THE FUTURE OF TRADE

DMCC INDUSTRY DIGITALISATION INDEX 2024

2024

DECOUPLED AND RECONFIGURED

THE IMPACT OF DIGITALISATION

The DMCC Industry Digitalisation Index 2024 focuses on quantifying the changes in technology and how they have affected world trade.

This analysis not only benchmarks the current market conditions but also draws comparisons with data from previous editions of the Future of Trade reports.

This iteration of the index provides an opportunity to reassess the performance and shifting dynamics of the world's top trading hubs over time. Since our 2022 report, the landscape has been significantly altered by global events that have reshaped trade dynamics, necessitating adaptations in digitalisation and sustainability efforts.

The recent escalation of geopolitical tensions in Europe has disrupted supply chains and amplified volatility in commodity markets, contributing to a global surge in inflation and cost-of-living crises. In response, central banks worldwide have implemented substantial interest rate hikes to mitigate inflationary pressures. Although inflation has decelerated towards the end of 2023, and interest rate peaks are presumably behind us, the ongoing effects of these economic measures are expected to suppress business activity in the near term.

As we move forward, the resilience of global supply chains continues to be tested. The pandemic-induced disruptions have shifted the focus from efficiency to robustness, suggesting a potential decrease in globalisation and a pivot towards regionalisation of supply chains. This shift is further compounded by intensified geopolitical rivalries, particularly between the United States and China, and persistent conflicts in Europe and the Middle East.

Environmental, Social, and Governance (ESG) considerations have also risen to the forefront, influenced by unprecedented weather conditions and record-high global temperatures. These factors are driving the rapid adoption of green technologies and influencing trade patterns through a growing preference for nearshoring to mitigate environmental impacts and enhance supply chain resilience.

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The world is more connected than ever, and the spread of technology and data is making an ever more significant impact on GDP. Studying the ways in which businesses across different sectors can take advantage of digital progress is important to all economies as well as global trade.

The Industry Digitalisation Index (IDI) tracks businesses' digitalisation progress across sectors and spans four separate pillars of digitalisation in the processes of trade and general business activities. These four pillars are:

Upstream

This component studies how much businesses are digitalising their practices when it comes to connecting with external suppliers.

Production

This measures the extent to which businesses are digitalising their internal processes.

Downstream

This measures how much businesses are digitalising their practices when it comes to connecting with their clients - be they consumers or other businesses.

Digital infrastructure

This final component looks at businesses' progress in setting up a digital infrastructure to support the digitalisation of the production phases covered in the rest of the index. Specifically, measures of connectivity are studied, such as broadband access and the share of employees who are provided with a portable device to access the Internet.

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Data for the IDI was sourced from Eurostat, and then corroborated with the Organisation for Economic Co-operation and Development (OECD) data to ensure digitalisation is considered on a global scale. OECD e-commerce data was analysed to compare EU countries with non-EU countries.

The results of this analysis validated our assumption that the variation in digitalisation across industries is broadly consistent worldwide. Rather, digitalisation varies between countries based on their economic development. For example, although companies in the professional, scientific and technical activities industry have an above-average online presence in both Colombia and Denmark compared with other industries, Colombia has a lower share online compared with Denmark. This suggests that, although the relative variation between industries is consistent globally, the country's level of development affects its absolute level of digitalisation.

It should also be noted that the IDI has seen a significant update since its last edition in 2020. In this period, the United Kingdom officially exited the EU on 31 December 2020, following the completion of its transition period. As a result, the latest available data from Eurostat refers to the remaining 27 countries.

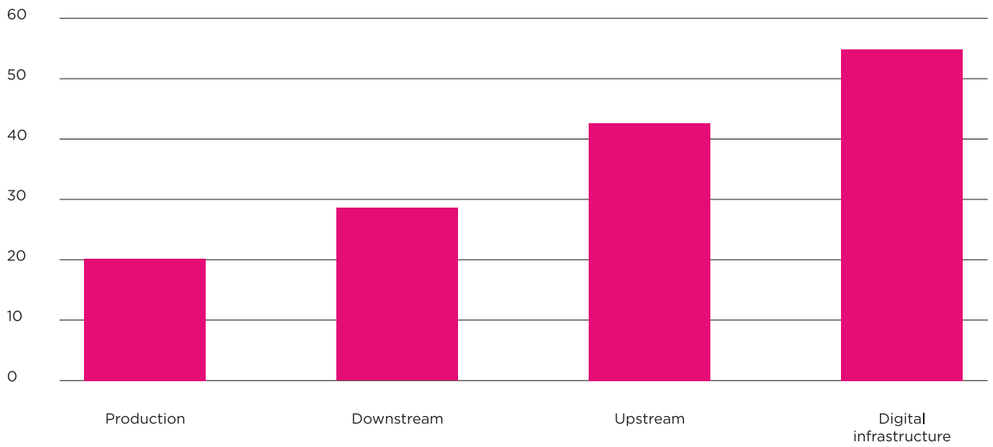
Many variables have also been updated to consider new advances, such as AI technologies and big data analytics. Including these new variables will alter the index initially, but it is important to begin to consider these new technologies as their presence increases over time. That said, together, these factors may cause difficulty when comparing the 2024 IDI against previous editions.

Results for the 2024 IDI show a significant variation between the four components of the index. Digital infrastructure is the most digitalised function across firms, scoring 56 out of 100, while production holds the lowest score at 20.

The strength in the digital infrastructure component comes from the high share of businesses reporting a lack of security-related incidents within their information and communication technology (ICT) and having a broadband download speed of at least 30 megabits per second. However, this share drops sharply from 85 percent to 13 percent when reporting a download speed of 1 gigabit per second and above, which is the speed typically recommended for larger businesses with over 30 employees.

Meanwhile, the index score for production was lowered considerably by the low share of businesses adopting new technologies. Indeed, only 8 percent and 5 percent of firms use AI technology and 3D printing, respectively. These singular factors were amongst the lowest reported across the sub-components, highlighting their infancy regarding adoption within the industry. However, we expect a substantial rise in the AI subcomponent in the coming years will lead to increases in the production index score.

Score on DMCC Industry Digitalisation Index (IDI), average across all industries, by index component (1-100, where 100 is fully digitalised), 2024 score



Source: Eurostat, OECD Cebr analysis

The upstream pillar has a score of 41 on the IDI. Upward pressures on the index come from the high percentage of businesses sending or receiving orders via computer networks. Downward pressures stem from the low share of businesses with guidelines favouring online meetings instead of business travelling at 26 percent.

The downstream pillar score is relatively weak, with a score of 29. This is mainly due to the small percentage of firms with a mobile app for clients (10 percent) and have received orders placed via an electronic data interchange message (6 percent).

At the sector level, IDI results also vary significantly. The top-scoring sector on the index is information and communication, with 50. Despite a significant change to the methodology, this has remained the case since the index began in 2016. Accommodation and food services have the second highest IDI score, which was largely boosted by the sector's uptake of e-commerce and online processes. This is of little surprise, given that systems such as online booking are commonplace within the hospitality industry.

On the other end, construction continues to be the least digitalised sector since the index began after scoring 20 out of 100. The sector is most notably poorly digitised within the downstream pillar. This can be largely attributed to a low number of online orders, which suggests the sector may still be reliant on phone calls or in-person sales.

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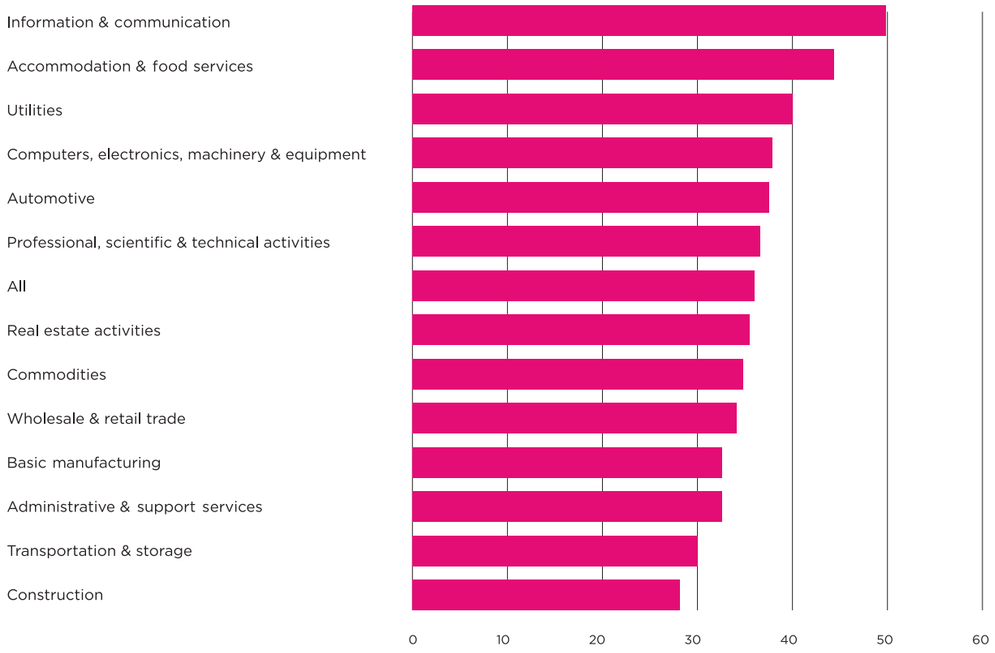
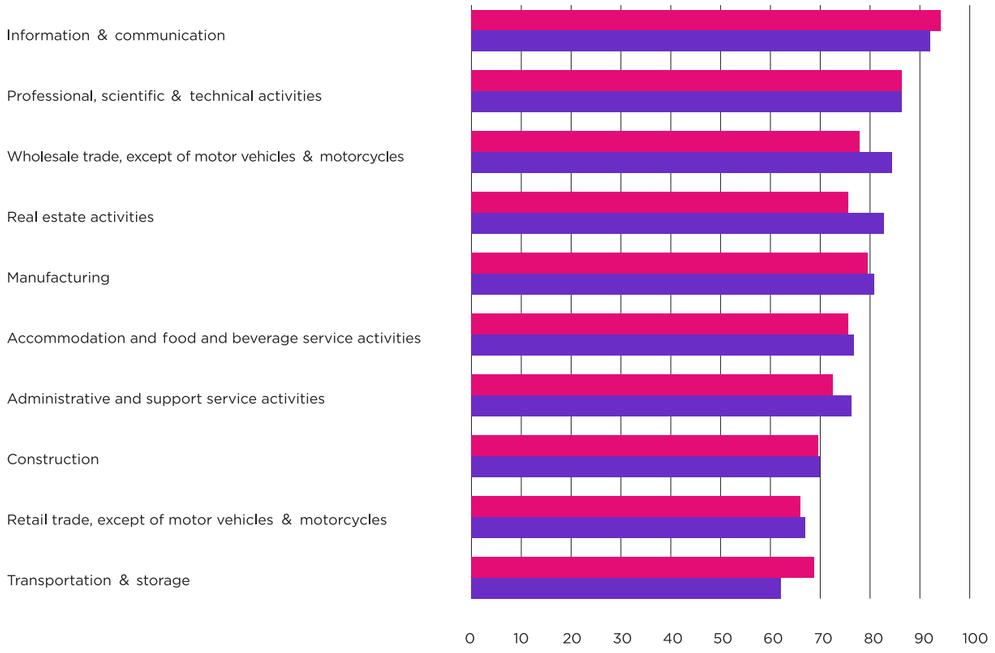
Score on DMCC/Cebr Industry Digitalisation Index (IDI), by industry group (1-100, where 100 is fully digitalised), 2024 scores



Source: Eurostat, OECD, Cebr analysis

Businesses with a website or home page, percent, 2019



Source: OECD, Cebr analysis

To put the IDI (which relies on European Union data) in a broader global context, OECD data for e-commerce was analysed, which shows that industries that are most digitalised in Europe tend to be the industries that are most digitalised in other parts of the world.

For example, the share of businesses with a website or homepage is very similar for EU and non-EU countries that report data to the OECD. Across the sectors, 76 percent of firms in non-EU OECD countries on average report having a website or homepage, compared with 77 percent of EU countries. Between the sectors, the EU significantly leads in online presence with regards to real estate. Indeed, 82 percent of firms in EU countries have a website, compared to 75 percent in non-EU countries. There is a similar point difference between EU and non-EU businesses within the wholesale trade industry, at 84 percent and 77 percent, respectively.

Although the difference in online presence is relatively small, it is clear that non-EU businesses are more likely to receive orders over computer networks across all industries. This is most notable within the construction sector, where 17 percent of non-EU businesses take computer network orders, compared with 5 percent of EU construction firms.

Despite the differences in absolute levels, the OECD data suggests that both non-EU and EU countries continue to follow similar trends regarding digitisation across sectors, with the ICT and hospitality sectors leading.

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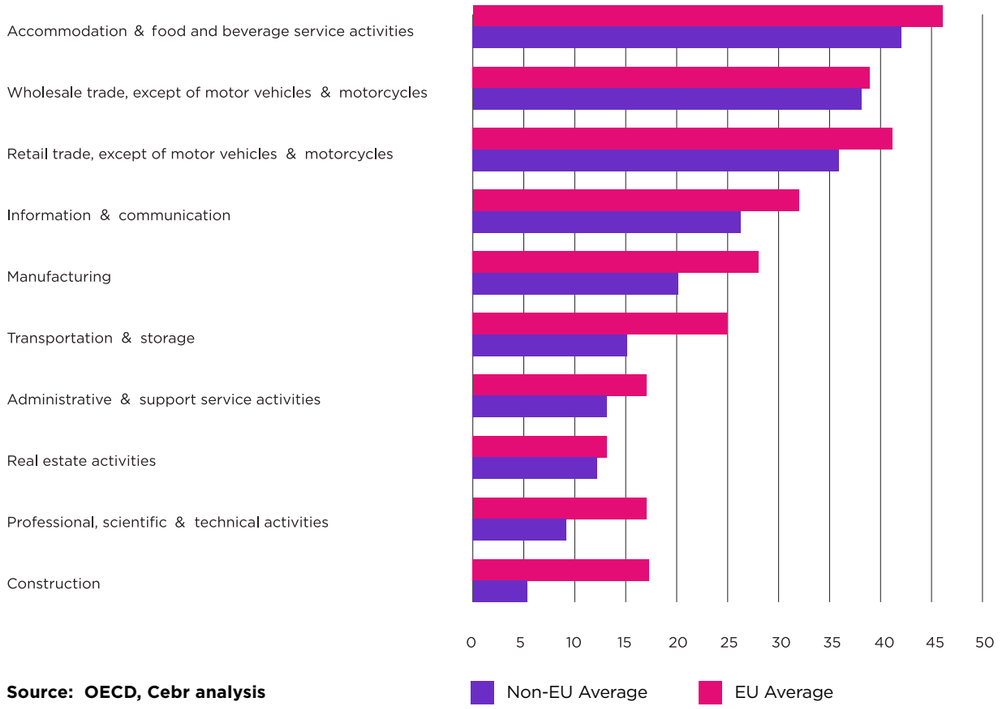
Businesses receiving orders over computer networks, percent, 2020



Source: OECD, Cebr analysis

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ASSESSING THE IMPACT OF DIGITALISATION ON TRADE

Having discussed the progress of digitalisation across sectors with the help of the IDI, we now turn to an analysis of how digitalisation and technology are helping transform global trade.

Artificial Intelligence

One technology has arguably caught global attention like no other in recent years, and that is artificial intelligence. As alluded to earlier in this section, only 8% of EU businesses reported using AI technologies in 2023. But its significant potential across sectors, including trade, indicates that there is substantial opportunity for growth. Indeed, a 2023 survey of large businesses by Cebr and Moore Global found that 77% of businesses across 12 major markets had increased investment or usage of AI in the past four years.

The advent of consumer generative AI programs, including open-source platforms, has been particularly impactful for the adoption of the technology across various industries. It has also shifted perceptions of how AI will impact the labour market, being seen more and more as a job enhancer rather than a job destroyer. This was borne out in the Cebr and Moore Global survey, where the most commonly perceived benefit of AI was productivity improvement, and the least frequently selected option was reducing headcounts.

It is also likely that the aforementioned survey data regarding AI usage is an underestimate, as many people will use AI in their day-to-day roles without realising it. Indeed, some of the most widely used computing software that has existed for decades now comes with AI algorithms used to improve existing features or create new ones.

Already, countless new software products featuring AI have been created and used for anything from profiling the personality of potential customers to web scraping and photo editing. No doubt, many more new uses for AI will be created in the coming years, further increasing the opportunities for AI adoption across all businesses.

So, how could AI support trade specifically? The foremost improvement could be in faster and improved translation services. This could reduce barriers to trade, especially for smaller firms with less resources. This could be one of a number of areas where AI can improve the customer or client experience, including real-time customer support around the clock to help resolve issues and assist through the purchasing process. For a longer-term strategy, natural language processing (NLP) enables enterprises to analyse customer feedback from sources such as social media and reviews in order to identify key areas for improvement.

AI can also be used to forecast demand and manage inventory. By inputting historical sales data, market trends, and even weather data, algorithms can optimise inventory levels and, therefore, reduce excess costs. This would improve overall supply chain efficiency across

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goods-based sectors such as retail and commodities.

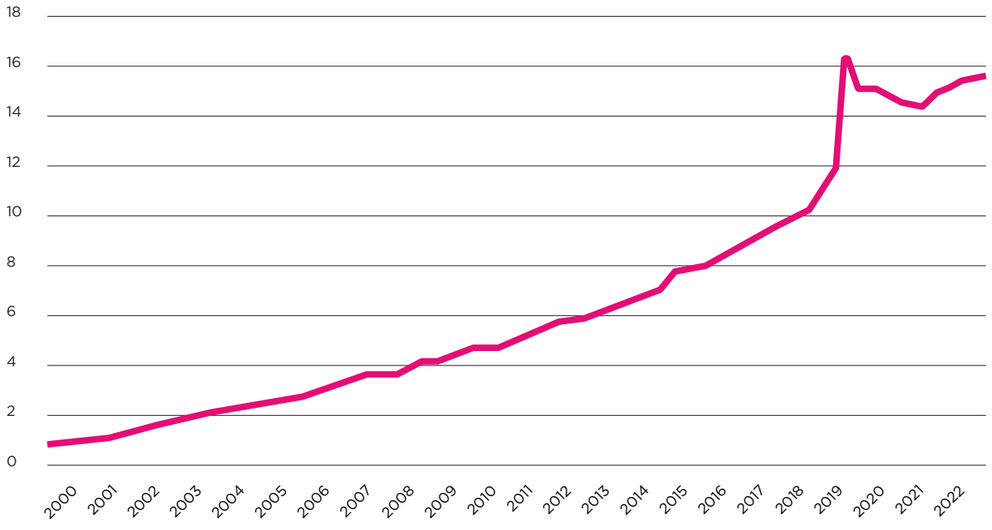
The technology can also enhance trade finance and the assessment of credit risk. Businesses in emerging markets, as well as small-to-medium enterprises, stand to benefit from streamlining the loan approval process. Algorithms could analyse data on transaction histories and credit reports to objectively assess the suitability of firms and individuals.

As the technology continues to explode, there will undoubtedly be many more benefits to trade from AI that we haven't yet considered. According to Statista, the AI market was worth $240 billion in 2023. In 2030, it is expected to reach $738 billion.

E-commerce and digital marketplaces

Digitalisation offers firms of all sizes an opportunity to achieve rapid growth. E-commerce allows access to global markets and the ability to sell directly to consumers rather than through intermediaries such as retailers. Although e-commerce is not a new technology, it continues to represent a larger and larger share of total sales across many key markets.

E-commerce as a total share of U.S. retail sales (S.A, percent)



This can be seen in the sharp rise in e-commerce as a share of U.S. retail sales, which increased by four percentage points between Q1 and Q2 2020. Interestingly, although the rate of growth in e-commerce has since slowed, it is still broadly in line with the pre-pandemic trend. This suggests that the growth potential for e-commerce has yet to reach a ceiling and will continue to grow in the long term. It is estimated that global retail sales will reach $6.4 trillion this year, which is more than double the UK's annual GDP in 2021.

There are several reasons for this surge in online sales. The main one is that during the pandemic, many consumers could only buy certain goods online at some point in time. While this is no longer the case, it no doubt accelerated consumer behaviour changes by making more people comfortable with online shopping.

The cost-of-living crisis may have accelerated online spending, as people find it easier to track prices using the internet rather than in person. This feature has become more important as people struggle financially.

Societal developments, such as the increased importance of social media marketing and drop shipping platforms, have also likely played a role. Many retailers are offering Augmented Reality (AR) try-on experiences to customers for products such as clothing and make-up. This has also been extended to product visualisation, whereby customers can use AR apps to see how furniture would look in their home without purchasing the item first.

Trade facilitation and supply chain management

New technologies can increase the efficiency of customs processing when trading across borders. One such example is electronic documentation, whereby the replacement of paper-based trade documents has led to a streamlining in customs clearance processes and a reduction in bureaucracy.

Digitalisation can also be applied to the supply chain through real-time tracking and traceability. This can be seen clearly within the logistics industry, where radio frequency identification (RFID) tags are placed on cargo to allow companies to track the movement of inventory without manual scanning. RFID tags are also placed on transportation to ensure there is visibility of movement throughout the entire supply chain. This can aid in identifying bottlenecks and optimising trade routes in the future.

RFID tags are becoming increasingly cheaper as the technology improves. Once between 10 to 20 cent per passive tag, now it is possible to purchase such tags for five cents. This has driven demand, notably within the logistics industry. However, demand has also been partially driven by increased usage from households, with popular RFID products such as the Apple Airtag coming into the market in the past three years. These factors will continue to contribute to the long-term growth of the technology; indeed, the RFID market is expected to grow from $15.8 billion in 2023 to $40.9 billion by 2032.