pilot purgatory.

NO INTERNAL LEADERSHIP OR EXPERTISE

Having the right pieces in place is essential for a successful IIoT implementation, and that talent is often hard to find as the technology is still relatively new and constantly evolving. Without the right people leading the charge, there's an inability to overcome certain internal issues that can undermine the success of the POC. For example, without the support of an internal IT department, the blame for network connectivity issues may fall on the shoulders of the IoT technology provider and not a lack of internal IT capabilities.

NO INTERNAL ALIGNMENT

IoT projects have several interdependent components, such as hardware, device software, protocol stack implementation, gateway systems, backend systems, end user application, analytics, etc. Several independent teams are working on these components, which have very high interdependency on each other. They should constantly work in perfect collaboration with each other, having concise and precise communication on a regular basis. Invariably, it happens that team collaboration doesn't work perfectly, leading to undesired situations.

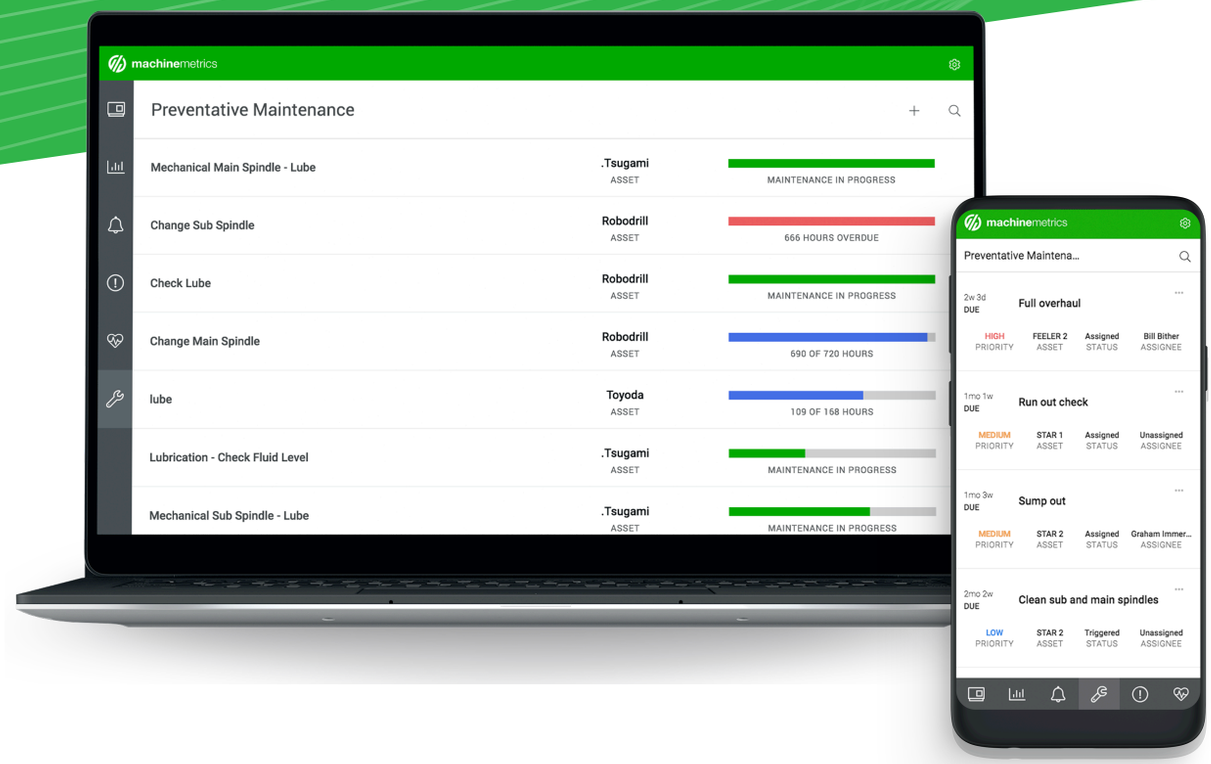
NO MANAGEMENT COMMITMENT

Any new change is expected to create rough weather. Change is supposed to face internal and external resistance, and sometimes a lot of criticism. In such situation, it is important that all important stakeholders are rightly onboard and provide their complete support. Crucial support and backing of senior management is key to the success of such initiatives in hard times. Patience is the key and the outcome will follow. If there are frequent changes in the management priorities, it is bound to lead to failure.

Building a Successful Roadmap to IIoT Implementation

Having the right pieces in place, setting reasonable expectations, and a dedication to project initiatives may be the best approach in the end.

Planning a Digital Transformation



We often talk to companies who have predictive and preventative aspirations but who still don't have machines networked, the necessary IT infrastructure to capture and aggregate machine data, or the internal organizational resources required to decipher the data and implement continuous process changes.

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Thus, like any good action plan, it's all about the preparation. Here are a few areas of focus for any company to consider when readying themselves for digital transformation.

ORGANIZATION

To understand what you are solving for, it's essential firstly to be aware of what the problems are, and then to become capable of not just solving those problems but to ready ourselves for the greater problems in the journey ahead. Transformation requires buy-in at all levels, from the front office and on the shop floor, but it also requires internal leadership. It's critical for manufacturers to recognize the important role organizational attributes play in long-term project success and begin discussions about how the odds of project success can be increased by evaluating organizational gaps. Ask yourself: Where do we stand now? Does your team have the right people in place to implement new technology? Are there project leaders capable of owning this project?

COMMUNICATION

The information we need is available, but the hard part is actually applying it. Avoiding an "us vs. them" mentality is critical in this transition stage. It is vital to build trust between everyone involved in the manufacturing process so problems can be quickly identified, and new solutions can be effectively implemented as a team. Don't let a lack of communication stand in the way of change. Ask yourself: Does your team have an environment capable of communication and applying process changes not just from the top down but from the bottom up?

WASTE REDUCTION

Before you embark on our digital transformation journey, it's important to get as lean as possible with your current capabilities. The goal of lean manufacturing is continuous improvement of production processes, while eliminating waste and cutting costs. However, setting the stage for a lean process is just the first step; implementing a system that allows you to maximize your manufacturing productivity results will take your lean model to the next level. Ask yourself: Are we lean? Do we know what our top areas of waste are? Have we embraced lean manufacturing principles?

TOOLS

Digital manufacturing will transform every link in the manufacturing value chain, from research and development, supply chain, and factory operations to marketing, sales, and service. Having tools to measure your efforts, for designers, managers, workers, consumers, and physical industrial assets will unlock enormous value and change the manufacturing landscape forever. What tools are in your toolbox right now? What tools do we need to measure our success? What tools do we need to upgrade?

DIGITAL CONNECTIVITY

In 2018, the cloud can be your best friend, and with security being better than most on-site solutions systems, the benefits are . Increasingly more companies are developing or moving their workloads to the cloud by the day, aiming to migrate everything onto the cloud over the next few years. This digitization of data will enable you to deliver competitive advantages in an ever-competitive landscape. Networking your machines and ensuring that all production data can be captured is one of the most essential capabilities for real-time analytics. Ask yourself: Are you ready to digitize our assets? Do you have the technical assets in place to capture and store the data?

Starting Your Journey

Finally, once you've readied your company to start your journey, it's essential to avoid the many pitfalls made by previous teams who were unable to move their IIoT implementations past POC. According to Cisco's Scot Wlodarczak in his article entitled "Don't Let Your Industrial Internet of Things Project Fail", here are a few tips to optimize your chances of success:

1 START SMALL
If you focus on your entire plant, you will make success much less likely. Try starting with a smaller project in a key focus area.

2 DEFINE SUCCESS
Determine what you are trying to achieve, then measure it before and after any IoT project.

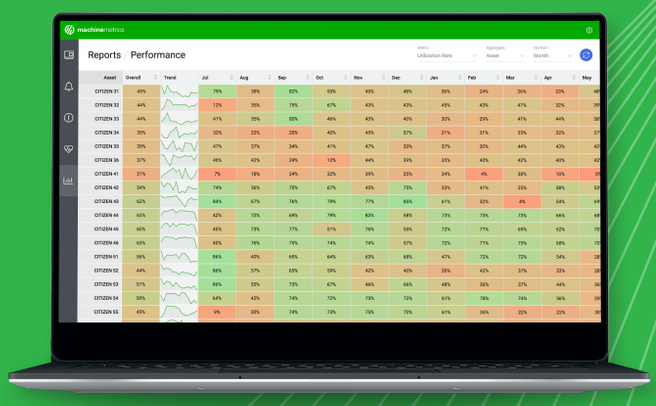
3 GAIN INTERNAL COMPANY IT AND OPERATIONS ALIGNMENT
The days when operations can implement network-related projects without IT are gone, or at least close to extinction. Success is much more likely achieved by working closely together.

4 UNDERSTAND AND ADDRESS SECURITY RISKS
Connecting to data from the factory to the enterprise, or opening up remote access all the way down to the plant floor, can potentially open up security risks. Carefully evaluate the potential risks and impact of those risks, then focus on the most serious.

5 FREE UP DATA FROM DISPARATE NETWORKS
Make sure you fully understand the different networks in use all the way down to the data you want to capture for analysis.

6 AVOID DATA OVERLOAD
Keep your data set manageable and use basic statistical analysis to look for outlier data.

7 CULTIVATE A TECHNOLOGY-FOCUSED CULTURE AND IOT EXPERTISE
You need new technology to achieve the promise of many IoT benefits, and you need the expertise of people, vendors, and partners to get there. (Scot Wlodarczak, Cisco)



Remember, digital transformation doesn't happen overnight, it's a journey.

Getting from today's practices to tomorrow's cannot be done in one giant leap; it is an evolutionary process. Readying your team's capabilities and learning from the mistakes of others will best prepare your team for a successful implementation.

Still hesitant? Don't worry. Most companies don't take this journey alone, and will partner with those that have the expertise to help them along the way.

MachineMetrics was designed to help companies overcome the challenges along the digital transformation journey and to advance forward from reactivity, to proactivity, and to predictivity. We've simplified IoT for the shop floor and are empowering manufacturers to develop their roadmap toward manufacturing excellence with the easiest to use and simplest to integrate software on the market.

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COMPANY DESCRIPTION

MachineMetrics is an award-winning predictive analytics platform for discrete manufacturers. Our Industry 4.0-ready solutions work out-of-the-box to increase productivity through edge connectivity, real-time visibility, deep manufacturing analytics and AI driven predictive notifications. We've simplified Industrial IoT to digitize your factory and enable your team to drive decisions with machine data.

AWARD WINNING

- Smart Manufacturing Solution of the Year 2018

IMPRESSIVE PARTNERS

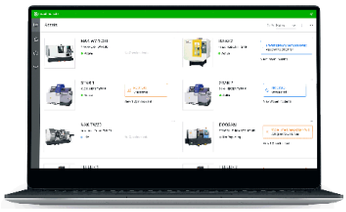
- SECO Tools
- CAT
- Gardner Denver
- Tsugami
- Snap-On
- Autodesk

Our IIoT platform currently features three out-of-the-box solutions:

MachineMetrics Production

FOR PRODUCTION MANAGERS AND EXECUTIVES

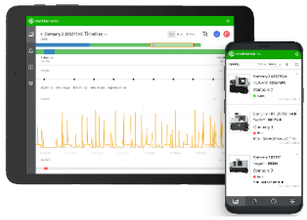
- Track OEE and manufacturing efficiency
- Identify production bottlenecks
- Take action with real-time notifications
- Measure process improvements
- Enhance shop floor communication



MachineMetrics Health

FOR MAINTENANCE MANAGERS AND PROCESS ENGINEERS

- Manage your machine assets and view real-time equipment status and conditions
- Diagnose problems with deep alarm analytics and AI-driven predictive notifications
- Manage preventative maintenance tasks based on usage or machine conditions
- Track utilization of equipment over time to understand current and potential capacity
- Predict equipment failures and prescribe solutions to prevent costly downtimes



MachineMetrics Service

FOR MACHINE BUILDERS AND EQUIPMENT DISTRIBUTORS

- Allows remote monitoring and improved service for all your machines in the field
- Enables your service team to diagnose and resolve equipment problems in real time
- Track utilization of equipment over time to understand current and potential capacity
- Work with customers to predict equipment failures and prescribe solutions before they occur
- No need to install on customer's internal IT infrastructure with included cellular support

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MARKETING MATERIALS

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MachineMetrics Health

MachineMetrics Service

CASE STUDIES

Carolina Precision Manufacturing
SWISS CNC

Fastenal
PRECISION METALWORKING

Carlson Products
METAL STAMPING AND FABRICATION

EBOOKS

Digital Transformation

The Cloud Advantage

Why most IIoT implementations Fail

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