

Press contact:

Florence Lievre

Tel.: +33 1 47 54 50 71

Email: florence.lievre@capgemini.com

Organizations' software-based revenues are expected to quadruple by 2030

Generative AI is accelerating transformation towards a new software-led era: 72% of organizations plan to use it to assist with software engineering¹ in the next year.

Paris, November 20, 2023 – Software is re-defining the next era of business and will make an outsized contribution to revenues by 2030, according to Capgemini Research Institute's latest report "[The Art of Software: the new route to value creation across industries](#)". Organizations expect their software-based revenue² to grow to 29% by 2030, up from 7% in 2022. Across industries, software and software-enabled technologies such as cloud, Internet of Things (IoT), high performance networks (including 5G), and AI/ML³ are accelerating innovation and research & development (R&D) for products and services, crafting personalized customer experiences, introducing new revenue streams and business models, and reducing costs.

According to the research, organizations across all industries are re-defining themselves as software companies, transitioning away from traditional hardware-centric business. Currently, a quarter of businesses already identify as 'software' companies⁴ and an additional 32% anticipate transitioning to software company status within the next 3–5 years. Nearly 60% of organizations agree that software-driven transformation is now a boardroom topic with the majority recognizing it as a strategic capability to stay ahead of the competition, transform business models, and unlock new value for their customers, rather than a tool or an add-on.

Successful software-driven transformation is expected to deliver significant financial gains for organizations across all industries by 2030 cites the report. The telecom sector leads this trend with a predicted revenue increase of 39%, followed by automotive and banking and insurance (32% for each), and life sciences (31%).

Organizations invest one-fifth of their R&D budgets in software-driven initiatives

According to the report, nearly 18% of total R&D budgets are currently being spent on software-driven initiatives. More so, investment in software-driven transformation is expected to accelerate, with 60% of organizations across sectors planning to increase their investments in software initiatives by 9% over the next two years. Of this investment, more than one-third is focused on product or services engineering.

Generative AI: a key co-pilot to accelerate the software-led transformation

As demand for connected, intelligent products and services grows, organizations are turning to technologies like generative AI to assist engineers throughout the software development lifecycle and accelerate the delivery of

¹ Software engineers are using generative AI throughout the software development lifecycle, from business-needs analysis and writing agile user stories to assistance in writing software code, optimization, completion, testing and debugging, and monitoring.

² Software-based revenue as a share of total revenue.

³ Machine Learning (ML) is a field of study in artificial intelligence concerned with the development and study of statistical algorithms that can effectively generalize and thus perform tasks without explicit instructions.

⁴ By "being a software company" organizations mean that they are reconstructing their business models around software and, in doing so, transforming their business processes, organizational structures, and revenue models.



the software code. According to the report, generative AI tools are expected to increase the time saved for software engineering from 15% to 43% over the next three years.

The research study shows that seven in 10 organizations plan to use generative AI to complement and augment existing software engineering over the next year and expect these tools to assist in the creation of 37% of code in the coming three years. Only 28% of organizations surveyed have stated that they don't intend to use generative AI to aid software engineering in the next 12 months.

Challenges remain to fully embrace the software-led transformation

Despite the significant benefits, 68% of organizations remain at the early experimentation stages of their software-driven transformation. Only 29% of organizations have started to scale and utilize software to drive transformation, while just 5% have implemented fully scaled initiatives.

To realize the full potential of software, organizations will need to ensure interoperability and flexibility across various platforms. However, less than half (48%) of organizations have a highly scalable architecture. The report highlights that nearly 40% of organizational software investment currently focusses on maintaining legacy products. Managing long-term operating cost and performance levels becomes a critical challenge to transition from legacy to future-proofing architectures.

Talent is key to realizing success

Fostering talent is also key to realizing software-driven success. While organizations expect 39% of their employees to work on software solutions in the next three years, critical skills are in short supply, notably in areas such as cybersecurity and compliance (61%), AI, machine learning (ML), and deep learning (DL)⁵ (60% each), and data and cloud (57%).

"We have entered a new era of software-led business," says William Rozé, CEO of Capgemini Engineering and Member of Capgemini's Group Executive Board. "Organizations require a mindset shift if they're to differentiate, innovate and remain competitive. Thinking must move away from using digital technologies as an add-on, or tool to fix crinkles and smooth edges. Instead, leaders must view software as a key strategic asset which can unlock a myriad of benefits and establish competitive differentiation. But to achieve software excellence and the gains that it has to offer – organizations will need to think holistically: from striking up strategic partnerships where necessary, to defining a clear transformational roadmap to ensure the architecture that underpins it is robust, sustainable, and scalable. Generative AI poses significant potential here – with the ability to vastly accelerate all endeavors."

For more information or to download the report, visit: [Link](#)

Methodology

The Capgemini Research Institute surveyed 1,500 senior executives (director level and above) from organizations with an annual revenue of over USD 1 billion. The organizations came from a range of sectors, including automotive, consumer products, retail, aerospace and defense, life sciences, banking and insurance, telecom, energy and utilities, high-technology, industrial and capital goods, and manufacturing. They are based in 13 countries across North America, Europe, and APAC.

⁵ Deep learning (DL) is the subset of machine learning methods which are based on artificial neural networks with representation learning.



In addition, 20 in-depth interviews were conducted with industry executives from various organizations. All interviewed participants are involved in the development of software-driven transformation initiatives working across all functional areas, such as general management/strategy, innovation, software engineering, research and development, IT and data management, marketing and sales, product/service development, and customer management.

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