World Economic Forum
Digital Transformation Initiative
In collaboration with Accenture

PROFESSIONAL SERVICES INDUSTRY
EXECUTIVE SUMMARY
JANUARY 2017
FOREWORD

Digital transformation is emerging as a key driver of sweeping change around the world. It has the potential to significantly improve consumers’ lives and create broader societal good, while providing businesses with new opportunities to capture competitive advantage and create value. The transformational power of digital is also fuelling the Fourth Industrial Revolution, changing how people live, work and relate to one another. In contrast to its predecessors, the current industrial revolution is universal, affecting every sector of the economy, including knowledge professionals.

The Digital Transformation Initiative (DTI) was launched by the World Economic Forum in 2015 to serve as the focal point for new opportunities and themes arising from the latest developments in the digitalization of business and society. The project supports the broader activity of the Forum around the theme of the Fourth Industrial Revolution.

The DTI has analysed the impact of digital transformation on six key industries – automotive, consumer goods, electricity, healthcare, logistics and media – and on three cross-industry topics: digital consumption, digital enterprise and societal implications. In 2016, the initiative was extended to cover seven additional industries, including Professional Services, and two new cross-industry themes: the platform economy, and societal value and policy imperatives. Through its broad focus, the initiative has driven engagement on some of the most pressing topics facing industries and businesses today, and provided business and policy leaders with an informed perspective on how to take action.

Digitalization is also affecting the Professional Services industry both internally and externally. How digital disrupts other industries will impact the clients of Professional Services firms, who, in turn, will have to adapt their offerings accordingly. Transforming business models to better meet client expectations, pre-empting disruptive competition, and creating the right ecosystem of partners will become a source of competitive advantage.

Professional Services companies have an unprecedented opportunity to harness the power of artificial intelligence to augment people’s ability to “do”, “think”, “learn” and “feel”. By automating routine tasks, technology is freeing people to focus on solving higher-order problems. Technology makes it more important than ever for companies to be agile – and makes it easier for them to achieve that agility. The rise in machine learning and the dominance of non-asset intensive platforms, with access to people, reach and value, will provide organizations with the tools to be ever more responsive. Companies that can anticipate change and react faster than competitors will stay ahead of the curve.

Clearly, digitalization will be a source of transformational change for Professional Services, but are we comfortable leaving machines to make ethical and moral decisions? How can the industry and government address a rising skills gap? How can we navigate the impact of automation and digital transformation on skills and people? How can we ensure that the benefits of digitalization are equitably shared?

This White Paper was prepared in collaboration with Accenture, whom we thank for their support. We also thank the members of the World Economic Forum’s Professional Services Industry community and the more than 40 experts from industry partners, government and academia who were involved in shaping this project’s insights and recommendations.

We are confident that if the recommended actions are implemented, we can contribute to improving the lives of people and the success of business through digital transformation. Upskilling people to be ready for changes that cannot always be predicted will be a defining challenge of our time.

Jonas Prising
Chairman and Chief Executive Officer
ManpowerGroup

Bruce Weinelt
Head of Digital Transformation
World Economic Forum
In a world where game-changing innovation has become the norm, DTI provides a unique insight into the impact of technology on business and society over the next decade.

The past 12 months have brought a series of exciting technological breakthroughs. Self-driving Tesla cars can now be seen on the road; Uber is testing autonomous taxis in Pittsburgh; Google DeepMind’s Alpha Go demonstrated a leap forward in artificial intelligence with a famous victory at the board game Go; and augmented reality hit the mainstream with the success of Pokémon Go. Game-changing innovation has become the norm.

Digital innovation is reshaping industries by disrupting existing business and operating models. But it is also having a profound impact on society, presenting a series of opportunities and challenges for businesses and policy-makers.

The Digital Transformation Initiative (DTI) is a project launched by the World Economic Forum in 2015 to serve as the focal point for new opportunities and themes arising from the latest developments in the digitalization of business and society. Over the past two years, DTI has analysed the impact of digital transformation across 13 industries and five cross-industry themes. We have also developed a unique value-at-stake framework to support a consistent approach to measuring the impact of technology on business and wider society. An overview of this framework is included on the next slide.

Our goal is for this framework to provide an evidence base and common language for public-private collaboration focused on ensuring that the benefits of digital transformation are fairly and widely shared.

Bruce Weinelt
Head of Digital Transformation
World Economic Forum

Mark Knickrehm
Group Chief Executive
Accenture Strategy
The Professional Services industry appears to be approaching a tipping point, as disruptive technologies drive fundamental changes in its economics.

The Professional Services industry may be proficient at evolving its offerings to clients’ changing needs, but perspectives differ on whether the industry itself has been significantly transformed by digital disruption. One school of thought sees Professional Services in the vanguard of digital transformation, with high levels of digitalization across most aspects of the sector. An alternative view holds that, despite outward agility, it has not yet been disrupted to the same extent as some other industries.

Our assessment of digital disruption in Professional Services is nuanced. We believe that, though there has not yet been a seismic disruption to shake the entire industry, the shifts under the surface are stronger than many people realize. This suggests that the industry may be approaching a tipping point.

Artificial intelligence (AI), data analytics, machine learning and platforms are among the most important technologies disrupting Professional Services. AI supports professionals to learn, think and perform better; analytics and machine learning are revolutionizing insight generation; and platforms are disrupting traditional business models by bringing buyers and suppliers together.
The extent to which digital technologies are disrupting Professional Services varies across segments, with accounting and audit at the highest risk from computerization and technology.

The impact of digitalization varies across industry segments

The impact of technology varies by segment

Source: World Economic Forum / Accenture analysis

Note: Illustrative / non-exhaustive. Source: World Economic Forum / Accenture analysis
THE CHANGING ECONOMICS OF PROFESSIONAL SERVICES

Digital disruption is contributing to a fundamental shift in the supply and demand dynamics of Professional Services.

Evolving demand landscape

Ubiquitous data and pervasive technology give clients greater insight into how professions work. Availability of and access to data has allowed clients to have more say in how they procure expertise. Insourcing of professionals has also injected more transparency into their work by reducing the degree of separation between them and their clients. This has created an expectation of high-quality professional expertise at an affordable price point.

Changing supply dynamics

Traditionally, the Professional Services industry has relied on human skills to meet clients’ needs. Once a solely human capability, expertise based on cognition and memory is being acquired by machines. Rapid advances in machine learning and robotic process automation (RPA) are helping create a new source of supply in the market. Technology is supporting increasingly effective remote collaboration, boosting productivity and enabling a shift towards freelance work.

Alternative marketplaces

Online platforms now offer a convenient alternative to the traditional physical marketplace for services. Clients and customers can now seek professional help from anywhere and at any time. This trend, buttressed by the fact that 3 billion people now have internet access and 2 billion use smartphones, is helping accelerate a change in how services are bought and sold.

Changing supply in Professional Services

114,000

Number of jobs in the legal sector likely to be automated in the next 20 years¹

43%

Proportion of US workforce expected to be freelance by 2020²

Sources: 1. Financial Times; 2. The Telegraph
PROFESSIONAL SERVICES: DIGITAL THEMES AND INITIATIVES

We have identified four themes that we expect to have the greatest impact on the digital transformation of Professional Services over the next decade.

**Business Model Transformation**
Digitalization empowers firms to change every facet of how they go to market: their services, value propositions, target customers and price points. Firms are repositioning themselves with new services for the digital world and fostering an ecosystem of partners across the industry value chain and beyond.

**Intelligent Automation**
Expertise is the primary offering of the Professional Services industry, and traditionally it has been provided by humans. However, emerging technologies such as analytics, AI and deep learning are augmenting professionals’ abilities to do, think, learn and feel. This can both enhance the quality and volume of expertise, and lower the cost to serve.

**Digital Agility**
Companies that can anticipate change, react faster than competitors, and adapt their strategies and processes in light of disruptive events are able to stay ahead of the curve. Companies are becoming more responsive by adopting a flexible workforce, promoting an agile culture, and investing in smart digital infrastructure to encourage productivity and creativity.

**Talent Empowerment**
Reimagining the employee experience to offer the right value proposition will be imperative for firms in the digital world. They will need to leverage new technologies or models to source talent, and maintain high engagement levels by ensuring that talent is appropriately trained and dynamically managed.
Firms are repositioning themselves for the digital world, taking new data-based offerings to clients and fostering an ecosystem of partners across the industry value chain and beyond.

**Enhancing Go-to-Market Strategy**

Professional services firms are evolving their offerings to keep pace with digitalization, building digital platforms to facilitate conversations with clients. New data is generating novel insights to solve specific client needs. Companies are providing offerings for the digital age, developing data-based services and adjusting revenue models.

**Fostering a Digital Ecosystem**

The recent shift towards cultivating ecosystems of partnerships between incumbents and start-ups has fostered innovation, promoted specialization and made operations more agile. It has also helped companies create new and innovative value propositions for clients at lower price points. Over the past five years, the fast-growing value of venture capital and private equity funding in Professional Services indicates an acceleration in disruptor and start-up activity within the industry.

**Total funding and number of deals in the Professional Services industry**

<table>
<thead>
<tr>
<th>Quarter</th>
<th>Total Funding* ($ billion)</th>
<th>Number of Deals for Professional Services**</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q2'11-Q2'12</td>
<td>0.5</td>
<td>200</td>
</tr>
<tr>
<td>Q2'12-Q2'13</td>
<td>145</td>
<td>300</td>
</tr>
<tr>
<td>Q2'13-Q2'14</td>
<td>190</td>
<td>400</td>
</tr>
<tr>
<td>Q2'14-Q2'15</td>
<td>252</td>
<td>500</td>
</tr>
<tr>
<td>Q2'15-Q2'16</td>
<td>365</td>
<td>600</td>
</tr>
</tbody>
</table>

*Total Funding (Includes funding by VCs, Corporates / Corp VCs, Private Equity, Angel and Others)

**Number of Deals for Professional Services (Includes Consulting & Outsourcing, Legal Services and HR & Staffing)

Source: CB Insights
FOCUS ON INTELLIGENT AUTOMATION: DIGITAL INITIATIVES

Emerging technologies such as analytics, AI and deep learning are augmenting professionals’ abilities to do, think, learn and feel.

Modularizing Work

Modularizing work breaks down Professional Services projects so that expertise can be matched precisely to customer need, which lowers the cost to serve. Super-specialized new entrants are unbundling specific tasks from larger projects and, as their expertise in modularizing work deepens, they are moving up the industry value chain to tackle increasingly complex projects.

Augmenting Human Intelligence

Machines are augmenting key human capabilities so that expertise can be provided to clients in more efficient ways, using a combination of humans and machines. These will enhance the quality and volume of expertise provided, while lowering the cost to serve.

Illustrative case studies:
We examined which human capabilities are most important for professionals to provide expertise and investigated the degree to which each is being augmented by technology. The results are summarized in this graphic.

Emerging technologies can augment professionals’ ability to provide expertise

**THINK**
- Insight Generation
  - Kensho
- Creativity
  - Project Dreamcatcher, Rembrandt
- Cognition
  - Watson, DeepMind
- Memory
  - Robo Brain

**DO**
- Communication
  - Quill (Narrative Science), Amelia
- Presentation
  - BeamPro, Magic Leap
- Organization
  - Amy Ingram (x.ai)

**LEARN**

**FEEL**
- Relationship Building
  - Crystal, LinkedIn
- Empathy
  - Pepper
- Instinct
  - Uniquely human
- Appearance
  - Sophia

Note: The degree to which human capabilities are being augmented by technology is indicated by the ideograms next to each capability.
Companies with workforce flexibility, an agile work culture and smart infrastructure can anticipate change, react faster than competitors, and adapt their strategies and processes in response to disruptive events.

Developing a Flexible Workforce
Platforms enable organizations to flex their workforce, manage capacity effectively and crowdsource super-specialists for specific tasks. The result: an operating model with greater agility. There are three models for organizing a workforce: a traditional model, where a Professional Services firm allocates internal resources to serve the client; a flexible model, where the firm crowdsources on-demand workers for specific projects; and a hybrid model that combines internal and external talent.

Nurturing an Agile Culture
Agility is a cornerstone of successful digital transformation. High-performing companies can rapidly reconfigure their offerings to meet their client’s needs. A nimble mindset across a Professional Services firm’s talent pool helps the company rapidly identify new markets and deploy tailored solutions. As companies look for greater agility and employees seek more flexibility, a nimble organizational culture can create a win-win for both the company and the employee.

Investing in Smart Infrastructure
Using digitally enabled infrastructure enhances internal productivity and creativity, and improves the employee and client experience that the firm offers. Enterprises that empower workers at all levels with the appropriate digital tools and infrastructure can steer their employees towards sounder business decision-making, greater efficiency and enhanced creativity.

Illustrative case studies:
FOCUS ON TALENT EMPOWERMENT: DIGITAL INITIATIVES

This theme highlights the importance of ensuring that talent is hired with greater precision, appropriately trained and dynamically managed so that employees can reach their potential.

Reimagining Hiring

Recruiters and candidates already have tools at their disposal to make the hiring process more efficient. AI is set to play a leading role, enabling recruiters to scan thousands of CVs and shortlist candidates more efficiently. Identifying and investing in the skills of the future is critical to keeping recruitment sustainable. This is especially challenging when the future may bring as yet unimagined roles requiring new skills in data science, intuition, pattern finding, and dealing with complexity and change management.

Training Talent

The role of automation in the industry will grow in importance, but the quality of human recruits will remain paramount. Competitive advantage will derive from producing outputs of impeccable quality on an otherwise level playing field. This underlines the importance of training employees to work hand in hand with machines. Advances in technology are also changing training and education by democratizing access to knowledge, enabling individuals to become lifelong learners.

Illustrative Case Studies:

entelo  glassdoor
Here are just three of the many case studies that can be found in our white paper on digital transformation in Professional Services.

**Lex Machina:**
*Mining litigation data for new insights*

Lex Machina mines litigation data, revealing previously unavailable insights about judges, lawyers, parties and patents, culled from millions of pages of intellectual property (IP) litigation. Corporate counsel use Lex Machina to select and manage outside counsel, increase IP value and income, protect company assets, and compare performance with competitors. Law firm attorneys and their staff use Lex Machina to pitch and land new clients, win IP lawsuits, close transactions and prosecute new patents. Prominent clients include eBay, Microsoft and Shire Pharmaceuticals. The company claims that the total number of patent litigation cases filed has increased by more than 100% in the past three years.

**Kensho:**
*Using big data and machine learning to answer complex research queries*

Kensho augments human capabilities to think, learn and do by combining big data and machine learning to analyse the impact of real-world events on financial markets and answer complex financial queries automatically. In the past, a trader or analyst had to conduct research by accessing multiple databases using certain keywords. Kensho’s search engine automatically categorizes events according to abstract features—a process that takes just a few minutes. Generating a similar query without automation could take around 40 man-hours—a significant investment for companies whose employees are paid an average salary of $350,000 to $500,000.

**Crystal:**
*Helping professionals connect and communicate*

Crystal helps workers build productive relationships by understanding the personalities of people they communicate with. It offers instant access to millions of personality profiles and free communication advice. As work communications move away from in-person meetings around a conference table towards virtual chatrooms, misunderstandings are more likely to emerge. The app steps in to coach individuals on empathy and assist non-native English speakers. Sales executives from more than 75% of Fortune 500 companies already use Crystal. It analyses publicly available data sources to categorize professionals into 64 personality types, then extrapolates from this to identify their communication style.
Advances in digital technology and economic shifts could revolutionize Professional Services, but barriers to change need to be addressed.

**Innovator’s Dilemma**

The ‘platformization’ of the professions means that expertise is not necessarily sought from the nearest expert, but the best. Professional services firms therefore need to continuously challenge the way they do things and be willing to reinvent themselves, with the agility to execute at pace.

**Low Technology Adoption Rates**

From top management to front-line managers who actually work hand in hand with machines, there is a rapid decline in trust in the advice provided by intelligent systems (see graphic). Managers have an incomplete understanding of what they may need to thrive in a partnership with intelligent machines. There’s a trust gap within managerial ranks, and a lack of a clear path to realizing the opportunity presented by automation and augmentation.

**Relying on traditional KPIs**

Professional services firms focus on maximizing financial value (through metrics such as quarterly shareholder returns, profitability and chargeability). In contrast, start-ups are not encumbered by a short-term focus on traditional performance measures, which allows for greater risk-taking. To truly spur innovation in the Professional Services industry, employees need to be empowered to think long-term.

*Source: Managers and Machines, Unite! Accenture, 2015*
**PROFESSIONAL SERVICES: IMPERATIVES FOR THE INDUSTRY**

Inspiring leadership is critical to digital success. To help executives become effective digital leaders, we have developed an illustrative near-term action plan.¹

<table>
<thead>
<tr>
<th>Business Model Transformation</th>
<th><strong>Intelligent Automation</strong></th>
<th><strong>Digital Agility</strong></th>
<th><strong>Talent Empowerment</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Gather information on business model changes being made by direct competitors and companies in adjacent spaces and assess suitability.</td>
<td>Build a comprehensive view of labour-intensive business processes. Identify opportunities to modularize work and invest in automation and machine-learning capabilities.</td>
<td>Clarify the company’s engagement with freelancers from legal and operational standpoints. Conduct an as-is analysis of smart infrastructure used in the company. Map it against the latest infrastructure in the market. Incentivize digital adoption by pressing on with the introduction of ‘simpler’ technologies.</td>
<td>Analyse if hiring is leveraging the latest technology, and is agile enough to adapt to transforming organizational needs. Determine what investments need to be made to deliver high-quality training across the workforce. Recreate the company engagement strategy to factor in millennials’ demands.</td>
</tr>
<tr>
<td>Cultivate a market research team that works closely with data scientists to identify new needs and thus create new data-based services.</td>
<td>Cultivate data talent: develop a plan to build, buy and/or partner to improve data and automation know-how.</td>
<td>Create a ‘people first’ strategy to plan organizational transition, training employees to keep skills up-to-date.</td>
<td></td>
</tr>
<tr>
<td>Create a list of disruptors to partner with to gain synergies. To prioritize, map this against functions that the company doesn’t need to perform in house.</td>
<td>Create a ‘people first’ strategy to plan organizational transition, training employees to keep skills up-to-date.</td>
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</tr>
</tbody>
</table>

¹ This slide only includes near-term actions. Please see the Professional Services white paper for the one-year action plan.
Over the past two years, DTI research has focused on understanding the impact of digital transformation in 13 industries and drawing insights from the cross-industry themes that came out of that analysis.

We have covered five cross-industry themes. **Digital Consumption** explains how the rapidly changing expectations of digital customers are forcing enterprises to reinvent themselves. **Digital Enterprise** looks at how companies can respond by rethinking every aspect of their business. **Platform Economy** focuses on the immense impact of one type of digitally enabled business model – B2B platforms. The adoption of new digital business and operating models is having a profound impact on society, a theme we analyse in **Societal Implications**. We then introduce our quantitative analysis of the impact of digitalization on business and wider society in our final cross-industry theme, **Societal Value and Policy Imperatives**.

Our industry deep dives have covered 13 industries: **Automotive; Aviation, Travel and Tourism; Chemistry and Advanced Materials; Consumer; Electricity; Logistics; Media; Mining and Metals; Oil and Gas; Professional Services; Retail and Telecommunications**.

White papers, SlideShares, articles, an overall executive summary for the DTI project, and a library of video interviews can be found on our website.

**Key features**

- Mobile-responsive, platform-agnostic site
- 13 industry white papers
- 5 cross-industry white papers
- 13 SlideShare summaries of white papers
- 60+ video snippets and mini documentaries
- Online case study repository
- 4 animations on digital challenges
The World Economic Forum would like to acknowledge and extend its sincere gratitude to a broad community of contributors across Partner companies, technology start-ups, academicians and experts.

### Participating Organizations
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- GitHub
- Glassdoor
- Heidrick & Struggles
- Infosys
- Kaggle
- Korn Ferry
- KPMG
- Linklaters
- ManpowerGroup
- Marsh
- Marsh & McLennan Companies
- McKinsey & Company
- Mercer
- Oliver Wyman Group
- PwC
- Tata Consultancy Services
- The Boston Consulting Group
- University of Oxford
- Upwork
- Willis Towers Watson

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