

The ROI Imperative of Reskilling in Digital Transformation of Global Enterprises

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ABSTRACT The current impact of prolonged Covid-19 has resulted in rising of remote working, increased adoption of online services, and growth in automation which has accelerated the demand for organizations who are increasingly looking at various reskilling programs to help improve team's performance, build the employer's brand and help to close the growing demand gap for talent with specific related skills. Even before the current crisis, changing technologies and new ways of working were disrupting jobs and the skills employees need to do them.

According to World Bank - Future Jobs Report, technological advances and new ways of working could create 133 million new roles, driven by large-scale growth in new products and services that would allow people to work with machines and algorithms to meet the demands of demographic shifts and economic changes. It is now estimated by several research bodies that 48% to 55% of employees will work remotely after COVID-19 versus 25% 30% before the pandemic. Even before this event, the world has been undergoing significant digital transformation due to the increasing impact of technology. The corporate business models, operational workflows, and the competency needs of modern organizations are rapidly evolving. There has been an increased deployment of automation and AI to reduce workplace density.

Draup research shows that well over 77% of all job roles and functions are bound to undergo some form of disruption. As a result, companies need highly skilled labor across all functions. Our research sessions with 100 plus global HR leaders show that Enterprises not only need people developing technology but also need people who are skilled in using the technology in business workflows. The Draup term for such talent is "*operator*" talent pool. A successful enterprise should not only have top quality "*technology*" talent pool but also an effective operator talent pool. The war on talent is at an escalation point within technology enterprises with deep pockets hiring most of the available talent pool. For legacy enterprises working on digital transformation, this creates a significant disadvantage. As a result, "*reskilling*" becomes a very critical tool for the growth and sustenance of companies. Cloud and Cloud related reskilling has already become the key imperative for enterprises.

With the advancement of technology and the availability of multiple sources of online learning, individuals can acquire multiple critical skills at a very reasonable cost. Due to these observed benefits, companies have started developing internal talent intelligence platforms, creating partnerships with major online learning platforms, and implementing custom reskilling strategies. These strategies, when implemented properly, can save companies significant time, effort, and money while providing better results than traditional hiring.

One of the major challenges with the reskilling initiative is that there is limited availability of data-based analysis on the return on investment (ROI). This is largely due to the difficulty in factoring in numerous qualitative and quantitative components. The World Economic Forum has given a directional ROI of about 21% for reskilling when compared with external hiring¹. This report presents an analysis of the qualitative and quantitative (cost-benefit analysis) factors that give reskilling an upper edge over traditional downsizing of the workforce and external hiring.

DNA of a Modern Competent Engineer

Draup Researchers have observed that if an employed professional undergoes some formal training or (recommended) certification then it is a huge value addition to his/her profile. Further, this also results in increase in pay, greater career flexibility, and access to more complex roles. For any reskilling initiative, the most crucial phase is the complete breakup of the skill and competency requirements. Companies today are focusing on building a highly competent workforce that can easily be

¹ [Towards a Reskilling Revolution Industry-Led Action for the Future of Work](#)

transformed per current and future requirements. For instance, a modern and competent cloud engineer is responsible for managing an organization's cloud-based systems and processes. Software trends such as **Low Code - No Code** will allow any analytical enterprise person to develop software resulting in increased demand for **cloud-based tools**. As we all know that the DNA of a successful engineer includes several different types of skills and competencies in addition to technical skills. But several studies have also found that functional and soft skills in today's world play are critical competencies for a successful engineer.

These skills can broadly be divided into two areas: (i) Core Technical Skills, and (ii) Essential Functional Skills

As showcased in Figure 1, technical skills form the core of any engineer's skillset while functional skills support the engineer in achieving any desired outcome. Although these supporting skills are very crucial in the professional development of an engineer, their importance is often understated.

A few key skills are discussed in the following sections.

Business Domain Skills

Domain skills provide an engineer with appropriate knowledge of the various business rules and protocols within an industry. This is difficult to learn, and our research shows that engineers often take 6 months to 9 months to acquire this skill. According to Draup Research, over 70% of the Job Descriptions of Data Scientist roles shared by Fortune 500 companies put an emphasis on this skill as a preferred requirement in addition to experience with the application of core skills in the retail functional domain.

Soft Skills

Soft skills are increasingly becoming the hard skills of today's workforce. It is just not enough to be highly trained in technical skills, without developing the softer, interpersonal, and relationship-building skills that help people to communicate and collaborate effectively. Improving employees' soft skills has become a top priority for organizations due to observed benefits in terms of increased productivity, improved retention rates, and higher employee satisfaction. Soft skills also have a profound impact on the employee's career progression.

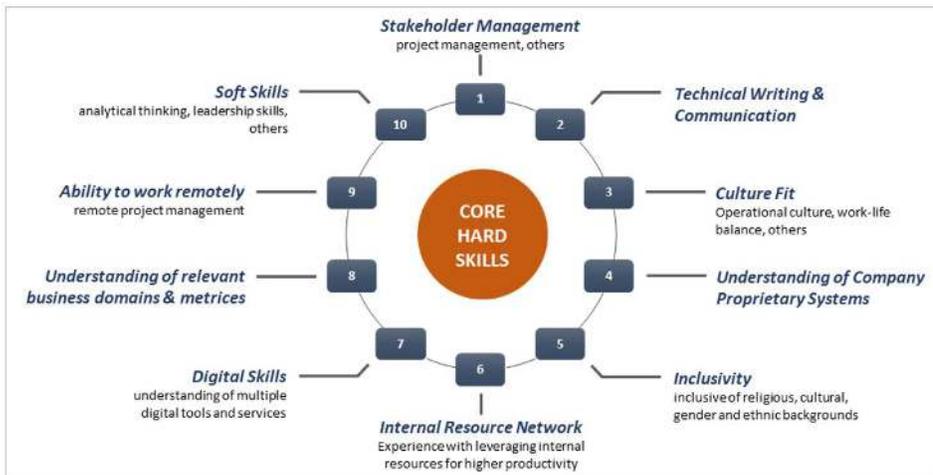


Figure 1: DNA of a successful enterprise software engineer is a cohesion of core technical skills and numerous functional, soft, cultural, and organization-specific skills.

A 2020 report on LinkedIn's Global Talent Trends report indicates that 92% of talent acquisition professionals reported that soft skills are equally or more important to hire for than hard skills. And 89% said that when a new hire does not work out, it is because they lack critical soft skills.

Learning Agility for Digital Tools

Knowledge and working experience with a variety of different digital tools, technologies, and operational workflows is another key skill for a modern-day

engineer. An individual with a multifaceted digital skillset not only helps companies save time, effort, and cost, but also enables internal teams and the company itself to evolve in real-time with the current and future technological changes. Our survey with 20 ML innovators showed that Learning Agility is the topmost rated requirement for a modern-day engineer. This is due to the rapid pace of evolution of such tools. The second most important and the need of the hour is creative and critical thinking skills.

Cultural Fit

Internal employees often hold an advantage over external hires as the cultural fit is already proven and established. These employees have already spent time understanding the internal dynamics and complexities of their organization.

Draup focus group studies with innovative engineers have shown that individuals who believe in the cultural fit within an enterprise are less likely to move to other companies and tend to be long-term employees and leaders (Draup conducted this study by analyzing engagement data and exit survey data).

Cultural fit, along with other critical skills (Figure 1), forms a key part of any competent software engineer. Unlike the technical skills which can be acquired through the accessibility of multiple online learning platforms and digital tools, these skills are very hard to acquire. Most of these skills take a significant amount of time, experience, and expertise to acquire.

Maturity of Online Learning Platforms

With significant investments from venture capital firms, online learning or E-learning systems have rapidly evolved over the last



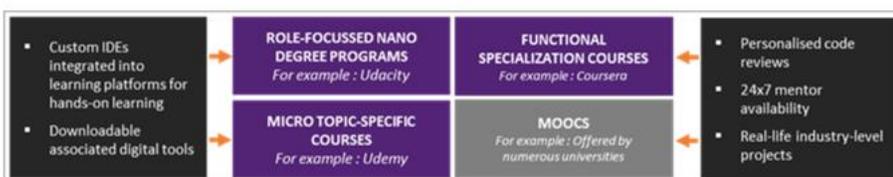
Figure 2: Different modes of delivery working together towards creating and enabling the environment of continuous learning.

few years. By using the latest technologies, online platforms are now able to provide university-level education in a variety of convenient delivery modes with a high level of flexibility and affordability.

Infrastructure for Continuous Learning

Companies and individuals are increasingly leveraging and adopting multiple delivery channels for their strengths. These channels have exponentially increased the learning

flexibility and have paved the way to the era of continuous learning. Users can now continue their learning on the go while staying updated with the latest course materials, course timelines, and course completion status in real-time. Candidate engagement is high using mobile platforms and social media platforms.



Platforms have been developed to leverage Augmented Reality technologies to create virtual-classroom environments for showcasing actual instructions in real-time. This technology, unlike traditional massive open online courses (MOOCs), helps increase

the reach of classroom programs while retaining the experience of an actual real-time environment.

Integrated System for Complete Learning

Multiple E-learning platforms are thriving while providing individuals with an integrated system of hands-on learning. These platforms bring together a variety of course options, real-time test development environments, digital toolkits, and 24x7 feedback offerings enabling a much faster and easier learning ecosystem. The available targeted course options include micro-topic specific courses which can be completed within a month, functional specialization courses which usually span across multiple months, and role-focused nano-degree programs which go on for up to 24 months.

Emergence of Modern Digital Tools

New programming languages, digital tools, and development ecosystems are constantly emerging. All these technological advances are made with a vision to replace the old tedious ways of writing code and developing software. Large software corporations such as Microsoft, Apple, and Adobe, as well as numerous start-ups are working towards creating tools that enable development tasks to be highly intuitive.

Through the usage of multiple support libraries, development & collaboration tools, debugging extensions, and other productivity tools, individuals can learn to write code and develop software applications in any programming language in a much faster, easier, and more comprehensive manner. These tools have reduced the average learning duration for software skills.

Strengths of an In-house Resource

As we have established earlier, functional supporting skills form an integral part of a successful enterprise engineer. These skills not only help the engineer in performing core tasks with higher productivity but also increase their adaptability to new environments enabling growth and professional development. Our interviews with software managers overseeing 10 or more agile team members highlight that such individuals are more efficient in an agile development environment.

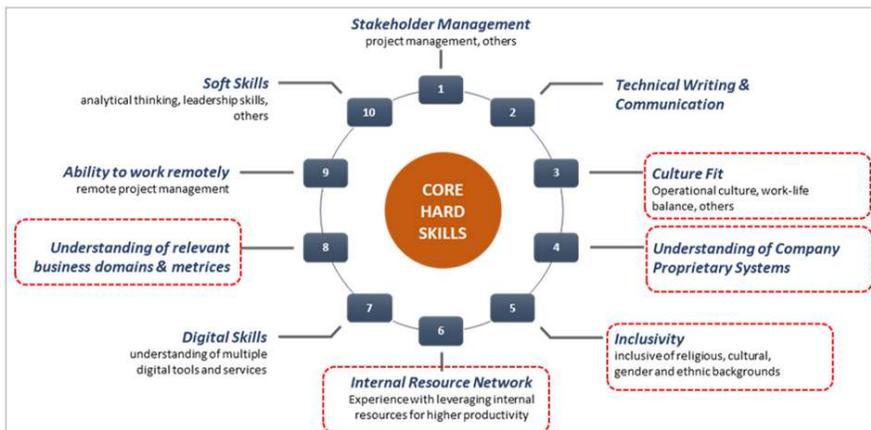


Figure 3: An integrated system for the availability of course materials, runtime environments, digital toolkits, and 24x7 support enables a complete learning experience

the resource through the company-specific experience. Such individuals provide very a valuable pool of **reskillable candidates** in any organization. Such employees only require to be trained on a few technical skills and can begin working on required tasks

within a few months. A new hire may incur productivity losses in the initial months of acquiring domain knowledge. Our research highlights, in such instances, the reskilling ROI will be around 22%. The next section on the cost-benefits model elaborates this further.

NUMEROUS SUPPORT LIBRARIES	For popular programming languages like Python, there are a host of different support libraries to help accomplish micro-tasks without having to write a single code snippet
SMART CODE COMPLETION	Context-based code-completion suggestions that help users in choosing appropriate parameters, list members, complete words and ultimately learn to code faster
REAL-TIME CODE ANALYSIS	Regular background checks of code to identify compiler errors, redundancies and code smells and suggest intelligent corrections in real-time
LIVE COLLABORATION	Collaborate with fellow programmers and learners through live sharing, editing and debugging of the code and provisions for centralised version control
A CLEAN CODE	Numerous tools and extensions available for code clean-up, navigation, reorganization, formatting, visualisation of build progress and others
SEAMLESS DEBUGGING	Easier inspection of code through faster navigation, availability of remote and offline debugging launchers, simultaneous control of the execution across multiple threads

Figure 4: A continuously evolving ecosystem of developer-friendly tools, libraries, extensions, and development environments enable faster learning and easier application of code

The key strategy here is to identify employees with desired functional & soft skills and reskill them in the required technical skills.

Cost-benefit Analysis Model

The Draup ROI model is a heuristic model assembled through primary and secondary research across the following parameters:

- Time taken by an internal employee to acquire a typical new-age technology skill
- Costs associated with the reskilling programs
- Hiring costs associated with external hiring
- Cost of ramping up an external hire in the domain and functional skills

Like in any model, there are some limitations associated with it.

- Model applicability is directional in nature
- The model boundary conditions may vary by job family
- Draup can help you customize the scenario for specific families

- The model operates on two variables – cost savings associated with hiring external talent and the productivity impact associated with external hire in learning domain and functional skills

Comparison of Cost Impact Equation:

$$\text{Cost comparison between hiring and reskilling} = \frac{(\text{Cost of Hiring} - \text{Cost of Reskilling})}{(\text{Cost of Hiring})}$$

where,

$$\text{Cost of Hiring} = (\text{Salary Cost of Hiring}) + (\text{Productivity Cost of Hiring}) + (\text{Hiring Operational Costs})$$

$$\text{Cost of Reskilling} = (\text{Salary Cost of Reskilling}) + (\text{Productivity Cost of Reskilling}) + (\text{Training Operational Costs})$$

Comparison of product:

Assumptions:

1. Position is filled, and fresh hire starts working 3 months after a job posting is made
2. The fresh hire starts working with 25% productivity and attains 100% productivity by the 9th month on the job²
3. An existing employee undergoing reskilling will take 9 months of on-the-job reskilling to attain 100% productivity.
4. The existing employee undergoes a salary correction 3 months after the end of the reskilling program

MONTH	1	2	3	4	5	6	7	8	9	10	11	12	SUM	
HIRE	Benefit (Productivity)	-	-	-	0.25P	0.40P	0.55P	0.70P	0.85P	P	P	P	P	6.75P
	Cost (Salary)	-	-	-	D	D	D	D	D	D	D	D	D	9D
RESKILL	Benefit (Productivity)	P/9	2P/9	3P/9	4P/9	5P/9	6P/9	7P/9	8P/9	9P/9	P	P	P	8P
	Cost (Salary)	d	d	d	d	d	d	d	d	d	d	d	D	11d+D

Figure 5: A well performing in-house employee who has been working within a business unit of an organization has often acquired several critical functional skills

In the above metrics:

- (Salary Cost of Hiring) and (Salary Cost of Reskilling) have been derived using the above graphs, where “d” has been derived assuming an annual salary cost of \$100,000 and “D” has been derived as 35% higher than “d”
- For (Productivity Cost of Hiring) and (Productivity Cost of Reskilling), Productivity Cost Factors have been derived from (12P – Productivity Benefit). Next, the productivity – compensation factor³ has been used to calculate Productivity Cost.
- Hiring Operational Costs have been assumed as 25% of annual salary cost⁴. The 25% overhead accounts for costs such as HR salaries, sign-on bonuses, relocation bonuses, onboarding expenses, interview productivity costs, employee referral bonuses, cost of running company websites, paid job board subscriptions, social media marketing, cost to hire staffing agencies, job fairs, on-campus college recruiting, print advertisements, trade publications, radio advertising, and other costs.
- Training Operational Costs have been assumed to be \$3,900 per employee. This has been derived from an estimate⁵ that companies spend \$1,340 per employee on a training program that lasts 34.1 hours. For a Data Scientist reskilling program, a duration of 100 hours has been assumed.

Using the above metrics, reskilling an existing employee is estimated to be 23% cheaper than hiring a new employee

² The Cost of Employee Turnover by William G. Bliss

³ <https://www.epi.org/productivity-pay-gap>

⁴ <https://www.codementor.io/blog/cost-of-hiring-full-time-and-freelance-software-developers-1nqgg7b19d>

⁵ <https://www.td.org/research-reports/2018-state-of-the-industry>