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Creating a Digitally Literate Workforce
PwC as an App for That

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Introduction[1]

Much has been written about the looming shortage of skilled resources to fill technology jobs in the digital era. The US Bureau of Labor Statistics projects computer and information technology jobs to grow 13 percent from 2016-2026, faster than the average of all other occupations, with 560,000 new jobs being added during that period.[2] The European Commission predicts 756,000 unfilled jobs in the European ICT sector by 2020.[3]

Businesses are already feeling the pinch, as they shift their business operations to compete in the digital era. Sixty-seven percent of IT decision-makers responding to the 2019 Frost & Sullivan Global Survey say their company's digital transformation has been hampered by a lack of in-house technical expertise; 59% cite "hiring/retaining qualified IT staff" as a top challenge.

Outside the IT department, other business functions will also feel the effects of digital transformation. According to the 2019 Frost & Sullivan survey, IT decision-makers expect their digital transformation strategy to have a "high or critical impact" on business functions including sales (cited by 69%); marketing (67%); product management (67%); accounting & finance (64%); and executive management (63%).

For most organizations and industry observers—including Frost & Sullivan—there has been an underlying assumption that the workforce of the future will be one in which a growing cadre of IT experts will continue to be practitioners of technology change; and non-technical line-of-business (LoB) employees will be users, influencers, and/or procurers of technology.

But why should business employees remain at arm's length from technology innovations? As the employees closest to daily tasks, they are in the best position to determine which processes would benefit from automation (whether for reasons of cost, time, or quality control). As businesses become more data-centric, LOB employees are likely to know the best sources for relevant market data, and to envision the "what if" scenarios that should be played out with artificial intelligence.

Perhaps the relevant question is whether it is advisable, in the digital future, for great swaths of the workforce to remain unknowledgeable and unskilled in the key technology concepts and capabilities that underlie the business.

For assurance, advisory, and tax consulting firm PwC, a digitally literate workforce is essential for future success, both for the business and the employees. In the past two years, the company has launched and expanded a multi-faceted digital workforce transformation program that invites

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[1] In preparing this report, Stratecast conducted interviews with representatives of PricewaterhouseCoopers, including Joe Atkinson, Chief Digital Officer and Dina Brozetti, Director of Consulting. The program also was a centerpiece of discussion at the PwC Risk Summit in Boston, March 2019.

Please note that the insights and opinions expressed in this assessment are those of Stratecast, and have been developed through the Stratecast research and analysis process. These expressed insights and opinions do not necessarily reflect the views of the company executives interviewed.

[2] United States Department of Labor, Bureau of Labor Statistics, Occupational Outlook Handbook, *Computer and Information Technology Occupations*

[3] European Commission, *E-Skills and Jobs in the Digital Age*, May 10, 2017

employees from all lines of business to increase their technology skills. Supported as a strategic priority by company executives across disciplines, the internal program has achieved such rapid and stellar success that it is now being introduced as a platform for clients.

In this report, we take an in-depth look at PwC's novel Digital Accelerator program, and show how every business can benefit from the company's approach to "digital upskilling" for all.[4]

A People-Centric Firm Invests in its People

PwC is one of the world's largest professional services firms. Its business is people-intensive, with many of its 250,000 employees traveling to customer sites to perform audits, risk assessments, and tax advisory and accounting services. The company is also among the largest hirers of new talent each year—in 2018, the company hired 65,000 employees worldwide, including 27,000 recent graduates and 33,000 experienced professionals.

So, perhaps it's not surprising that the people-centric company made its employees front-and-center in its plans to digitally transform its own business.

Like most companies in recent years, PwC wanted to transform its largely customized, labor-intensive operations for the digital era by leveraging technology. But rather than adopting a business-led, top-down approach to transformation, the PwC leadership team chose a "citizen-led" approach, which invites employees closest to the processes to rethink how the work is performed. This approach would enable the company to implement change at scale—not just within the IT organization but across the entire firm.

But to be most effective, the "citizens" must have a mindset that embraces personal and company growth. And they must be familiar with technology concepts, to envision what is possible. Thus, the commitment to citizen-led digital transformation is at the heart of the PwC digital accelerator program.

By upskilling its workforce, PwC has more soldiers in the trenches to conceive and implement changes that benefit the business—such as reducing costs, improving quality, and enhancing process efficiency. However, the benefits accrue not only to the company, but also to employees themselves, who welcome new digital skills as essential to career advancement with PwC and beyond. Of course, a satisfied and engaged workforce means less employee churn and perhaps an easier time recruiting new talent—which benefits PwC.

PwC Digital Accelerator Program

PwC's Digital Accelerator Program is both a training ground for innovation, and proof of success. The multi-faceted program was devised by company leaders as a way to build digital literacy and support innovation across the workforce. While participation in the programs is voluntary, by offering different types of learning commensurate with employees' skill and interest levels, the company has the ability to upskill its entire workforce efficiently.

Components of the Digital Accelerator Program include:

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[4] Information about PwC's Digital Workforce Transformation initiative is available here.

Digital Fitness App

The Digital Fitness App, launched in 2017, is a unique mobile application that can be likened to a sophisticated physical fitness app, tracking activity and providing recommendations and metrics.

After downloading the app, employees respond to a series of questions designed to assess their level of technology fluency. Feedback and an initial digital fluency score are based not only on specific domain knowledge, but also the employee's mindset as it relates to learning and teamwork. Based on the score, the app delivers customized learning recommendations, usually in the form of short articles, podcasts or videos that employees can easily consume in their spare time. The app can be used either by individuals or by workgroups who, together, determine which digital skills to pursue.

PwC Digital Fitness App – Sample Screenshot
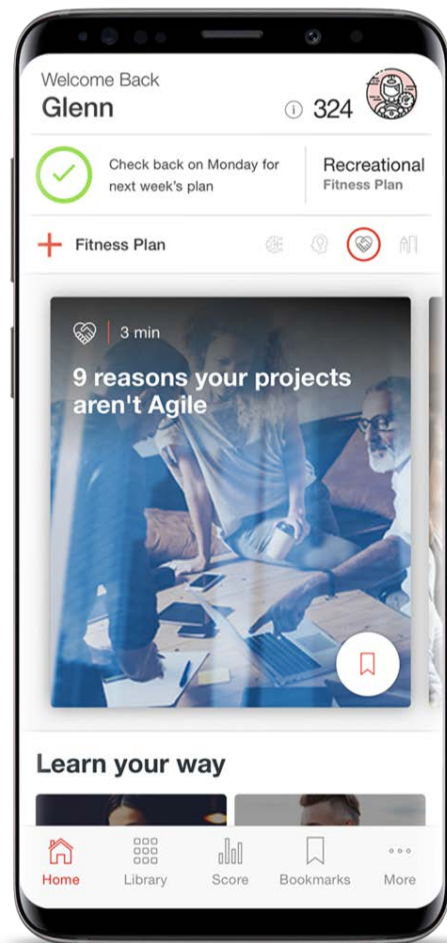
Source: PwC

Central to the popularity of the app are its gamification and social components. The more time users spend with the app, and the more they learn, the greater the recognition. Users earn badges within the app for each skill they achieve. Their digital fluency scores increase as they consume more of the

content and gain skills; the scores automatically decline if the user takes no action for a period of time. Via the social component, fitness scores and badges are shared, spurring competition as well as celebrations within and across workgroups.

Although it was designed for internal use, the PwC Digital Fitness App caught the attention of PwC clients interested in upskilling their own workforces. Recognizing the opportunity to monetize its innovative intellectual property, PwC quickly turned the app from an internal tool to a platform that can be licensed by other companies.

Digital Accelerator Program

In 2017, PwC introduced an ambitious immersive training program focused on teaching and applying technology skills. The program removes selected employees from their current roles, to rapidly deepen their skills in digital specialties, such as data, automation, and AI. Once reskilled, these "digital accelerators" return to the business to act as catalysts to disrupt and evolve the firm. Over 3,500 employees from across the company applied to participate in the launch class. For a program without a track record, the higher than expected response rate confirmed employee survey data indicating a strong interest in learning about technology. To date, over 1100 employees (42% women, 39% minority) have taken part in the program.

The two-year program comprises a combination of classroom and online courseware. Participants also participate in virtual workgroups assigned to a particular business challenge. Between training sessions, they return to their jobs, where they are encouraged to apply their newfound skills immediately.

The immersive format offers several benefits:

- it is minimally disruptive to work teams (since participants are only gone for short periods of time);

- it ensures that participants retain and practice their new skills;

- and it provides the opportunity for "quick wins" within the workgroup, as participants challenge traditional processes and pursue technology-based solutions to ongoing problems.

Participants begin the program with a three-day, on-site onboarding session where they learn core concepts such as agile development, design thinking, and data storytelling. Then, each employee signs up for a specialty curriculum (e.g., data analysis, Robotic Process Automation, Natural Language Processing, Artificial Intelligence). Based on an initial assessment, the employee is provided a customized learning path to attain new skills. The training is designed for immediate application: for example, upon returning to their jobs, employees may be able to build a simple bot to automate a task they perform daily.

Digital Lab

The Digital Lab is a collaborative platform for testing and curating citizen-developed software. As the baseline of digital knowledge grows, individuals or entire workgroups may work together on digital applications that have the potential to be launched company-wide (or even publicly). The Digital Lab offers a venue for software to be tested and reviewed, and potentially released into production.

Why PwC's Digital Upskilling Program is Successful

PwC continues to invest in its digital upskilling initiative; and the rapid scaling and increased employee participation are evidence that company objectives are being met. The program's success and popularity can be attributed to several factors:

It's a strategic priority, not a training program. PwC believes that the workforce of the future must be digitally literate—and the company has adopted "upskilling" as a mission with both company and societal benefits. Company leaders—including the chairman, Chief Data Officer, and Chief People Officer—consistently drive investment and organizational focus toward that goal. Such relentless messaging leaves little room for resistance from department managers who might otherwise balk at the disruption wrought by team members' participation in the program.

It creates a change-resilient workforce. The strong support from the top encourages employees to try something new, without fear of failure or of losing ground in their PwC careers. In doing so, the employees learn to embrace and drive change—to challenge the way things have always been done, and to create a new reality. This new mindset is central to an innovative, agile organization.

It requires no technology background. PwC's digital upskilling programs were designed to be accessible to all employees, from every department. Because the journey begins with a skills assessment, and structures an individualized learning path, employees who graduated with a degree in philosophy can benefit as much as those with a couple years of computer science. Interestingly, the company notes that adoption is higher for employees in internal services (back office) roles than for customer-facing positions. This bodes well for improving efficiency and reducing time and costs for operational tasks.

It attracts all generations. PwC discovered that the desire for digital literacy is not bounded by generation. Program aspects such as the social and gaming components were designed with the steady stream of recent graduates in mind; and in fact, the company says that many of its early, heavy adopters were interns and young associates. More recently, many seasoned employees, including partners, have signed up for the Digital Fitness App. Participants report that the customized learning path, akin to a personal trainer in the gym, enables them to comfortably learn at their own pace.

It addresses employees where they are, and where they want to be. Some employees may use the program as an opportunity to make a career change into computer programming or data science. Others may want to simplify routine tasks. Still others may just want to better understand concepts like blockchain or artificial intelligence, so they can engage clients in strategic discussions. By offering customized learning in a range of formats, PwC ensures that each employee can invest the amount of time and effort they choose.

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The Last Word

Technology is too important to be left to technologists. As businesses reinvent themselves for the digital era, the technology gap extends beyond traditional STEM (science, technology, engineering, and math) careers, across the entire business. In the future, every employee, across nearly every discipline, will require familiarity with basic technology concepts, including design thinking, data analytics, and business automation.

But as they launch their digital transformation initiatives, most organizations do not set a goal of building "digital literacy" across a diverse workforce; nor do they invest in programs to achieve it. This is where PwC stands out. The company's unique and forward-looking Digital Accelerator program offers multiple paths for employees across the company to become more proficient in technology topics. The options, which leverage gamification and social techniques, support learning as well as practical application of new skills.

In just two years since launching the initial phase of the program, PwC reports success in a number of measurements, including:

- 15% increase in consumption of digital content on the company's Learning Management System

- 5% increase in total workforce productivity in 2018, with projected improvement by another 15% due to the digital upskilling programs

Equally impressive is that, when the internal initiative caught the attention of clients, PwC quickly brought the digital fitness app and program to market, thus enabling the company to harness and monetize its innovation.

PwC leaders fully support the idea that digital literacy is essential for all employees—not just during their careers at PwC, but beyond. Other firms that are struggling with their own digital transformation should take notice.

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