KEY QUESTIONS:

1. How does enterprise software mobility play into your ability to handle digital transformation?

2. Can a lack of enterprise mobility prevent companies from moving to service-based business models to gain revenue in the aftermarket?

3. How many companies can access their full enterprise suite through touch-screen devices?
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ENTERPRISE SOFTWARE MOBILITY AND DIGITAL TRANSFORMATION

BY CHARLES RATHMANN SENIOR MARKETING COMMUNICATIONS ANALYST, NORTH AMERICA, IFS

EXECUTIVE SUMMARY

Digital Transformation may be defined in a number of different ways by analysts or enterprise software vendors. But at its heart is the idea that as we use more digital technologies, those technologies change the way we live and, more pointedly, the way we conduct commerce and do business. Businesses are introducing new technologies in innovative ways to reduce cost, create new revenue opportunities and improve the customer experience.

In complex industrial settings like those served by IFS, digital transformation can be challenging. While retail has been transformed through e-commerce and transportation transformed by services like Lyft and Uber, an engineer-to-order manufacturer, asset-intensive business or complex field service operation may have to apply technology very differently in order to realize transformational change. But the respondents of this study are, to varying degrees, prepared to realize transformational benefits just as or even more significant than those seen in the consumer sector.

In this study of industrial executives in North America, we will look at the impact that enterprise software mobility has on the ability of these industrial organizations to digitally transform their operation. Mobility is important because it:

- Enables accurate and real-time collection of enterprise information for more efficient operation and executive decision support.
- Improves the customer experience in field service environments.
- Increases productive time of technical staff by allowing them to interact with systems like enterprise asset management or computerized maintenance management systems while in the field or at the machine on the plant floor.
- Improves the amount and quality of information available to those servicing assets or customers, allowing more efficient service and first-time-fix in field service environments and more reliable troubleshooting and less down time in a plant environment.
- Induces users to engage with software systems more frequently, increasing return on investment in enterprise software.
In this study, IFS found that software mobility and a perceived readiness for
digital transformation were closely linked. Respondents were asked to what
extent their enterprise software prepared them for digital transformation, and
their answer to this question had a stronger correlation to either high or low
ratings of enterprise software mobility than did company size, industry, age of
the respondent, the type of enterprise software used, vertical industry or
other criteria. So we can say definitively that enterprise software mobility is a
key component in preparing for digital transformation.

And while enterprise software vendors have been evolving their products
to satisfy expectations for broad mobile access, tablet access to these
technologies is still constrained. Only 17 percent of respondents could

![Regularly access enterprise software using mobile device](image)

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<tr>
<th>Mobile Devices Supported by Enterprise Software</th>
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<tr>
<td>Enterprise Resource Planning</td>
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Study results show that overall, only 31 percent of respondents regularly
accessed their enterprise software using a mobile device. Regardless of soft-
ware type, tablet computers were the most widely supported mobile device
by a margin of up to 14 percent greater than the next most common choice,
which was smart phones. But of respondents stating that they could access
enterprise software using a touch screen device like a tablet, only 14 percent
could access all functionality in this fashion, while the remaining respondents
could access some modules of a suite but not others.

This study encompasses mobile experiences with enterprise resource
planning (ERP), enterprise asset management (EAM), field service manage-
ment (FSM), customer relationship management (CRM) and supply chain
management (SCM) software.
One other surprising result was that reported levels of mobile access to applications that would beg for mobile usage, including CRM and FSM, were similar to those for other types of enterprise software. Different types of enterprise software were in a dead heat when it comes to accessibility from a mobile device, with SCM software owning the dubious distinction of being slightly less accessible.

While tablets were the most frequently cited mobile device used to access enterprise software in the study, only a tiny fraction of respondents could access the entirety of a software suite using a tablet or other touch screen device.

**KEY FINDING 1:**
Enterprise Mobility and Digital Transformation Closely Linked

Mobile software engages people. From consumer software like mobile apps and social media to digital photography to Pokémon Go, we engage more with technology if we can take it with us. In an industrial or business setting, enterprise software that can be accessed using a mobile device turns this increased level of engagement into specific benefits that could represent opportunities for digital transformation in many industries.
• It allows us to turn downtime away from a laptop or desktop into productive time.

• It can tighten approval and review timelines of project action items, invoices and other deadline-sensitive transactions.

• Mobile enterprise software can put the right diagnostic information or tutorials in the hands of a field service technician or maintenance technician, thereby leveraging technology to increase the competence and skill set of front-line personnel.

• Full access to an enterprise suite on a tablet computer can facilitate communication by bringing analytics and rich data experiences to ad hoc, standing meeting environments.

• In field service and other service situations, mobile enterprise software can digitize customer interactions like estimate approvals, and final signoff and acceptance of work.

• Mobile device cameras can record conditions of a machine or job site and attach these images to asset, customer, project, supplier records or other objects in enterprise software. Cameras can also be used to scan bar codes. This has implications across functions like receiving, quality control, construction, maintenance and repair, service management and more.

• Mobile devices generally support geolocation, which can assist in the maintenance of linear assets, automate estimated time of arrival communications in field service settings or play a key role in field scheduling automation.

• In a field service or maintenance environment, details of service work can be captured instantaneously, which can eliminate data loss that results when the details of a job are recorded hours or days afterwards. This gap can result in service not being billed, inaccurate inventory levels, a loss of data on the condition of the asset and other serious business problems.

Lacking support for the mobile enterprise, companies will be prevented from digitally transforming their operation in important ways including:

• Total productive hours of senior and middle management in particular may be constrained by lack of access to the system of record. Total productive time, or wrench time, for maintenance and service technicians may also be constrained because an hour or more at the end of each shift is required to record work against work orders or service orders.

• Total cost of maintaining capital assets will be higher and quality of asset data will be lower than in organizations with less enterprise mobility. Technicians need to spend non-value-added time at the end of a shift, and the disconnect between when and where work is performed and when it is recorded will increase the effect of human error on the asset record.
Accuracy of asset and service management records will be questionable as there will be a gap of several hours between when work is completed and when it is recorded. In some cases, work, inventory consumption and other critical data will not make it into the system of record.

Optimizing field service schedules can be difficult without the geolocation functionality of a mobile device. It may also be difficult to give customers accurate estimates of where their service technician is and when they can be expected.

Approval cycles in timeline-sensitive environments may be overly long.

Field service technicians will need to make extra trips because they lack the knowledge to diagnose or resolve a problem.

These field service technicians will also be unable to present a modern, efficient image to customers because they will be using hard copy agreements. These agreements and other documents must then be manually entered into a system of record, increasing overhead and often lengthening the quote to cash cycle due to administrative backlogs.

Data integrity improvements necessary for effective business decision making will be lacking due to a chronological disconnect between when activities are completed and when they are recorded.

When we divide survey respondents into those who said their enterprise software prepared them very well or somewhat well for digital transformation (digital transformation leaders) and those who said their software prepared them not very well or was an impediment (digital transformation laggards), the two groups responded to mobility questions very differently.

There are a number of reasons that perceived readiness for digital transformation and mobile access may be linked. Many examples of digital transformation are enabled by the always-on connected way we use digital technology, including mobility. This omnipresence of connectivity can enable real-time communication in ways that are not possible without a device that is always close at hand. This may help us shorten communication cycles for timeline-sensitive processes. We may also be able to leverage GPS features of a device for location-sensitive applications like field service or linear asset maintenance. The transformational potential of mobility in industrial settings is real, and enterprise mobility and transformation readiness are definitely related according to the respondents in this study.

KEY FINDING #2
Age, Seniority Affects Enterprise Mobility
The degree to which respondents said they access enterprise software through a mobile device is dependent on large part on age, which speaks to the computing habits of younger people and the different ways senior workers engage with enterprise data.

“Mobile is the most obvious manifestation of digital transformation. It is not the only one or most important one. But when people use enterprise software from a mobile device, it indicates that the system is the lifeblood of the business. Your employees can connect into those core processes and participate even if they are not sitting at their desk. If you cannot do this, you will struggle with anything in digital transformation.”

Rick Veague, Chief Technical Officer, North America, IFS
While respondents aged 18-35 were more likely to access enterprise software on a mobile device than those 36-55, it was those 56-plus who were the heaviest mobile users. This may be because the ways that senior managers, supervisors and those involved in analytics and decision-making use enterprise software are different. Some organizations may also have policies that bar BYOD, which means mobile access may be restricted to senior managers with company-issued tablets which are used to consume data while offering minimal options to execute transactions in the system.

Perceived levels of readiness for digital transformation also varied by age in a pattern that suggests a correlation with age cohorts who are more likely to access enterprise software through a mobile device. The youngest and oldest cohorts were most likely to both take advantage of enterprise software mobility and rate their software's ability to facilitate digital transformation as “very well.”

“Across the age demographic, these respondents are underserved with enterprise mobility. We can speculate that the younger people think mobile is more important and that if you are older, you may have a different position, travel more or work from home. But really, the commonalities across age groups here are more important than the differences.”

Rick Veague, Chief Technical Officer, North America, IFS
KEY FINDING #3

The Middle Market Has Unique Mobility Challenges

Survey data suggests that when it comes to enterprise mobility, companies in the middle market, between $100 million and $1 billion in revenue, face more severe usability challenges than small to medium-sized companies or enterprise-level organizations with a billion dollars in revenue or above.

This may be due largely to the degree of complexity these mid-sized businesses face, including multiple, sites and divisions that may leave them stranded on multiple legacy software systems that would have at best different mobility options and at worst no path to mobility. Their IT resources, in the meantime, may consist of a handful of full-time equivalents, and they lack the budget for large systems integration projects that might be necessary to deliver a satisfying mobile experience to enterprise users.

This pattern of middle market struggles with mobility was most apparent for ERP software, while mobile access was also rated poorly by enterprise-level companies with more than a $1 billion in revenue.

In the case of field service management software, which would depend heavily on mobility to ensure accurate service provision, very small companies that probably had more straightforward needs were most likely to report good or excellent mobile access at 45 percent. Since the sample was heavy in industrial automation companies and industrial manufacturers, which would also need functionality for inventory management and often reverse logistics, one can imagine the various types of information they would not be able to access in the field.

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“The middle market industrial company is a more complex organization than a smaller company. There are more people involved. It is more difficult to collaborate. They have complex IT structures, but few professional IT staff or resources. So they are underserved. Companies at that enterprise level have deeper pockets, but across all demographics, we see businesses underserved with enterprise mobility.”

Rick Veague, Chief Technical Officer, North America, IFS
KEY FINDING #4

Poor Mobility May Be a Barrier to Servitization

Respondents who said their enterprise software did a poor job helping them prepare for digital transformation, the DT Laggards, also were less likely to be engaged in service-based business models than DT Leaders. This result becomes even more significant when we consider that 88 percent of DT Laggards reported being in manufacturing-centric business models.

Manufacturers have seen margins on goods sold tightening as products become commoditized in a global market. More companies are therefore focusing on aftermarket service as a way to add value to their offering to balance out the lumpy revenue typical in capital equipment or durable goods. Manufacturers involved in aftermarket service are projecting faster growth than those reliant entirely on product revenue. And this means companies will need to ensure their enterprise software platform can be extended to encompass business models including field service, depot repair, warranty work, maintenance, repair and overhaul and other processes associated with aftermarket service.
Discrete manufacturers, who are more likely to benefit from aftermarket servitization opportunities than their process manufacturing counterparts, are also more likely to be Digital Transformation Laggards.

The single largest industry represented among respondents is industrial machinery manufacturing, along with considerable percentages in industrial controls, alternative energy equipment, aerospace and defense, automotive, and other durable goods manufacturing industries. Each of these industries does or will have compelling reasons to have a service organization involved in multiple of these service-based disciplines. Lacking the ability to support complex products after the sale, these companies may need to rely on dealer or service organizations to support their products or simply be unable to offer their customers lifecycle support for complex durable assets. This in turn may put them at a disadvantage compared with more sophisticated manufacturing organizations with the technological infrastructure to profitably manage the mobile technicians, schedules, contracts, vendors and customer experience around aftermarket service.
METHODOLOGY
IFS in North America and the research arm of CFE Media collected 200 survey respondents from a sample of manufacturing, automation/controls and other industrial executives. Data collection and tabulation were managed by Amanda Pelliccione of CFE Media. IFS North America reviewed these tabulations and cross-tabulations to draw inferences relevant to enterprise technology used to manage industrial organizations involved in:

- field service management
- aftermarket service
- maintenance repair and overhaul
- depot repair
- warranty/service work
- manufacturing
- construction
- maintenance of their company’s physical assets
RESULTS

Disciplines central to business

- **Doing some important**
- **Will do in the future**
- **Critical to business**
- **Not applicable/Don't know**

Field Service Management
- Critical to business: 90%
- Will do in the future: 80%
- Doing some important: 60%
- Not applicable/Don't know: 50%

Aftermarket Service
- Critical to business: 100%
- Will do in the future: 90%
- Doing some important: 80%
- Not applicable/Don't know: 70%

Maintenance Repair and Overhaul
- Critical to business: 100%
- Will do in the future: 90%
- Doing some important: 80%
- Not applicable/Don't know: 70%

Depot Repair
- Critical to business: 100%
- Will do in the future: 90%
- Doing some important: 80%
- Not applicable/Don't know: 70%

Warranty/Service Work
- Critical to business: 100%
- Will do in the future: 90%
- Doing some important: 80%
- Not applicable/Don't know: 70%

Manufacturing
- Critical to business: 100%
- Will do in the future: 90%
- Doing some important: 80%
- Not applicable/Don't know: 70%

Construction
- Critical to business: 100%
- Will do in the future: 90%
- Doing some important: 80%
- Not applicable/Don't know: 70%

Maintenance of your company’s physical assets
- Critical to business: 100%
- Will do in the future: 90%
- Doing some important: 80%
- Not applicable/Don't know: 70%

Quality of mobile access to enterprise software

- **Poor**
- **Okay**
- **Good**
- **Excellent**

Enterprise Resource Planning
- Poor: 30%
- Okay: 40%
- Good: 20%
- Excellent: 10%

Enterprise Asset Management
- Poor: 40%
- Okay: 30%
- Good: 20%
- Excellent: 10%

Customer Relationship Management
- Poor: 50%
- Okay: 30%
- Good: 20%
- Excellent: 10%

Field Service Management
- Poor: 60%
- Okay: 20%
- Good: 20%
- Excellent: 0%

Supply Chain Management
- Poor: 70%
- Okay: 20%
- Good: 10%
- Excellent: 0%

Regularly access enterprise software using mobile device

- Yes: 31%
- No: 69%
Regularly access enterprise software using mobile device

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Enterprise Software Accessibility with Touch Screen Device

- None: 39%
- All of it—our main daily-use interface is touch screen-compatible: 44%
- Some—only certain modules are accessible or we need to use an app native on the device: 17%

How well enterprise software prepares for digital transformation

- Not well: 33%
- Somewhat well: 49%
- Very well: 13%
- It is an impediment: 5%
**Respondent age**
- Prefer not to say: 4%
- 56 years old or older: 35%
- 46 to 55 years old: 34%
- 36 to 45 years old: 16%
- 18 to 35 years old: 11%

**Estimated company annual revenue**
- More than $1 billion: 18%
- $50 million to $100 million: 14%
- $250 million to $500 million: 7%
- $100 million to $250 million: 7%
- Less than $50 million: 30%
- Don’t know: 8%

**Industry involvement**
- Industrial Machinery, Engine, Turbine,...: 10%
- Industrial Controls, Test or Medical Equipment,...: 20%
- Chemicals or Pharmaceuticals: 10%
- Oil, Gas or petroleum Refining incl. Coal Products: 10%
- Consumer Electronics or Appliances, Electrical,...: 30%
- Plastics or Rubber: 10%
- Primary or Fabricated Metals: 10%
- Alternative Energy Equipment, incl. Solar, Wind,...: 10%
- Food, Beverage or Tobacco: 10%
- Utilities including Electric, Gas Water & Waste: 10%
- Aircraft, Aerospace or Defense: 10%
- Wood, Paper or Printing: 10%
- Automotive or Transportation: 10%
- Electrical Equipment or Appliances: 10%
- Plant/Facilities Engineering or Maintenance,...: 10%
- Engineering or System Integration Services,...: 10%
- Textiles or Apparel: 10%
- Government or Military: 10%
- Information, Data Processing or Software,...: 10%
- Mining, Agriculture or Construction: 10%
- Other: 10%
ABOUT IFS

IFS develops and delivers enterprise software for customers around the world who manufacture and distribute goods, maintain assets, and manage service-focused operations. The industry expertise of our people and solutions, together with commitment to our customers, has made us a recognized leader and the most recommended supplier in our sector. Our team of 3,300 employees supports more than one million users worldwide from a network of local offices and through our growing ecosystem of partners.

For more information about IFS, visit IFSworld.com