ptc®

DIGITAL TRANSFORMS PHYSICAL

THE POWER OF ASSET DATA

HOW ASSET DATA DRIVES RESULTS FOR THE ENTIRE BUSINESS

Digital transformations have been a central focus for organizations over the previous decade, and this focus accelerated during the COVID-19 pandemic.

However, multiple research sources (Harvard Business Review, McKinsey, and Boston Consulting Group) indicate that less than a third of digital transformations have succeeded and reached their goals. Based on estimates, of the $1.3 trillion spent on DT/DX in 2018, nearly $900b went to waste.

There are many reasons for failed transformations and a lack of the sustained results that CEOs, Chief Digital Officers (CDOs), or CIOs are looking for. The crux of the matter is that while these digital initiatives have enterprise-wide goals, they only focus on or are adopted by a handful of business silos. Without wide-scale adoption and acceptance of these initiatives, the benefits tend to be untested, unimpressive, and unsustainable. More so, these initiatives often create a great amount of frustration given the amount of change required by front-line employees to adapt to a new way of doing things.

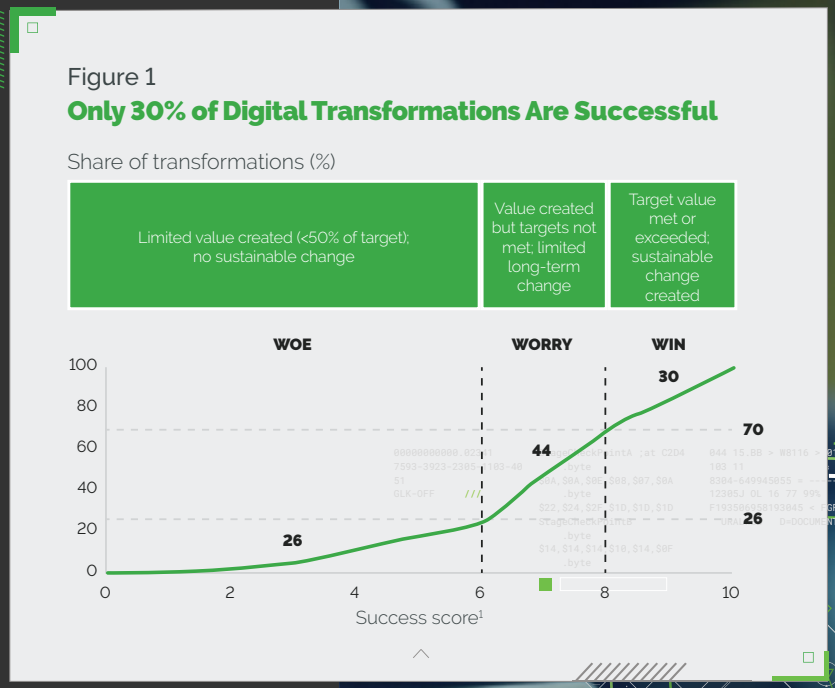
When analyzing successful transformations, it is evident that data is the central thread that brings organizations together and drives them forward.

But large volumes of data, without context for those who wield it, can be debilitating. This is where asset data comes in. It can serve as the unifying data thread that brings together disparate digital initiatives. It not only provides a purpose to digital technology but also creates a framework around which advanced technology movements such as artificial intelligence (AI) and Blockchain can be applied to deliver value.

Organizations can obtain great value from increasing the availability of asset data across the organization to critical stakeholders. Field Service News (FSN) recently surveyed over 230 service leaders to uncover how organizations are collecting and sharing asset data. As seen in Figure 2, FSN found that those who were sharing asset data saw higher performance levels when it came to key business metrics such as revenue growth, margin attainment, and customer satisfaction.

Figure 1

Only 30% of Digital Transformations Are Successful



Source: BCG analysis
Note: Based on 895 transformations.

[1]The success score is calculated on the basis of the percentage of predetermined targets met and value created, the percentage of targets met and value created on time, the success relative to other transformations, and the success relative to management's aspirations for sustainable change.

Yet progress continues to be slow. Nearly 60% of respondents indicated they are not yet using asset data effectively within the silo of their field service business.

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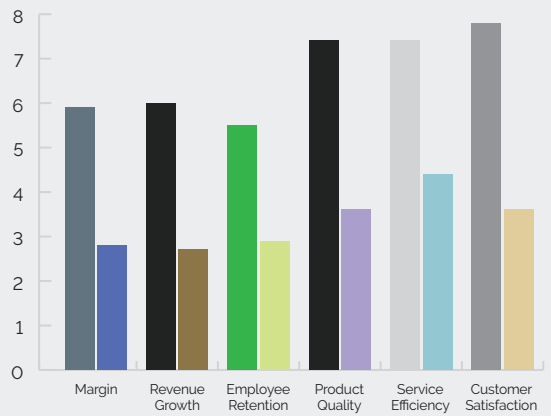
And if asset data does make it outside the walls of the service organization, it is used only selectively by other stakeholders in sales, marketing, customer success, and product design. Perhaps even more alarming is the fact that organizations aren't making their lives any easier when it comes to capturing data on the next generation of their assets. Six out of 10 respond that their next phase of assets will not be IoT-enabled, thereby making the accurate and timely collection of data an arduous process.

Where this all comes together is in the evolution to new outcome-based or as-a-service engagement models. FSN's research indicates that more than 50% of organizations are incorporating outcome-based services or as-a-service offerings in their portfolio. For these models to be truly effective, they must be based on a foundation of rich asset data that is made available across the organization. And this is further confirmed by the FSN research—organizations with servitized models in place were much more likely to have IoT-enabled assets and to share this rich asset data across their organizations. To remain competitive in the outcome-focused future, organizations will have to focus their digital ambitions on ensuring the effective capture, analysis, and sharing of asset data. This is the promise of digital transformation.

Figure 2

Comparison of performance (self-reported) between companies who share asset data across the business vs. those that do not.



	Shared asset data	No shared asset data
Margin	5.9	2.8
Revenue Growth	6	2.7
Employee Retention	5.5	2.9
Product Quality	7.4	3.6
Service Efficiency	7.4	4.4
Customer Satisfaction	7.8	3.6

Source: Benchmarking Report: The Impact of Asset Data Beyond the Silo of Field Service, Field Service News, 2022

Note: Based on responses from 230 service leaders.

FSN's research indicates that more than 50% of organizations are incorporating outcome-based services or as-a-service offerings in their portfolio.

CHAPTER 1

Understanding Asset Data & Asset Centricity

Before highlighting why asset data is essential to stakeholders across the organization, it is important to discuss what we mean by asset data and why it is the cornerstone of our definition of asset centricity.

The common understanding of asset data is often limited to asset health and performance. How is the asset doing with regards to key criteria like temperature and vibrations, and how are its components (electrical, mechanical, and digital) performing? These are part of the overall asset data equation. As per FSN's research, 48% of organizations already share this kind of performance data across their organizations. But there are other components of asset data that are equally critical for decision-making.

These include:

Age/timeline data – What is the age of the asset, and what were the critical dates in this asset's life?

Location data – Where is the asset located, and what else might be at that location? Does this location have specific coverage requirements?

Entitlement data and Contract Coverage – Is the asset currently covered by a contract, and what are the entitlements or commitments promised under this contract?

Financial data – How is the asset performing from a cost and revenue point-of-view? Is it profitable to continue to support the asset?

Output/quality data – Is the asset delivering the level of output that it was designed to?

Parts and component data – What are the individual parts and components present in the asset? What firmware and other software might be running on this asset?

Service history – What repair and maintenance work has been done on the asset?

These layers of asset intelligence are what power asset centricity, a model in which assets and asset data form the center of an organization's activities. We believe asset centricity is foundational to digital success. With an asset centric approach, organizations can unlock new business models and revenue streams and deliver enhanced customer experiences across the asset lifecycle.

As seen in Figure 3 on the following page, there are various forms of data that are shared across the organization, the most common of which is service data. This makes sense as knowledge of service history can help those in sales or account management reach out to customers proactively for new service or replacement options. Service data can also be analyzed by those in product design to uncover areas of focus when it comes to upgrade or redesign cycles.

Data sharing outside of service data becomes a little more sporadic, particularly when it comes to parts data or entitlement data. While their importance is perhaps most felt within the bounds of the service organization, there are other stakeholders who would benefit tremendously from more accurate parts usage or contract coverage information.

For instance, the supply chain organization would be very interested in getting better visibility into the installed base and forecasted parts needs to better manage inventory levels. They would also be interested in knowing if the assets could be supported by refurbished parts vs. newly procured parts, thereby impacting their purchasing and stocking decisions. Commercial groups might also be interested in entitlement data to understand which customers already have a contract and which customers might be candidates for contract coverage but are not currently covered. This could have a significant impact on the revenue fortunes of the organization.

In addition to the types of asset intelligence highlighted above, there are two more elements of asset data that are critical to understand:

1. The Stage of the Asset Lifecycle

Various attributes discussed above are impacted by the stage of lifecycle that the asset is in. This is critical to decision-making as performance baselines might change with asset aging, as might service needs and requirements.

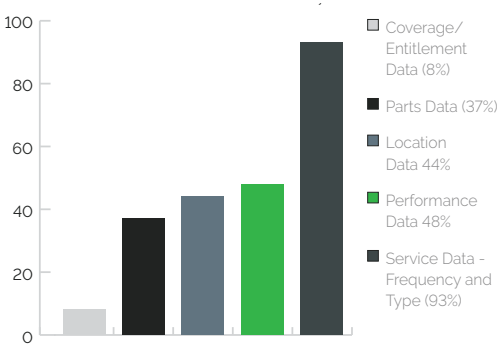
Contract coverage and profitability should be weighed differently for an aging asset as opposed to one that is newly installed.

2. The Customer Context

How a customer uses an asset is also vital to decision-making around that asset. A customer with a higher utilization rate might need a greater instance of preventive maintenance events or a higher inventory of critical parts. Their contracts might have stricter entitlements. It's also important to understand which features of an asset are being utilized and adopted by the customer in their pursuit of outcomes. If customers favor certain features, then those might need to be prioritized in the next product development cycle. On the other end, if certain key features aren't utilized, then there might be a gap when it comes to customer training or customer success, creating an opportunity for organizations to bring in additional services.

Figure 3

Responses to the question "which of the following sets of data are shared with other business units with your organization: (tick all that are relevant)"



Source: Benchmarking Report: The Impact of Asset Data Beyond the Silo of Field Service, Field Service News, 2022

Note: Based on responses from 230 service leaders.

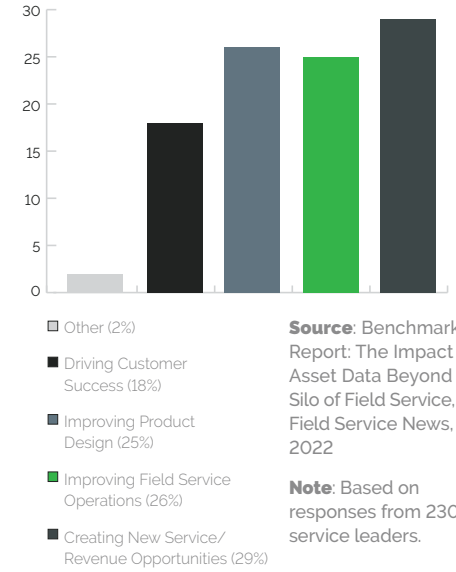
CHAPTER 2

MAKING ASSET DATA WORK

There are two ways to measure the quality of asset data. The first is by its accuracy and how it truly reflects the asset truth of all the factors discussed in the previous chapter. The second is around the actions that are driven by this data across a broad range of stakeholders across the organization.

Figure 4

Responses to the question: "How does your organization primarily see the information you receive from assets?"



Source: Benchmarking Report: The Impact of Asset Data Beyond the Silo of Field Service, Field Service News, 2022

Note: Based on responses from 230 service leaders.

As seen in Figure 4 above, there is a generous appetite from non-service stakeholders to collaborate with their service colleagues. Asset data can serve as the common language to support this collaboration and push enterprise-wide initiatives forward.

In our opinion, there are three overarching categories of stakeholders that can benefit from asset data.

Operational Stakeholders – These are typically people who are trying to 'do' something with the asset. They need data to guide their actions. These could be people in a contact center looking to understand a customer's inquiry or those in the field or the depot trying to complete a work order. For these individuals, asset data is required to provide context to ensure that their work is done efficiently and effectively. Not all these people reside in the service organization.

Supply chain teams looking to forecast inventory needs based on service data can also benefit from rich asset data, as can those running campaigns to ensure compliance. In certain instances, these stakeholders might also exist outside the realm of the manufacturing or primary servicing organization in the form of network partners and service providers.

Commercial Stakeholders – These are individuals that are trying to monetize the asset or the customer's relationship with the asset. Sales is the primary stakeholder here as sales personnel are trying to ensure the greatest revenue impact over the course of the asset. In more mature organizations, sales is typically broken into equipment and service sales. In this model, the initial equipment is sold by one salesperson and the additional service contracts, aftermarket parts, consumables, and other services are sold by a service person. In some organizations, a field technician may also take on sales responsibilities, but this varies significantly from organization to

organization. In organizations where assets aren't sold to customers, but are either leased, rented, or extended to customers, the person with sales responsibility might sit in a rental department. All these sales-minded individuals can greatly benefit from asset data to ensure that customers are made aware of the entire portfolio of products and services to support their outcomes.

To augment the reach of sales, marketing departments can also rely on asset data to run revenue-generating campaigns. For instance, marketing teams could create specific incentives to customers whose service contracts are nearing renewal or for whom a parts purchase is likely given the age of the asset.

Closing the loop with the customers are account management or customer success teams. They are tasked with delivering an overall customer experience that translates into retention, renewal, and overall customer growth. These individuals need information to support the adoption of asset features, to document the value of the service and business relationship, and to grow the organization's footprint at a customer site or account. For instance, accurate renewal dates and timelines are essential to make sure that a customer's contract status is up to date. Feature usage data can be vital in helping these individuals increase the customer's usage and value from the asset. And dashboards and analytics that capture service activities and cost can be necessary to communicate value and support pricing decisions.

Strategic Stakeholders – These are the C-Suite executives who are looking to shape the future direction of the organization ranging from the CEO looking to craft new engagement models with customers to Chief Revenue Officers looking to identify growth levers to meet revenue objectives.

For these individuals, asset data at a portfolio level is essential to understanding the market opportunity for their business and the ability to meet forecasted goals. More so, we're also seeing these C-level leaders commit to sustainability objectives for their businesses. To deliver on their commitments, they need to align their design, service, and asset management strategies.

Strategic stakeholders also include those who are looking to mitigate business risk, from operational leaders who are looking to identify partners that can be trusted with the organization's value proposition, to compliance leaders who need to ensure that evolving regulatory mandates are adhered to.

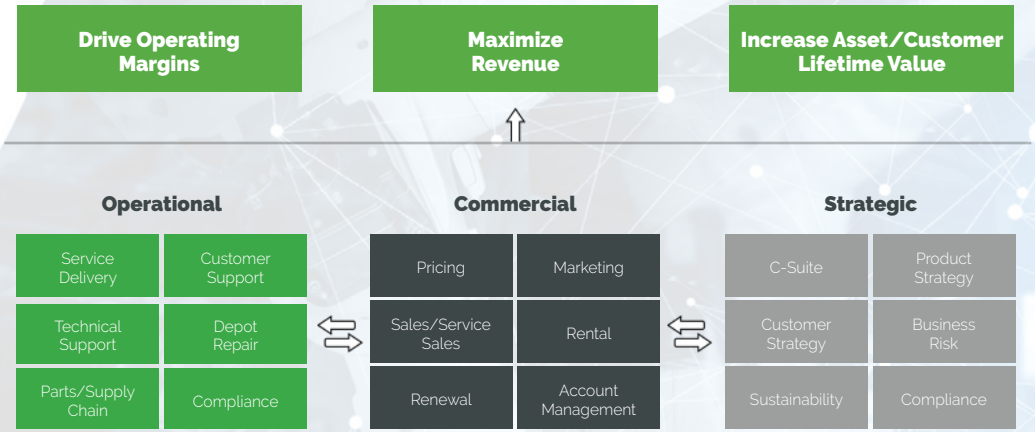
Asset performance and service data are critical to supporting reliability initiatives

And finally, the group includes those that are responsible for product strategy and how the next generation of products can be designed and built to support new customer outcomes. For these product leaders, asset performance and service data are critical to supporting reliability initiatives. Similarly, asset usage data is vital to determining which features and capabilities are most aligned with customer value and the overall revenue objectives of the organization.

The impact of asset data and asset-centric actions can be felt in three primary metrics.

1. **Operating Margins** – With increased efficiency across all stakeholders, organizations can drive more to the bottom line.
2. **Revenue** – Most manufacturers are not only on a mission to increase their overall revenue but are also looking to increase the proportion of recurring revenue in their portfolio.
3. **Customer Lifetime Value** – Monetizing the installed base includes keeping and retaining customers and growing the overall customer share of wallet. In organizations where customers are not directly purchasing the asset, asset lifetime value might serve as a more pertinent metric.

Asset Centricity Powers Sustainable Results for Stakeholders Across the Org



CHAPTER 3

WHY SERVICE PLAYS A CRITICAL ROLE

Creating and maintaining an accurate and actionable asset data thread is a difficult task, one where organizations continue to stumble in their digital ambitions. Newer technologies often complicate the matter as one-off initiatives rarely have the strategic focus and objective necessary to see tangible ROI.

That said, once organizations focus on the concept of asset centricity, the creation and maintenance of this thread provides reason for digital alignment, a purpose for technology, and a framework for the application and focus of new technology. For instance, AI can not only be used to analyze data sets but also to ensure that every data record fits and matches a desired standard. Similarly, blockchain technologies can be used to validate asset performance and attributes, especially where there is no central and undisputed authority over the asset record.

The same applies to IoT. Organizations started with IoT initiatives 20 years ago and have yet to achieve tangible results. The pandemic has driven more organizations to push forward on their IoT initiatives primarily because customers began to reduce the barriers to connectivity. But there is a long way to go. In FSN's research, organizations indicate that only 40% of their new asset portfolio is IoT-enabled. Given the lifecycle of most of these critical assets and the high cost of retrofitting assets to be IoT-enabled, this seems like a critical error.

Direct connectivity to the asset is essential to driving outcome-based and as-a-service programs forward.

In FSN's research, organizations indicate that only 40% of their new asset portfolio is IoT-enabled

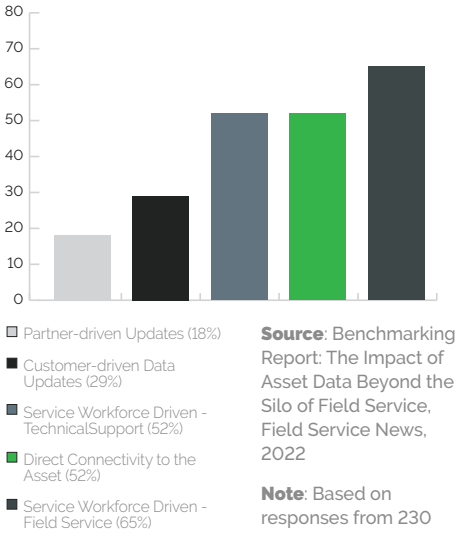
Regardless of progress on the IoT front, service will continue to play an expansive role in creating, managing, and updating asset truth. As highlighted in the previous chapter, service greatly benefits from updated asset information, but service's role in being the steward of asset and customer data is often overlooked. Along those lines, service's impact can be felt in three ways:

1. Collecting and Augmenting Asset Data

As seen in Figure 5, asset data still comes primarily from service-focused systems. As customer service agents, technical support personnel, field and depot personnel follow up on customer requests, they begin to populate the picture of the organization's overall installed base.

Figure 5

Responses to the Question: "What are the ways in which your organization collects asset data (Please tick any relevant options)?"



Source: Benchmarking Report: The Impact of Asset Data Beyond the Silo of Field Service, Field Service News, 2022

Note: Based on responses from 230 service leaders.

McKinsey's research shows that the share of lifetime revenue captured by the original equipment manufacturer can range from lows of 21% to highs of 80-90%. This is further impacted by the choice of the organization's sales and service channels. In that, service's actual contact and interaction with the asset is the only way that organizations can build their asset knowledge. In some circles, this approach to building asset data via onsite and on call interactions is referred to as the Poor Man's version of IoT, supplementing online methods of data collection. Given this impact, the investment in digital technologies to support service work and ease asset data collection has a very measurable and tangible ROI.

2. Capturing Customer Voice & Understanding

The impact of investments made in product and commercial development is directly felt by the service organization. Service is the ultimate proving ground of concepts and simulations built elsewhere as service personnel can actively measure the impact of these initiatives on customer use and value. Organizations often resort to surveys and other tools to capture the voice of the customer, and while these initiatives are valuable, they miss the rich context that can only be filled in by a value-focused service relationship. Service organizations and stakeholders can understand how a customer is using a product or consuming the deliverables of a contract and determine the impact of these products on the customers' end outcomes. This understanding allows the service teams to be more proactive in their approach to ensuring customer success.

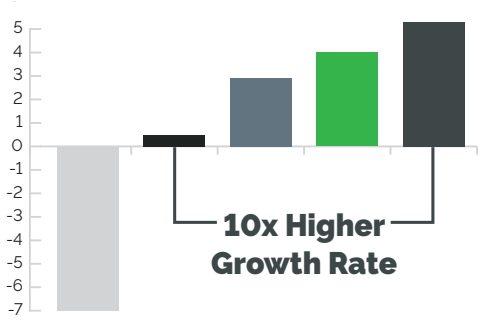
3. Making Feedback Actionable

As per Accenture's research noted in Figure 6, organizations that involve their service organizations in new product development achieve up to ten times the revenue growth of companies that keep these functions separate. Building on the previous two bullets, this comes from the rich vault of data captured by the service organization as well as the context in which that data is provided.

Similarly, service's influence over customer trust can be invaluable to sales teams looking to uncover new revenue opportunities with customers. Feedback on key areas such as

Figure 6

The more often service is involved in product development, the greater the potential for revenue growth



Base: N=2030. **Note**: Level of involvement between a company's customer service organization in the development of new products or offerings/ features/updates, etc. Self reported revenue growth (2018—2020).

Source: Accenture End-to-Endless Customer Service Research 2021.

lead quality, price sensitivity or value-based messaging, can have a major impact on sales performance tied to new equipment or new services sales.

Conclusion & Recommendations – Asset Centricity & Outcomes

Best-in-class companies are further down the road in building bridges between their service and other teams as they recognize:

- The value of asset data
- The critical role that service plays in delivering an accurate picture of asset data

For those organizations that understand the value of asset data, it is imperative that their service and non-service leaders find increased avenues of connection and collaboration. The following are actions that both sets of leaders can take.

To promote asset centricity, leaders in service must:

1. Ensure data discipline in asset records and focus on data standardization.
2. Stop the fix-it and forget-it mentality. Evolve from reactive to strategic asset management and focus on closing the data loop.
3. Understand the goals and incentives of their business counterparts and present asset data as a means to achieve those goals.

For those leaders who are not in service, it is vital that they:

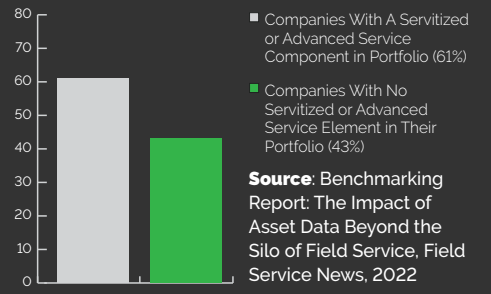
1. Recognize the value of asset data collected and managed by the service organization.
2. Consider the lifetime value and profitability of their assets and align incentives accordingly.
3. Create a culture of accountability around the use of asset data.

The time is now for organizations to focus on a true picture of their assets as this will be necessary for the transition to as-a-service engagement models.

Every stakeholder, including service, will have to apply an as-a-service mindset to how they design, build, sell, support, and replace the assets of the future. Without improved visibility into the asset, its attributes and performance, the execution on business models leading up to as-a-service will be incomplete. The journey has already begun, and as seen in Figure 7 below, organizations with servitized business models are more likely to directly connect with their assets and extend this information across the organization.

Figure 7

Percentage of Respondents Stating Asset Data is Readily Available and Used Effectively (Comparison of Servitized and Non-servitized Operations).



Source: Benchmarking Report: The Impact of Asset Data Beyond the Silo of Field Service, Field Service News, 2022

Note: Based on responses from 230 service leaders.

ABOUT PTC

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