

IDC PERSPECTIVE

Six Reasons Why Blockchain Will Follow a Unique Adoption Pattern in Europe

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EXECUTIVE SNAPSHOT

FIGURE 1

Executive Snapshot: Six Reasons Why Blockchain Will Follow a Unique Adoption Pattern in Europe

This IDC Perspective highlights patterns of blockchain adoption unique to the European region. Blockchain and other distributed ledger technologies (DLTs) have a global nature as their main benefit is to generate a circle of trust that simplifies the seamless flow of physical and digital assets between autonomous parties (even with conflicting interests). Therefore, blockchain has the potential to enable cross-border and intercompany collaboration.

Key Takeaways

- **Blockchain spending in Europe started off slowly, but it is now growing faster than anywhere else.** In 2018 and 2019, the region will connect for an 81% compound annual growth rate (CAGR) through 2022 to achieve \$2.9 billion in spending.
- **Blockchain has enormous potential as the "glue" of digital ecosystems in Europe.** The complexity of the European economic model presents a massive opportunity for technologies that enable digital trust at scale, such as blockchain.
- **Europe hosts an exceptional representation of emerging vendors in the blockchain space.** The main hubs in the region are Berlin, Switzerland, London, and the Baltics.
- **Blockchain adoption in Europe will first be shaped by (and eventually reshape) data privacy regulation.**

Recommended Actions

- **Collaborate to disrupt (or be disrupted).** Working with technology and consulting partners in ecosystems and consortia allows your organization to access a wider range of skills and assets.
- **Start from the business, not the technology.** Adopt blockchain only if it represents the most efficient solution to your business problem.
- **Map the geography of regulatory acceptance and start-up hotbeds when setting up your teams.** Establish connections with the areas where the authorities have a proactive approach to innovation in the blockchain space.
- **Keep calm and blockchain on – but draw a plan for personal data in the new world.** Bear in mind privacy regulation when outlining projects that include storing personal data in an immutable system of records.

Source: IDC, 2018

SITUATION OVERVIEW

IT buyers in Europe looking at blockchain should prepare for unique adoption patterns by engaging in consortia and experimenting with smaller suppliers. Unprecedented concentrations of human capital in the form of start-up hotbeds and the heavy involvement of industries and the public sector will result in accelerated blockchain spending through 2019. At the same time, expertise in larger Europe-based IT providers is developing slower than the global average, resulting in more heavy lifting on the buyer side.

It can be argued that few technologies have as global a nature as blockchain and other DLTs. The principles behind them, the dispersed nature of the communities, and the consumer hype that cryptocurrencies still enjoy are all very much global. The same can be said for the general adoption patterns of blockchain platforms among enterprises worldwide, with proofs of concept (POCs) dominating real deployments, unclear ROI hampering adoption in many cases, and universal issues like scalability or integration on existing systems of records.

However, IDC believes some things are very different when it comes to blockchain adoption in Europe. In this report, we will summarize the six key factors that will result in a differentiated pattern for implementation of those technologies in the region:

1. Blockchain spending in Europe started off slowly, but it is now growing faster than anywhere else.
2. Consortia will play a huge role in Europe, with intense participation from blue-chip companies.
3. Supranational and national bodies have moved early in publicizing and funding blockchain projects in Europe.
4. Blockchain start-up hubs in Europe carry an unprecedented punch in the global fight for money and talent.
5. Blockchain adoption in Europe will first be shaped by (and eventually reshape) data privacy regulation.
6. Systems integrators with European roots will get tailwind from government connections and consortia but are currently behind global competitors.

In the following sections, we will expound on each statement.

Blockchain Spending in Europe Started Off Slowly, But It is Now Growing Faster Than Anywhere Else

According to the latest IDC Worldwide Semiannual Blockchain Spending Guide (July 2018), Western Europe is the second-largest investor in blockchain technologies in 2018, at around \$340 million – lagging behind the U.S. (\$640 million). However, it will be the fastest-growing region in terms of blockchain spending globally in 2018 and 2019, accounting for an 81% CAGR through 2022 to reach \$2.9 billion. The slow start is related to the concentration of activity among large spenders. IDC predicted that in 2018, half of the 200 largest European companies will test blockchain at the departmental level and one out of 10 brings those projects into production. This compares with 10% of midsize companies running POCs and a single-digit percentage in the long tail of small and medium-sized businesses (SMBs). Acceleration will be a compound result of enterprises moving to production, a wave of local start-ups driving marketing and sales activities on the back of large funding, and initiatives trickling down to midmarket customers.

Consortia Will Play a Huge Role in Europe, With Intense Participation From Blue-Chip Companies

Because of political and economic fragmentation, cross-border consortia and industry collaboration initiatives around specific use cases are the key to many industry initiatives in European blockchain.

The Enerchain project is a great example of a large interest group exploring blockchain to potentially transform a specific cross-border industry process. Launched by German specialist Ponton in May 2017, Enerchain has built and piloted a distributed marketplace for over-the-counter (OTC) trading of wholesale energy products based on the Tendermint open-source blockchain engine. By the end of 2017, an impressive consortium of over 40 companies were participating and cofunding the project. The list includes many of the regional industry heavyweights such as Axpo, Centrica, EnBW, ENGIE, Enel, E.ON, Gas Natural Fenosa, Iberdrola, Statkraft, RWE, and Uniper – making Enerchain one of the most carefully watched blockchain pilots in the energy space.

In January 2017, eight of Europe's largest banking groups – Banco Santander, Deutsche Bank, HSBC, KBC, Natixis, Rabobank, Société Générale, and UniCredit – formed the Digital Trade Chain Consortium to develop and offer a new shared cross-border trade finance platform based on IBM Blockchain (now called we.trade), targeting European SMBs. This is one of at least nine European financial services consortia looking into blockchain out of a global total of around 20. Another European industry blockchain consortium is the one comprising Belgian beverage holding AB InBev, French-owned American shipping company APL, Swiss logistics company Kuehne + Nagel, and a European customs organization. In 2018, the consortium tested the possibility of eliminating the need to (physically or digitally) exchange shipping documents, using a blockchain solution developed by Accenture to share and distribute relevant data instead.

Although only a demonstrator, the Oslo2Rome initiative is another good example of European companies banding together across borders to apply blockchain to a very specific industry issue: electric vehicle (EV) roaming. As part of the experiment, in November 2017, EV owners equipped with Ethereum-based mobility wallets travelled around Europe to test and prove the concept of a single pan-European EV charging network based on blockchain. The initiative was led by German peer-to-peer EV charging specialist MotionWerk (a blockchain spin-off of German utility incubator innogy Innovation Hub) with the help of seven utility partners across five countries.

Even when global consortia are concerned, European companies seem to have a relatively stronger appetite for participation. 25 out of 44 affiliates of the Energy Web Foundation, one of the largest and most ambitious global projects for the use of blockchain in the energy industry are European firms.

Supranational and National Bodies Have Moved Early in Publicizing and Funding Blockchain Projects in Europe

Cross-border markets are a sweet spot for blockchain. With 50 nations and a single market encompassing 32 of them, the scale of Europe's ambidextrous work to build a single economic area while maintaining diversity and state sovereignty is unmatched.

Over the past few months, European states, government institutions, industry associations, and standardization bodies have been actively building critical mass around blockchain. The biggest political step was taken in April 2018, when 23 member states established the European Blockchain Partnership, a vehicle for technical and regulatory cooperation between governments functional to the launch of blockchain applications across the EU Digital Single Market.

In February, the European Commission launched the EU Blockchain Observatory and Forum. This is a pilot project run by the Directorate General for Communications Networks, Content, and Technology (DG CONNECT) to monitor and promote the European blockchain movement, act as a knowledge hub for the technology in the region, and ultimately make recommendations to EU institutions. Overall, by April 2018, the Commission had already invested more than €80 million in blockchain-based projects, with a further €300 million to be released by 2020.

Several other regional initiatives have recently kicked off. In March 2018, standards organization CEN and electrotechnical standards committee CENELEC have launched a joint focus group on blockchain and DLTs. In June 2017, industry association Eurelectric launched an expert platform within its membership to investigate the potential of blockchain across the electricity value chain, specifically in mobility, energy trading, and flexibility. In a recent white paper, Eurelectric showed there were at least seven funding categories and 17 calls for proposals that blockchain-based projects could apply for in the context of the EU Horizon 2020 research program – another big catalyst for blockchain innovation in the region. Categories include energy, smart mobility and living, transport, next-generation internet, e-government, ehealth, and financial technology (fintech), among others.

Europe's blockchain dynamism doesn't stop at the doorsteps of its central organizations. Beyond lighter financial regulation of initial coin offerings (ICO) and tokens, several national and local governments have demonstrated a keen eye for and early direct interest in the technology. Estonia is a case in point; blockchain has been in production in Estonia since 2012 and now underpins the country's data registries across the health, judicial, legislative, security, and commercial code systems. In Sweden, blockchain is being piloted for land registry and property transactions, while the Autonomous Province of Bolzano, in Italy, has used the technology for a cross-agency citizen data registry prototype. The U.K. Department for Work and Pensions has also trialed blockchain, as have Danish, Dutch, French, and Swedish central banks.

Blockchain Start-Up Hubs in Europe Carry an Unprecedented Punch in the Global Fight for Money and Talent

IDC maintains that compared with other recent technology waves (e.g., cloud, analytics), blockchain start-ups are less dependent on large U.S.-based venture capital funds – with the result of a wider spread of start-ups across the world. A consequence of that is the unprecedented representation of European companies in the start-up and scale-up ecosystem.

Blockchain start-ups are often composed of small virtual teams collaborating across continents. In several cases, the listed headquarters do not represent where the company is most active. Looking at "hubs" or locations where talent congregates is a better way to capture hot areas. Analysis of GitHub data shows that U.K., Germany, and Russia are home to some of the most active blockchain developer countries, with London, Berlin, Paris, Moscow, Amsterdam, and Barcelona being primary European centers. When adding investment into the mix, IDC identifies four dominant hubs in the region: Berlin, Switzerland, London, and the Baltics.

The innogy Innovation Hub, part of German energy group RWE, recently listed more than 60 blockchain-related start-ups active in Berlin alone along all areas of the stack (applications, middleware, infrastructure). Some of them, such as Ethereum or IOTA, are already recognized brands.

A recent analysis by investment website OFF3R found out that three of the ten largest Independent Coin Offerings that took place in 2017 were funding Switzerland-based start-ups (Status, Polkadot, SIRIN LABS) – for more than \$400 million in aggregate.

London's fintech push boosts its position in the cryptocurrency space (e.g., Bitcoin wallet provider Blockchain), but its blockchain presence expands well beyond that with fast-growing players in nonpayment spaces such as Gospel Technology and Everledger.

The Baltics are also playing a huge role in funneling talent, partly spurred by forward-looking governments (e.g., Estonia's electronic identity rollouts) and partly by staff and experience influx from former Commonwealth of Independent States (CIS) countries. Examples include Guardtime (strong base in Estonia, incorporated in the Netherlands) and Bitfury (Latvian roots of some founders, Georgian leadership team).

IDC is now engaging directly with a small subset of those European start-ups as part of the European Research Innovation Council programs – with the goal of learning more about their journeys and ability to bring offerings forward.

Blockchain Adoption in Europe Will First be Shaped by (and Eventually Reshape) Data Privacy Regulation

Being based on the concept of immutability and the lack of a central authority, blockchain and public DLTs appear, at first glance, to clash with many of the mandates of current European data privacy regulation. IDC maintains that the General Data Protection Regulation (GDPR) principles such as the "right to be forgotten" or the definition of "data controllers" as accountable entities are at the very least challenged by distributed, immutable, and automated ledger technologies.

A recent paper by Michèle Finck, a senior research fellow at the Max Planck Institute, argues that even when "hashed" or encrypted, personal data saved in blockchains "still qualifies as personal data under EU law," since it is not "irreversibly anonymized." This means users can ask for it to be deleted and accessed as per GDPR. However, in most cases, software vendors active in the area simply are not building mechanisms to do that.

This could become a serious hurdle. Based on analysis in our Worldwide Semiannual Blockchain Spending Guide (2H17), IDC estimates that use cases involving high or medium levels of manipulation of personal data account for 70% of blockchain spending in Western Europe in 2018. However, this does not necessarily mean that personal data needs to be stored on the blockchain, but it does require savviness and planning in how to handle and differentiate datasets.

On the flip side, blockchain's ability to automate logging and make all changes to a dataset auditable, as well as the disintermediation from central data owners, can act as boosters for GDPR principles. There are even start-ups (e.g., Berlin-based Jolocom) looking to leverage the identity management features of blockchain to guarantee private data control to users.

IDC believes the tension between the two poles will remain and result in data-conscious blockchain software development and implementation practices in Europe over the next two to three years. In the longer term – if the technology goes mainstream – the new frame of distributed ledgers would eventually lead to remolding privacy concepts in European legislation.

System Integrators With European Roots Will Get Tailwind From Government Connections and Consortia, But are Currently Behind Global Competitors

Many blockchain projects require services providers to define business purpose and logic behind smart contracts, perform the actual design and implementation, and, in some cases, become the neutral monitor that verifies and manages the blockchain. When the project involves consortia, the role of a service provider is especially critical in creating the business model.

IDC is observing that all large and medium-sized services providers active in Europe with a broad offering (full-service) are investing in blockchain. This includes Capgemini, Atos, Sopra Steria, BT Global Services, and T-Systems, as well as consulting companies. However, we find that they have not made their marks on the European market development to the same extent as their global competitors.

Only two European-headquartered players (Capgemini and Atos) are in top 10 in terms of service provider activity in blockchain in Europe. In a recent analysis of more than 40 U.K.-headquartered and -owned SIs and managed service providers (from Capita, Computacenter, and Daisy Group to smaller infrastructure providers), not one mentioned blockchain capabilities on their websites or annual reports. Most of the trials and proofs of concept we see mentioned in the press involve IBM, Accenture, or Deloitte. TCS is another core player in the field in Europe.

Given how nascent the market is at the moment, this could easily change when users are ready to invest and move to production implementations. European service providers are in position to scale their activities and have trial experience to start from. Given regulations, privacy aspects, the prominent role of European industrial giants in consortia, and the heavy involvement of governments in this space, we can assume tailwinds for European players in Europe in the future.

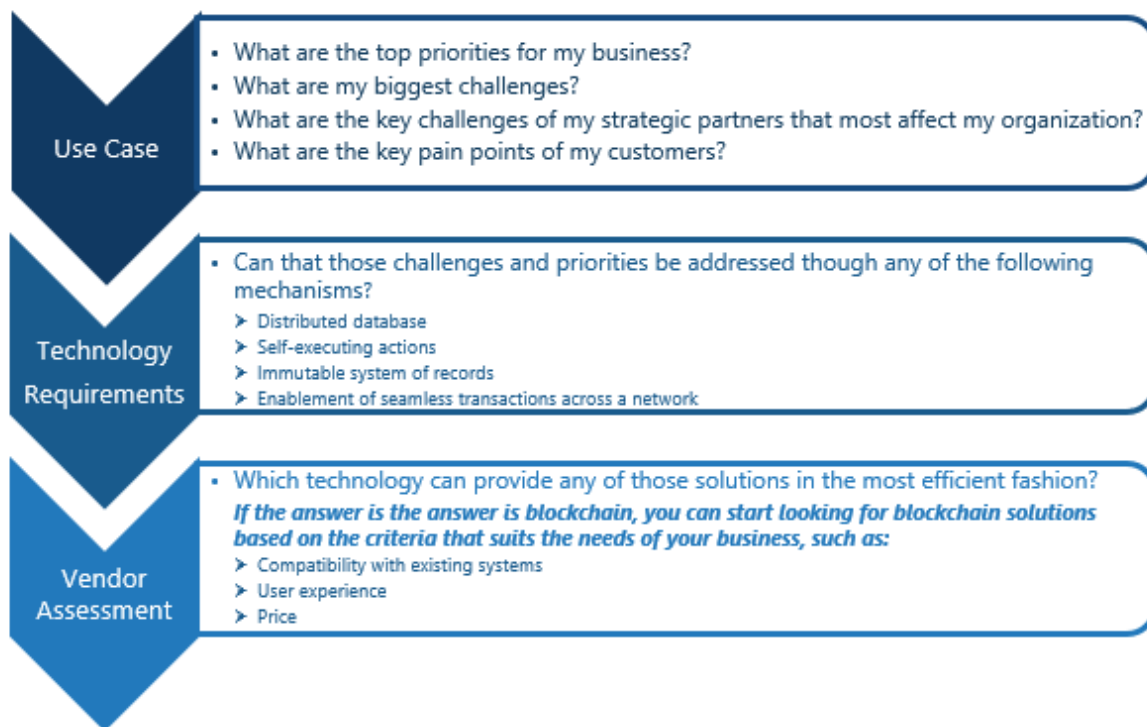
ADVICE FOR THE TECHNOLOGY BUYER

While more than 50% of the largest 200 IT buyers in Europe are experimenting with blockchain in 2018, less than 10% are bringing those projects into production. These growing pains might turn into permanent impairment if buyers don't take the correct strategic approach. IDC has following recommendations to ensure success:

- **Collaborate to disrupt (or be disrupted).** Building the right ecosystem can make all the difference between getting ideas to market first and being displaced. Blockchain takes this to the extreme. IDC recommends approaching the technology by means of standard- or use-case-driven consortia and incubation initiatives. Consortia provide a critical mass of funding for quicker development and cheaper failure. Incubators help keep critical resources within reach in a world where competition for fresh digital skills is fierce. Because blockchain sits at the convergence of disparate disciplines such as game theory, cryptography, networking, and economics, talent is especially hard to come by. By making blockchain part of their incubation strategies, companies can keep this talent within their gravitational pull.
- **Start from the business, not the technology.** Many have called blockchain a "solution in search of a problem." Co-innovation initiatives should have a technology-neutral, use-case, and process/customer-driven approach, aiming to solve business issues while lowering entry barriers to technology for all stakeholders. IDC believes that instead of looking for opportunities to adopt emerging technologies such as blockchain, business leaders should focus all of their technology investment decisions on determining use cases that address business problems. Nonetheless, the hype around blockchain distracts attention from this objective. IDC believes a simple way to address that is by asking different questions that will lead the buyer to find a solution that is fit for purpose. Figure 2 below exemplifies a good process.

FIGURE 2

Conceptual Flow from Use Case to Vendor Assessment



Source: IDC, 2018

- **Map the geography of regulatory acceptance and start-up hotbeds when setting up your teams.** Some European countries have shown great regulatory acceptance of blockchain and a keen eye for the technology. Some countries, such as Estonia, have placed blockchain at the center of the world's most ambitious project in digital statecraft. Others, such as Sweden, have provided regulatory sandboxes and are ready to move into production. This will impact projects in many verticals. Similarly, having a geographical proximity to one or more "hotbeds" will enable your teams to mingle with innovators in the space.
- **Keep calm and blockchain on – but draw a plan for personal data in the new world.** GDPR and blockchain/DLTs are railroads bound to intersect. With data protection and privacy being at the top of European institutions agendas, there is a stronger sense of urgency to find solutions here than elsewhere in the world. Based on the status of discussion in European institutions, IDC does not expect any regulatory framework around personal data specific to distributed ledgers for at least 36 months, although the European Data Protection Board (EDPB) is likely to issue guidance during this period. This means innovation should continue, but with an eye on data protection by design and default, as you will need to be smart about how personal data is handled. Sandboxing of personal data outside of public blockchain repositories will be the minimum, but there are more advanced techniques such as splitting data attributes in different ledgers that are being tested.

LEARN MORE

Related Research

- *Blockchain: Boom or Bust? IDC's European Blockchain Webcast Presentation* (IDC #EMEA43588218, March 2018)
- *Western European Blockchain Spending Forecast, 2017-2021* (IDC #EMEA43586618, March 2018)

Synopsis

This IDC Perspective highlights six patterns of blockchain adoption that are unique to the European region and provide guidance for technology buyers that are considering investing in this technology.

"Blockchain and distributed ledger technologies have a global nature, as their main objective is to facilitate the exchange of digital and physical assets among third parties. Nonetheless, the complexity of the European region generates a stronger need for cross-border and cross-company collaboration. The collaborative approach, data privacy rules, and the vibrant start-up ecosystems are poised to shape the blockchain space in Europe and make it much different from other regions," said Giorgio Nebuloni, research director, IDC European Infrastructure.

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