Contoso Energy Scenario (Business
Case)

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Overview

The following content provides an introduction to *Contoso Energy* and describes
some of the business goals the company hopes to achieve by embracing Digital
Transformation. It is presented in a format similar to that often used by
companies for both internal cross-team/department education as well as
introductory content used when briefing potential implementation partners.

Contoso Energy - Why Digital Transformation?

Executive Summary

Contoso Energy is observing how IT (Information Technology) and OT
(Operational Technology) domains are converging, as traditional walls are being
removed, enabling end-to-end business processes across engineering,
manufacturing, logistics, marketing, sales, and service.

Contoso Energy is a renewable energy company in the wind power space that
also wants to become the dominant software company in the smart energy
industry. This will be achieved by delivering connected experience to its
customers, optimize its operations by increasing information flow across entire
business operations and transform products by gathering information on use of
existing products to improve them and create new products.

Business Drivers

IoT, machine learning, artificial intelligence, smart robots, and mixed reality are driving the creation of systems of intelligence. These are the new digital feedback loops that will completely change how manufacturing is done and how enterprises make decisions, innovate, compete, engage customers, and run their businesses. Technology is inside all things. Connectivity has become pervasive. Data volumes continue to rise exponentially. Yet, with virtually unlimited compute power and incredibly rich data platforms, we are now able to gain unprecedented insights related to all aspects of our businesses.

Digital transformation is happening at Contoso Energy due to:

- The need to increase profitability and productivity
- Realizing that differentiation through mechanical engineering is not enough
- Stay ahead of market changing trends

Business Benefits

By embracing this digital transformation, Contoso Energy expects to see the following business benefits:

- Increased market share
- Improved Turbine Productivity
- Reduction in operating costs

Focus Area for Stakeholders

Contoso Energy has identified a number of Stakeholders who are leaders in implementing digital transformation. These Stakeholders have the following key focus areas:

- Improve Wind Turbine uptime by analyzing historical data for failure trends
- Understand how site weather, topology and turbine placement effects efficiency
- Improve operational monitoring of turbines to better react to critical occurrences
- Increased sales and profitability

Reasons for Embracing Digital Transformation

Digital transformation holds the potential to transform every operation. Process transformation means converting traditional processes to more efficient digital systems that can increase efficiency dramatically, improving all aspects of the operations. Product and service transformation means creating new value-add services that can both improve the environment and the customer experience while opening new revenue streams. Before embarking on a digital transformation journey, it's critical to understand your objectives, adopt a holistic yet realistic approach, and partner with the right advisor who can support you on both the technology and strategy aspects of your initiative.

Digital transformation is about applying technologies to radically change traditional processes, products and services into data-driven, highly connected solutions that can be monetized through extreme efficiency gains and entirely new business models. With a digital-first approach, firms are accelerating time to market, providing new customer value through digital experiences, managing complex global value chains and innovating to dramatically improve the customer experience and create new revenue opportunity.

As power companies become more agile at managing production and supply better, there will be improvements in both distribution and management, and of course end user consumption as a result. The ability to develop plans based on real time data analytics will be revolutionary.

Power companies will be able to explore new opportunities that could improve efficiencies further, using data analytics to model new tactics and solutions. Distributed generation for example, where companies can shift power production closer to the point of consumption through solar tiles or wind farms, all becomes possible because the technology is now intelligent enough to plan, service and manage even the remotest of assets.

There are two types of digital transformation:

- Process transformation: digitizing existing processes and procedures to improve efficiency and operations.

- Product and service transformation: developing new digital services and experiences for customers that improve satisfaction and loyalty and that create new sources of revenue.

Digital Transformation - 7 Steps to Success

1. **Leadership**

   Technology is a means, not an end, for transformation. It's about leaders, leadership, and people. Leaders will need to develop their own vision, communicate it starting from their change agents internally and embark on the journey. One important thing to realize here is that there is not only one way to go about digital transformation. It is more about identifying the right use cases that will make the most impact on things like customers or the bottom-line.

2. **Drive culture change through effective change management**

   As Industry 4.0 suggests, what is going on in the industry today is nothing short of a revolution. A revolution that requires a culture change across the organization. Organizations need to communicate what the new value proposition is, and how all of these factors will affect how employees are expected to perform.

3. **Connect Your Customer, Assets, Products and People**

   Organizations need to understand that, unlike in the past, the product they are delivering to customers is now going to be connected 24x7 to their enterprise. This will enable them to know what is going on with that product in terms of what features are being used, how the product is performing, and much more. In addition, organizations can connect to their customers and their customers' environments 24x7, not limited to the customer systems themselves, but also by way of IoT. Add to that, connections to all the assets in the manufacturing environment, from the supply chain to the field, as well as employees themselves. There are connections to all these things, all at the same time. This means there is a ton more data to collect, understand, reason over, and get insights from. Therein will lie mind-blowing insights, facts, and clues that, for an organization, might not have been available before. This is the new gold mine. Those new insights will inform an organization's next steps and how to take those to action. Also, at that point, organizations will want to do more of the same, in terms of having more data, more analytics, and more learnings to take more actions. That is how the digital journey will typically start.

4. **Adopt a Data culture**

   Connecting all the above—including products, customers, assets and people— will generate tremendous amounts of data. It is very important in the digital

world not only to be data driven, but that organizations understand what is in their data. And, it's not just about that data alone; organizations must understand what third-party data and what other data sources are impacting what they do.

5. **Experiment and fail fast**

Digital era is all about experimenting in monthly, if not weekly, cycles. It is a "fail fast" or "learn fast" era now. Businesses need to find the use case, get the data, understand what is in that data, get the insights and intelligence, learn from it, and act. If it fails, go on to the next cycle and the next use case. If it works, understand how to expand or repeat it. It is those experimental, short cycles of transformation that are key in the digital era because things are happening very fast. It is all about either disrupting or adopting early, and not being left behind. No enterprise or industry is exempt from this.

6. **Think Ecosystem**

No longer can organizations go it alone as an enterprise. Need to re-think their partners, eco-system(s), and supply-chain. It is no longer about one-off relationships. It is about remaking industries, creating new eco-systems, markets, and market-places. Businesses must think holistically. They must think ecosystem. They must think end-to-end supply chain. Then, disrupt or optimize to that level.

7. **Competitive Threat**

In this new era, organizations know they will be disrupted if they don't change and operate differently, but, they don't always necessarily know where the threat will come from. It could come directly from within the industry, or adjacent industries due to the convergence that is happening across the marketplace. Or, the threat could even come from a new up-and-coming company.

Gaining Efficiency through Process Transformation

Process transformation is critical for companies with legacy paper-based systems or digital systems. Without a modern digital information backbone, there are inevitably inefficiencies, such as manual processes, siloed data, and duplicative efforts. This results in limited access to information for employees, hindering

their productivity. Entrenched practices and procedures may also be sources of inefficiency, necessitating retraining. Take a look at the following examples for context:

- **PPL Electric** reports that in less than a year after PPL Electric Utilities completed its smart grid pilot project, customers in Dauphin and Cumberland counties are already experiencing a 38 percent improvement in service reliability, meaning fewer power interruptions and shorter outage duration. <u>PPL Electric Utilities' Smart Grid Improving Reliability in Harrisburg Area</u>

- **Okalahoma Gas & Electric Company** initiated an activity aimed at reducing peak loads, overall electricity use, and operations and maintenance costs. Distribution system upgrades were expected to increase operational efficiency, reduce line losses, lower operational costs, and improve service reliability for customers. The outcome of the initiative resulted in an average saving of $200 for customers, reduced load by 70MW and reduced meter reading costs by ~ $9 Million a year. <u>Positive Energy® Smart Grid Integration Program</u>

Creating new Opportunities with Product and Service Transformation

Product and service transformation is about using digital technologies to deliver innovative services and experiences, which translate into new revenue potential. This often involves the computerization of entire product platforms and the monetization of data-driven services.

Adding digital components to products not only makes it possible to update them over time – it also enables new service delivery and improves the customer experience. For example:

- A smart heating furnace automatically identifies when it needs service and proactively prompts its owner to schedule a service date and time.

- A smart refrigerator can identify when a household needs more milk, or something is about to expire, and sends a text message alert – or automatically re-orders it.

- A smart power generator set can examine historical data to know when demand will be lower and reduce its fuel consumption automatically. The smart power generation solution can also offer other advice aimed at reducing costs, emissions and maintenance needs.

Rolls Royce has adopted improved digital systems that allow engineers to not only schedule engine downtime but predict the specific repair actions that need to be taken and the parts they need. If an engine needs a new fuel pump

urgently, for instance, that information is instantly available to maintenance crews, who can have the exact parts ready to go before the equipment fails. With hundreds of lives potentially on the line in the event of a catastrophic equipment failure, the benefits of having this information are huge. Airlines using Rolls Royce engines can be confident their engines are constantly being monitored for problems before they occur. For Rolls Royce, this not only builds customer confidence and loyalty but is also a high-margin business.

Summary

In this document, Contoso Energy has outlined the reasoning for embracing Digital Transformation as an approach to take the company forward. As well as outlining the business drivers and objectives, the document has also placed them in the context of 3rd party organizations and the successes they have achieved when adopting a similar approach.

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