Connecting the Fourth Industrial Revolution

Cloud Computing

2020
Overview

The fourth industrial revolution is the current environment where disruptive technology trends such as the Internet of Things (IoT), Robotics, Artificial intelligence (AI), Future Cars/Autonomous Vehicles, Blockchain, Cloud Computing, Genomics and Social Media are changing the way we live and work.

Unlike previous industrial revolutions, these technologies are rapidly combining to create an accelerating, virtuous cycle of nearly unlimited disruption. While previous industrial revolutions were often localised, todays is interconnected and global and its impact is already visible in homes and businesses across the world.

This is a short guide to help investors understand the main sectors of the fourth industrial revolution and their features, applications, and growth potential:

- Robotics & Automation
- Future Transport
- Cloud Computing
- Cyber Security
- Genomics
- Social Media
- Blockchain
- Augmented & Virtual Reality

Cloud Computing Theme

Cloud computing refers to a wide range of computing infrastructure, platforms, security services and software which are delivered over the internet and that can be accessed remotely and on-demand.

Cloud underpins a massive amount of businesses – everything from Gmail, Netflix, Facebook, almost any app on your smartphone to services that enable large organisations to host all their data and applications, to ecommerce providers – all are reliant on the cloud to continue to operate.

Cloud has seen rapid adoption at the enterprise level as companies seek to build a robust IT infrastructure without the risks and costs of maintaining, staffing and upgrading it themselves. Instead of owning their own IT infrastructure, companies can hire or license services and applications from cloud providers.

Cloud companies are often grouped in “X-as-a-Service” categories, depending on what they provide.
Software as a Service (SaaS): Software as a Service providers host and manage the software application and underlying infrastructure and handle any maintenance, such as software upgrades and security patching, e.g. Gmail, Adobe, Netflix, Salesforce, Workday, Zoom

Platform as a Service (PaaS): Software development platforms delivered over the internet.

Infrastructure as a Service (IaaS): a way of delivering cloud computing infrastructure – servers, storage, network, and operating systems – as an on-demand service.

Cloud technology can be either public or private. Public clouds are operated by third parties such as Amazon Web Services whereas private clouds are operated by a single organisation for the benefit of their geographically diverse business. Hybrid clouds are custom combinations of the two.

Cloud Market Demand Drivers

From data storage to accounting and HR systems, website hosting or e-commerce infrastructure; cloud-based services have seen early adoption on a massive scale as they have offered:

- Significant cost savings: compared to owning, maintaining, upgrading and staffing own internal IT systems
- Greater speed and flexibility: employees can now access necessary tools and data from any location, changing how and where businesses can operate. A key feature in an age where remote working is increasing
- Reliability: cloud computing makes data backup, disaster recovery and business continuity easier and less expensive
- Productivity: Lack of on-site hardware reduces the need for IT support
- Scalability: Cloud solutions can expand and be deployed quickly to meet a company’s changing needs

We are only seeing the tip of the iceberg for cloud usage – requirements for data storage, hosting, access-anywhere applications and secure mobile services are expected to surge as billions of Internet of Things devices are connected, as emerging market internet usage grows and as remote working styles proliferate.
Data Storage  The need to store data has never been greater and has never grown faster. In 2018, it’s estimated that 2.5 Quintillion bytes of data were created every day. By 2025, this is expected to grow to a mind-shattering 483 Quintillion bytes of data every day.¹

483,000,000,000,000,000,000,000,000 bytes a day

The advent of AI, Big Data and machine learning could potentially push this number even higher. Storing this data remotely and securely is a critical challenge that cloud can address.

IoT  Up to 64 Billion Internet-of-Things devices could be connected by 2026² - smart phones, connected appliances, medical wearables, smart cars, home assistants, smart watches, internet connected home security systems and locks are examples we already see around us.

Ecommerce  Ecommerce providers rely heavily on the efficiencies, scalability and automation that cloud-based computing can bring. Websites, mobile apps, payment systems, order systems, logistics, fulfilments and many other critical services need cloud to function. It’s perhaps no surprise that two of the largest ecommerce providers, Amazon and Alibaba are also leaders in cloud infrastructure. (See below)

Growth Businesses  As cloud offers scalability, reduced costs and flexible access, it has seen rapid adoption among small and medium sized businesses, as well as by entrepreneurs in emerging markets. Businesses can now access a tremendous variety of online services at a low-cost such as mobile banking, payment systems, email, social media, HR systems, finance systems and website hosting. This is enabling them to ‘leapfrog’ traditional models and grow using secure, low-cost, modern, cloud-based solutions — often with ecommerce models.

This change is highlighted in the Flexera Cloud Market Report 2020 ³ which polled 750 organisations between 100-10,000 employees. The report found that by 2021, an estimated 70% of small and medium sized businesses data and workloads will be in the cloud – far higher than the overall average of 58%.

It is now entirely possible to create a company with no physical location, offering web-based products or services, with most of not all functions (accounting, marketing, sales, legal, management, design) taking place remotely using online tools to help the team coordinate.

In this respect cloud technology is helping to create a new type of business that floats above us invisibly, which in turn drive new demand for additional cloud services.

Remote Working

The response to COVID-19 saw a huge rise demand from companies using cloud-based solutions to help their employees effectively transition to remote working. From remote system or database access to email, videoconferencing and workflow tools, cloud has enabled many businesses (including HANetf) to continue to operate continuously and effectively throughout the crisis.

With remote working seemingly set to be a more normalised feature of tomorrow’s world, the need for cloud-based solutions is set to grow with 59% of respondents in the Frontera report saying that COVID-19 will directly increase their cloud usage.

Key Players in the Cloud Market

The main players in the provision of public cloud infrastructure are large technology and ecommerce providers; with Amazon clearly leading the way with 33% of the market share.

Growth of the Cloud Market

The strong tailwinds propelling the cloud market alongside its critical infrastructure-like role in the modern digital economy has created a great deal of investor interest in the sector. Spending on cloud already accounts for a large proportion of corporate IT budgets and this is expected to continue to increase - respondents to the Flexera survey 4 expected an average 47% rise in cloud spending this year.

Annual Cloud Spend $ % Respondents

<table>
<thead>
<tr>
<th>Annual Cloud Spend $</th>
<th>% Respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>More than $12 Million</td>
<td>20%</td>
</tr>
<tr>
<td>$2.4m - $12 Million</td>
<td>36%</td>
</tr>
<tr>
<td>$1.2 - $2.4 Million</td>
<td>18%</td>
</tr>
<tr>
<td>$600k - $1.2 Million</td>
<td>13%</td>
</tr>
</tbody>
</table>

4 https://www.flexera.com/blog/industry-trends/2020/05/trend-of-cloud-computing-2020/
Predictions for the growth of the global cloud industry show a similar trajectory with Gartner suggesting 17% revenue growth for cloud companies in 2020-2021 period. Other analysts suggest that by 2027, the cloud market could be worth as much as $927 Billion – nearly four times its current size.

**Worldwide Public Cloud Service Revenue Forecast $US bn**

For illustrative purposes only

Source: Gartner 2019

**Investing in Cloud Technology**

The high growth potential and widespread industrial, corporate and consumer adoption of cloud technologies has pushed this theme to the forefront of many investors’ minds.

Investors who see long-term opportunity in this theme can consider an allocation to The HAN-GINS Tech Megatrend Equal Weight UCITS ETF (ITEK). ITEK includes Cloud Computing as part of 8 transformational technology trends that are reshaping the world alongside Robotics & Big Data, Cyber Security, Future Cars, Genomics, Social Media, Blockchain, Augmented & Virtual Reality.

HANetf also provides a highly targeted cloud computing thematic ETF – The HAN-GINS Cloud Technology UCITS ETF (SKYY). SKYY includes the 50 largest cloud technology companies from developed and emerging markets.

Fund Details

When you trade ETFs, your capital is at risk

<table>
<thead>
<tr>
<th>EXCHANGE</th>
<th>BB CODE</th>
<th>RIC</th>
<th>ISIN</th>
<th>CURRENCY</th>
<th>INCOME</th>
</tr>
</thead>
<tbody>
<tr>
<td>London Stock Exchange</td>
<td>ITEK LN</td>
<td>ITEK</td>
<td>IE00BDLDRF700</td>
<td>USD</td>
<td>Acc</td>
</tr>
<tr>
<td>London Stock Exchange</td>
<td>ITEP LN</td>
<td>ITEP</td>
<td>IE00BDLDRF700</td>
<td>GBP</td>
<td>Acc</td>
</tr>
<tr>
<td>Borsa Italiana</td>
<td>ITEK IM</td>
<td>ITEK</td>
<td>IE00BDLDRF700</td>
<td>EUR</td>
<td>Acc</td>
</tr>
<tr>
<td>XETRA</td>
<td>T3KE GY</td>
<td>T3KE</td>
<td>DE000A2N5X0E0</td>
<td>EUR</td>
<td>Acc</td>
</tr>
<tr>
<td>SIX</td>
<td>ITEK SW</td>
<td>ITEK</td>
<td>IE00BDLDRF700</td>
<td>CHF</td>
<td>Acc</td>
</tr>
</tbody>
</table>

- ITEK Factsheet
- ITEK Video
- ITEK Fund Page

About HANetf

HANetf is an independent ETF specialist working with third-party asset managers to bring differentiated, modern and innovative ETF exposures to European investors via unique white-label ETF/ETC platform.

Founded by two of Europe’s leading ETF entrepreneurs, Hector McNeil and Nik Bienkowski, HANetf provides a complete operational, regulatory, distribution and marketing solution for asset managers who want to successfully launch and manage UCITS ETFs.

HANetf’s full products list includes:

<table>
<thead>
<tr>
<th>Name</th>
<th>TER</th>
<th>LSE $</th>
<th>LSE £</th>
<th>Borsa €</th>
<th>XETRA €</th>
<th>SIX</th>
</tr>
</thead>
<tbody>
<tr>
<td>The Emerging Markets Internet &amp; Ecommerce UCITS ETF</td>
<td>0.86%</td>
<td>EMQQ</td>
<td>EMQP</td>
<td>EMQQ</td>
<td>EMQQ</td>
<td>EMQQ</td>
</tr>
<tr>
<td>HAN-GINS Tech Megatrend Equal Weight UCITS ETF</td>
<td>0.59%</td>
<td>ITEK</td>
<td>ITEP</td>
<td>ITEK</td>
<td>T3KE</td>
<td>ITEK</td>
</tr>
<tr>
<td>HAN-GINS Cloud Technology UCITS ETF</td>
<td>0.59%</td>
<td>SKYY</td>
<td>SKYP</td>
<td>SKYY</td>
<td>SYKE</td>
<td>SKYY</td>
</tr>
<tr>
<td>HAN-GINS Indxx Medical Innovation UCITS ETF</td>
<td>0.59%</td>
<td>WELL</td>
<td>WELP</td>
<td>WELL</td>
<td>W311</td>
<td>WELL</td>
</tr>
<tr>
<td>KMEFIC FTSE Kuwait UCITS ETF</td>
<td>0.80%</td>
<td>KUW8</td>
<td>KUWP</td>
<td>KUW8</td>
<td>KUW8</td>
<td>-</td>
</tr>
<tr>
<td>The Medical Cannabis &amp; Wellness UCITS ETF</td>
<td>0.80%</td>
<td>CBDX</td>
<td>CDP</td>
<td>-</td>
<td>CDSX</td>
<td>CBDX</td>
</tr>
<tr>
<td>The Royal Mint Physical Gold ETC</td>
<td>0.22%</td>
<td>RMAU</td>
<td>RMAP</td>
<td>-</td>
<td>RMBU</td>
<td>-</td>
</tr>
<tr>
<td>BTCetc Bitcoin Exchange Traded Crypto*</td>
<td>2.00%</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>BTCE</td>
<td>-</td>
</tr>
</tbody>
</table>

*Marketed and Distributed by HANetf

For further information, please visit www.hanetf.com
Important Information

The content in this document is issued by HANetf Limited (“HANetf”), an appointed representative of Mirabella Advisers LLP, which is authorised and regulated by the Financial Conduct Authority (“FCA”). For professional clients only. Past performance is not a reliable indicator of future performance. Any historical performance included on this document may be based on back testing. Back testing is the process of evaluating an investment strategy by applying it to historical data to simulate what the performance of such strategy would have been. Back tested performance is purely hypothetical and is provided on this document solely for informational purposes. Back tested data does not represent actual performance and should not be interpreted as an indication of actual or future performance. The value of any investment may be affected by exchange rate movements.

Any decision to invest should be based on the information contained in the appropriate prospectus and after seeking independent investment, tax and legal advice. These products may not be available in your market or suitable for you. The content of this document does not constitute investment advice nor an offer for sale nor a solicitation of an offer to buy any product or make any investment. An investment in an ETF is dependent on the performance of the underlying index, less costs, but it is not expected to match that performance precisely. ETFs involve numerous risks including among others, general market risks relating to the relevant underlying index, exchange rate risks, interest rate risks, inflationary risks, liquidity risks and legal and regulatory risks.

The information contained on this document is not, and under no circumstances is to be construed as, an advertisement or any other step in furtherance of a public offering of shares in the United States or any province or territory thereof, where none of the Issuers or their products are authorised or registered for distribution and where no prospectus of any of the Issuers has been filed with any securities commission or regulatory authority. No document or information on this document should be taken, transmitted or distributed (directly or indirectly) into the United States. None of the Issuers, nor any securities issued by them, have been or will be registered under the United States Securities Act of 1933 or the Investment Company Act of 1940 or qualified under any applicable state securities statutes. The products discussed on this document are issued by HANetf ICAV.

This document may contain forward looking statements including statements regarding our belief or current expectations with regards to the performance of certain assets classes and/or sectors. Forward looking statements are subject to certain risks, uncertainties and assumptions. There can be no assurance that such statements will be accurate and actual results could differ materially from those anticipated in such statements. Therefore, readers are cautioned not to place undue reliance on these forward-looking statements. HANetf ICAV is an open-ended Irish collective asset management vehicle which is constituted as an umbrella fund with segregated liability between sub-funds and with variable capital organised under the laws of Ireland and authorised by the Central Bank of Ireland (“CBI”). Investors should read the prospectus of HANetf ICAV (“HANetf Prospectus”) before investing and should refer to the section of the HANetf Prospectus entitled ‘Risk Factors’ for further details of risks associated with an investment in the Shares.

Notice to Investors in the EEA

[Emerging Markets Internet & Ecommerce UCITS ETF], [HAN-GINS Cloud Technology UCITS ETF], [HAN-GINS Tech Megatrend Equal Weight UCITS ETF], [KMEFIC FTSE Kuwait Equity UCITS ETF], [HAN-GINS Index Healthcare Innovation UCITS ETF], [The Medical Cannabis and Wellness UCITS ETF] (the “Fund”) is a sub-fund of HANetf ICAV. HANetf ICAV is authorised by the Central Bank of Ireland as an Undertaking for Collective Investment in Transferable Securities under the European Communities (Undertakings for Collective Investment in Transferable Securities) Regulations 2011 (S.I. No. 352 of 2011), as amended. The Fund is registered for sale to investors in the EEA in Ireland, the United Kingdom, Italy, and Germany, Netherlands, Finland, Luxembourg1 and Switzerland2. Accordingly, in the EEA, the prospectus may only be distributed to, and subscriptions to the Fund accept from, investors resident in those jurisdictions. The Fund is not currently registered for sale in any other EEA Member State, although such registration may be sought in the future.

Without prejudice to the foregoing, where permitted by national law in a jurisdiction where the Fund is not registered for public offering, shares in the Fund may be offered by way of through private placement. Where private placement is relied upon this will not constitute, or form part of, any offer or invitation to the public in that jurisdiction to subscribe for or purchase shares and shall not be construed as such.

As noted above, the Fund is not eligible to be marketed to, or subscriptions accepted from, investors in the EEA, other than investors resident in the countries set out above where the Fund is registered Ireland, the United Kingdom, Italy and Germany or by way of private placement, where permitted in a given jurisdiction. Accordingly, shares in the Fund may not be marketed and neither this document nor any other information relating to the Fund (together “Relevant Communications”) distributed or made available to other investors in the EEA, unless, if permitted in the relevant jurisdiction, such other investors in the EEA have received any such Relevant Communications on the basis of an enquiry made at the investor’s own exclusive initiative.

The distribution of this marketing material and subscription to the Fund in certain jurisdictions may be restricted by law. It is the responsibility of each investor to ensure that their subscription to the Fund does not violate any applicable laws in the investor’s country of residence. Each prospective investor should check if the Fund has been registered for sale in the jurisdiction in which they are resident. The Fund shall not be liable for, and accepts no liability for, the use or misuse of this document. Please be aware that not every share class is available in all jurisdictions.

1 CBDX is not registered in Luxembourg
2 KUW8 is not registered in Switzerland