THE DIGITAL THREAD IMPERATIVE

High tech companies must make the right connections for new growth
As the world becomes increasingly digital, high tech companies face a new reality: the speed of innovation is greater than it’s ever been, the time between development cycles continues to shrink, and customer expectations continuously rise. Only by becoming more data-driven in their decisions can high tech companies become more responsive to their customers’ needs, deliver new digital experiences and increase operational efficiency. To make this happen, high tech companies must master the Digital Thread – the flow of data that runs through all the organizations and contexts with which a product/service interacts.

Accenture recently completed research among global high tech companies aimed to understand the industry’s readiness for, and adoption of, the Digital Thread. Read on to learn what we discovered—and why these findings are so important to high tech companies today.
Volumes of data flow through high tech companies’ global operations, product development, supply chains and sales channels. So much so that 80 percent of high-tech executives say they’re currently inundated with operational or usage data from products and/or services in the field. But data is also a source of huge opportunity if it can be harnessed and used effectively. The Digital Thread is becoming increasingly important to high tech companies’ ability to efficiently and proactively gather holistic, data-driven insights on product development decisions and customer experiences, and influence innovation at the pace the market demands.

High-tech companies are taking active steps to implement the Digital Thread in their businesses. We found that 93 percent of executives identify supply chain management as a key platform for enabling the Digital Thread today, while 75 percent say that within three years, they aim to have the Digital Thread managing supplier/partner content and IP for both hardware and software.
Our research identified three key imperatives to advance Digital Threads in high tech businesses:

1. Embrace the value of upstream and downstream connection

2. Weave together disparate functions for a holistic, business-led approach

3. Breakdown technology barriers that inhibit Digital Thread success

The Digital Thread creates a vital, free-flowing stream of information that runs through all the functions and contexts with which a product or service interacts. From ideation through design, engineering, manufacturability and serviceability, it enables real-time, product-usage telemetry and the kind of predictive analytics that are increasingly required.
Individual segment owners want good data to flow into their segment, and they want to hand off good data to the next. But, they identify little direct value in connecting the Digital Thread, beyond one step upstream or downstream from their area of responsibility. This thinking overlooks the bigger picture. The quality of a company’s master data depends on collective ownership of (and responsibility for) its stewardship. Without it, effective product/software lifecycle management across the business is impossible. The organization will only be as strong as its weakest link.
Digital Threads have proven difficult to fund sufficiently. Executives’ top-cited reason is that the benefits are distributed among many different departments, and thus, are difficult to capture or document.

Ownership of a Digital Thread resides across multiple disparate organizations, functions and systems. That’s why executive sponsorship is critical and shared business leadership mandatory. Today only 21 percent of high tech companies share ownership of the Digital Thread across business and IT functions while more than 50 percent expect IT to own and maintain the thread.

### Most frequently cited platforms to contribute to a Digital Thread

<table>
<thead>
<tr>
<th>Platform</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Software Application Development</td>
<td>51%</td>
</tr>
<tr>
<td>Customer Data Analytics</td>
<td>49%</td>
</tr>
<tr>
<td>Hardware Simulation and Analysis</td>
<td>44%</td>
</tr>
<tr>
<td>Maintenance, Repair and Overhaul</td>
<td>43%</td>
</tr>
<tr>
<td>Product Lifecycle Management</td>
<td>43%</td>
</tr>
<tr>
<td>Product Data Management</td>
<td>43%</td>
</tr>
</tbody>
</table>
WEAVE TOGETHER DISPARATE FUNCTIONS FOR A HOLISTIC BUSINESS-LED APPROACH

39% say that benefits being distributed among many departments is a top challenge.

30% say there is difficulty proving the business case or ROI.

Only 21% share ownership of the Digital Thread across business and IT.

58% expect IT to own and maintain the Digital Thread.
Disconnected systems add to the complexity of building a Digital Thread. Nearly one-third of high tech companies report that connecting a fragmented software vendor landscape is a top challenge hindering a digital thread approach. The plethora of disconnected systems and applications, data standards, data formats and governance makes it extremely difficult to leverage data across the organization. Efforts toward standardization, consistency and integration across the data that’s available and the systems that capture it, will help considerably in providing end-to-end telemetry data that can support advanced analytics and proactive, instead of reactive, decision-making.

30% report that connecting a fragmented software vendor landscape is a top challenge hindering Digital Thread use.
The Digital Thread can be the fabric for greater operational efficiency and shorter, more impactful product development cycles that increase customer value. While significant upfront work is required, high tech companies that work to implement the Digital Thread on an enterprise-wide basis stand to gain significant competitive advantage. It requires a solid commitment from the business and IT to work together to manage the challenge of data collaboration as a true partnership. Here are three actions high tech companies can take now:

**MAKE IT AN ENTERPRISE-WIDE PRIORITY**

To obtain full value from the Digital Thread, leaders need to take a broad view. Because the benefits of the Digital Thread are enterprise-wide, this should be a strategic, company-wide priority, requiring C-level executive sponsorship.
ESTABLISH COMMUNAL OWNERSHIP, WITH A CDO TO ASSURE INTEGRITY

There will not be a single “owner” of the Digital Thread in a conventional sense. Instead, each part of the business will own its segment of the thread. There should, however, be communal ownership—both upstream and downstream—in order to address data integrity. To assure this integrity, companies need a chief data officer (CDO) or Data Council, which is independent from IT, the Business Units (BU) and the core Business Functions. This officer or council will own data governance, formats and standards across the organization, and will need to coordinate and liaise with all the functional business owners from whom data will be required.

LAY THE FOUNDATION

The first step should be establishing the basic foundation for the Digital Thread, including implementing the underlying infrastructure needed to collect data from various sources and to conduct analysis. Governance is a core concern here. Once this fundamental layer is in place, each of the business segments can be addressed according to priorities and maturity which is independent from IT, the BU’s and the core Business Functions. This officer or council will own data governance, formats and standards across the organization, and will need to coordinate and liaise with all the functional business owners from whom data will be required.
ABOUT THE ACCENTURE DIGITAL THREAD RESEARCH 2017

The Accenture Digital Thread Research was a global online survey of Communications, Media, High Tech, and Aerospace & Defense senior executives in North America, Europe and Asia Pacific aimed at better understanding how their companies are evolving the use of lifecycle management technologies such as digital threads and digital twins. The survey spanned 150 businesses from Global 2000 class companies across nine geographies (US, Canada, UK, France, Germany, Italy, China, Japan, and South Korea). Executive titles included C-level executives, Division Presidents and Division Vice Presidents (VPs) of engineering, or their equivalent.

ABOUT ACCENTURE

Accenture is a leading global professional services company, providing a broad range of services and solutions in strategy, consulting, digital, technology and operations. Combining unmatched experience and specialized skills across more than 40 industries and all business functions – underpinned by the world’s largest delivery network – Accenture works at the intersection of business and technology to help clients improve their performance and create sustainable value for their stakeholders. With 449,000 people serving clients in more than 120 countries, Accenture drives innovation to improve the way the world works and lives. Visit us at www.accenture.com.