THE SKY’S THE LIMIT

The preserve of banking and finance for the last decade, blockchain technology is now being adopted by organisations in all sectors. FM’s Nick Huber reports on how aeronautical giant Airbus could take the technology in pioneering new directions.
You’ve already heard or read the sales pitch on blockchain. It’s one of the most important new technologies, with the potential to transform how we do business online and are governed, experts and technology suppliers claim. Yet blockchain – a digital ledger of transactions, agreements, or contracts that is time-stamped and virtually tamper-proof – is still more discussed than used by big companies.

Bitcoin, the best-known electronic cryptocurrency, uses blockchain technology. And some of the world’s largest banks are co-operating to develop blockchain technology in the hope that it will deliver efficiency gains in areas such as cross-border payments, securities trading, and regulatory compliance. But we still know very little about how large companies plan to use the technology. What are the potential benefits and risks? These are all reasons why a blockchain project at Airbus is of interest for companies of all sizes and in all industries.

Why is Airbus considering blockchain?
Airbus is a big and complex business. Its revenue in 2016 was $67 billion (£52 billion). It makes jumbo jets, helicopters, and spacecraft. It has about 134,000 employees and 12,000 “direct” suppliers. It has aircraft and helicopter final assembly lines in Asia, Europe, and the Americas.

Airbus began to research blockchain technology about 18 months ago and had an internal workshop to identify possible ways finance, manufacturing, IT, procurement, and other parts of the business could use it.

“We benchmarked Airbus against

**BLOCKCHAIN EXPLAINED**

A blockchain is a digital database for recording transactions – for example, cryptocurrency (eg, bitcoin), property titles, identities, and contracts.

All parties in the transaction can see the ledger. Each transaction is recorded as a block in a chain, after everyone involved agrees it has happened (when certain previously agreed conditions have been met).

All transactions are encrypted. Experts say that this makes blockchain records tamper-proof because it’s so hard to change information about a transaction after it has been completed.
competition’s use of blockchain, for example, against mainstream financial institutions and the banks,” Toyota says.

Last December, Toyota discussed the potential use of blockchain at an Airbus conference for its finance staff. “Finance is obviously a key customer for using blockchain, but so is engineering, manufacturing, and procurement,” he says.

Airbus isn’t using blockchain yet. The project is still at the research and development phase. There are no deadlines for when Airbus wants to start using blockchain, but the team already has ideas for how its finance staff and other departments could use the technology.

One thing is clear, though, says Toyota. If Airbus does use blockchain, it will be externally – for example, for transactions with suppliers – rather than for internal transactions between different parts of the company.

One option is using blockchain for remittance – for faster payments to suppliers, Toyota says. “Our research basically concludes that blockchain doesn’t make sense for internal applications [including finance software] for transactions within Airbus. We have come to the conclusion that the centralised database actually performs better at providing faster payments to suppliers than a distributed database system, which blockchain is a part of.”

Airbus is also evaluating whether blockchain could be used for financial reporting, transactions, understanding costs, improving business processes, tightening data security, and helping the company comply with various financial and other regulations.

“We’re intrigued and interested by the technology in terms of trust, security, and speed and also eventually using [our expertise in blockchain] to sell consultancy services to other companies,” Balducchi says. “We’re in the very early stages of trying to understand what blockchain could do [for finance and the wider Airbus business].”

Finance and IT departments are working particularly closely, he adds. “Finance functions in Airbus are looking at [if] how to use digital technology, including blockchain, to improve processes. Blockchain could add value by reducing the cost of some of our transactions, but we don’t yet know enough about the technology to say for sure.”

**A test for adoption**

This uncertainty about the technology has prompted Airbus to create a five-point test for adoption of blockchain technology. Any new application must pass three or more before Airbus will use it:

- **High cost of trust** – Is Airbus paying a lot more than necessary to intermediaries to confirm transactions?
- **Slow processes** – Are current systems slow? Can they be speeded up by blockchain?
- **Compliance** – How can Airbus comply with regulations faster and cheaper, and create a digital trail of records that can’t be tampered with and that regulators could view directly?
- **High overhead costs** – Can Airbus reduce its data-reconciliation costs through blockchain?
- **Multiple parties** – Would Airbus have to share data with multiple parties to use blockchain?

With that test complete, the first practical use of blockchain by Airbus may be for checking the qualifications of airline pilots.

Air traffic will double in the next 20 years, Airbus says.

To meet the demand, the aviation industry must train more than 500,000 pilots. Currently, when pilot training certificates are issued, there’s no universal system in which every pilot’s data and qualifications...
ACCOUNTING FOR BLOCKCHAIN

Audits, supplier payments, and regulatory compliance. All these tasks could in the future be automated, experts predict, although the most complicated operations may take a decade to fully catch on.

“Blockchain technology may represent the next step for accounting,” accounting firm Deloitte said in a 2016 report on blockchain, *Blockchain Technology: A Game-Changer in Accounting?*. Instead of keeping separate records based on transaction receipts, companies can write their transactions directly into a joint register, creating an interlocking system of accounting records, the report added.

Since all entries are distributed and cryptographically sealed, falsifying or destroying them to conceal activity is practically impossible. It’s like the transaction being verified by a notary – only in an electronic way.

Companies could benefit in many ways. Standardisation could allow auditors to verify a large portion of the most important data behind the financial statements automatically.

Audits could be cheaper and quicker, saving companies money and allowing auditors (and companies’ finance staff) to spend less time reconciling transactions and more time predicting future risks to the business, analysing a company’s performance, and thinking of ways to improve it.

Blockchain can be gradually integrated with typical accounting procedures, starting from securing the integrity of records to completely traceable audit trails, Deloitte’s report said. The technology could also enable contracts to be enacted after certain conditions are met.

“Think of an invoice paying for itself after checking that delivered goods have been received according to specifications, and sufficient funds are available on the company’s bank account,” the report added.

For finance departments, the biggest benefits of using blockchain (such as algorithm-driven decision-making in the prevention of money laundering and in complex financial transactions that involve many parties) may be a decade away or more, according to an article in the *Harvard Business Review*, “The Truth About Blockchain”, by Marco Iansiti and Karim R. Lakhani, in January-February 2017.

As blockchain becomes more common in business, the different departments in a business (finance, IT, procurement, etc.) will probably develop their own applications of blockchain.

They may use cloud-based blockchain services from startups and large platforms like Amazon and Microsoft if they don’t have the time, money, or expertise to develop their own technology.