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Opportunities for blockchain in loyalty

There has been an incredible amount of discussion about blockchain, especially its technical attributes. However, a list of technical capabilities is rarely useful in helping loyalty professionals assess how technology can be the solution for their specific business challenges and opportunities. In this paper, we look at the key blockchain concepts and issues that loyalty professionals need to understand to make these assessments for their business.

Considering the main functional areas of blockchain technology makes it easier to identify where it might be applied successfully to the loyalty business. There are three key functional lenses through which to consider blockchain.

Currency lens

Most people rightly view blockchain as a solution for a safe universal currency. There are some serious implications of using such digital currency, discussed later in this paper, but blockchain should definitely be top of your list if your business challenge involves a currency.

Shared database lens

Blockchain not only stores data, but gives every participant full visibility of all of the data and any changes made. It also gives every participant an opportunity to reject invalid changes to the data and ensures that their database is in sync with everyone else.

As we will see later, a wide variety of data can be stored on blockchain.

If auditable, open and secure data movement is critical for your business, blockchain may be an option.

Disintermediation lens

Blockchain has been touted as a technology that removes the need for 'trusted' intermediaries.

As most loyalty businesses work with multiple partners that record different aspects of a transaction which eventually need to be reconciled, potentially involving third-parties, blockchain should be a consideration.

Many people use the words cryptocurrencies and blockchain interchangeably. Whilst Bitcoin was both the first blockchain platform AND the first cryptocurrency, "blockchain" is a term to define a decentralized, distributed ledger for recording transactions and there are now many different blockchain platforms. Ethereum and Bitcoin are the most widely known, along with their respective cryptocurrencies: Ether and Bitcoin. In the loyalty space, Ethereum currently is the platform of choice for most initiatives.

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Current loyalty programmes using blockchain technology

Over the last couple of years, several blockchain-based loyalty programmes have sprung up. These programmes have raised millions through the Initial Coin Offerings (ICO) so it is unwise not to take notice of these programmes and their notion of customer loyalty.

A blockchain loyalty startup floats a new loyalty token* and raises money through the ICO

Before and during the ICO, prospective investors and participating brands purchase the tokens at a discounted rate

After the ICO, the tokens get listed on leading cryptocurrency exchanges where investors & brands can buy or sell at the prevailing market rates

Brands reward the customers by issuing tokens

Brands may also accept tokens as payment. These must be accepted at prevailing market value

Customers are free to spend their tokens with any brand or cash out by selling on the exchange

*tokens = loyalty currency

Outwardly, these types of programme look similar to traditional coalition programmes. Both have a universal loyalty currency that participating brands issue as a reward and accept as a form of payment. But on closer inspection, they are very different.

These blockchain loyalty programmes pose three challenges – functional, market dynamics and technological – which should be reviewed against the key business objectives of a) brand authenticity, b) stimulation of repeat purchases and c) creation of best-in-class customer experiences.

Lately, regulators have started cracking down on fraudulent ICOs which has slowed ICO activity in the market. However, cryptocurrency start-ups are coming up with new ways to raise investment like Security Token Offering (STO) and Initial Exchange Offering (IEO). It is not in the scope of this paper to discuss pros and cons of these methods. Our observations and conclusions around blockchain loyalty start-ups remain unchanged irrespective of whether the investment is raised through ICO, STO or IEO route.

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Functionality

Universal earn & burn

As in a traditional coalition programme, the blockchain loyalty currency earned with one brand can be spent with any other brand participating in the programme. In fact, this is something that has proved problematic for coalitions when earn and burn proves to be unequal. Moving to a cryptocurrency-based coalition does not mitigate this. Successful coalitions carefully choose the brands that they think are the best fit for their programme both in terms of value and benefit to their customers, without overt dilution to their own brand (e.g. no two supermarkets in the same programme). However, to successfully launch a new coalition loyalty currency requires these companies to focus on volume and be rather indiscriminate about participating brands, to a point where there will be competition between participants.

However, if you already have a successful community of partners, or are simply transitioning your current coalition currency to a cryptocurrency, blockchain may work for you provided the other challenges we discuss in this paper do not apply.

Ability to use rewards instantly

Key to loyalty programme success is a smarter, seamless experience for the customer. However, unless you can spend your cryptocurrency directly, the only way to use your rewards is to convert them to cash. If your customers are most motivated by a cashback programme, there are a number of options already available. Converting loyalty cryptocurrency to cash is anything but a better experience as they will have to be sold on an exchange first to release the money.

It is of course possible for these programmes to add redemption partners. However, we believe that the challenges around market dynamics, which are discussed in the following section, are going to make it difficult to acquire enough redemption partners.

Some founders of blockchain loyalty programmes note that members may treat their rewards as an investment into cryptocurrency and as such will wait for the price of the currency to go up before they cash out. This assumes that the price of the token will go up. Of course, this may not always be true. Brands will see fluctuating pricing as a negative factor as it affects their ability to plan and fund the programme effectively, and creates accounting and valuation headaches.

Upfront investment

Today's loyalty programmes can issue unlimited amounts of loyalty currency without any cash leaving their bank accounts. With blockchain loyalty programmes, brands need to purchase loyalty currency before it can be issued. This upfront investment can be significant for bigger brands given their large and active customer bases.

Smaller brands with a smaller and less active base may find a blockchain loyalty programme initially more attractive. However, it would be wise to model likely growth before committing to ensure that the brands joining will bring enough volume to the programme to make it successful, but equally, won't be sitting on too much pre-purchased currency.

Flexibility to opt out

Unless otherwise agreed, a brand is able to opt out of the programme at any time. While good for brands who want to trial out a blockchain loyalty programme without incurring huge capital investment, it illustrates a common coalition challenge – lack of control. The brand mix may be right when you join, but there's no guarantee that it will remain so.

Market dynamics

Liquidity

Cryptocurrencies, including Bitcoin, face liquidity issues at times. Being able to exchange it for cash in a matter of hours rather than minutes is still difficult. So, brands either have to purchase loyalty currency when it is available and hope that it holds its value or find themselves without enough, resulting in a negative customer experience. For the brands accepting it as a form of payment, lack of liquidity makes it an undesirable asset. Lack of liquidity is likely to be the biggest challenge blockchain loyalty programmes face until eventual maturity.

Unpredictable costs

Issuing and/or accepting currency relies on transactions being processed on the underlying blockchain, which, if it is public, charges fees. These fees are set by businesses who carry out the transactions and are not fixed. Brands who want a quick turnaround for their customers are likely to face continually mounting fees to keep the customer experience optimal.

Regulation, tax implications and accounting treatment

ICOs are still very new, and so lack established regulation – China had completely banned them in 2017 while various government departments in the United States have started shutting them down. The SEC in the US treats tokens as securities which come with very strict regulatory requirements.

There also is a lack of legislative clarity; it is unclear if buying or selling loyalty tokens outside of the ICO period is a purchase/sale of digital goods, another currency or a service. Each triggers different regulations, governances and processes. Lack of clarity on these aspects will make it challenging and potentially expensive for brands to utilise an existing blockchain's cryptocurrency. Besides the regulation, there is also a general lack of clarity on tax and accounting treatment.

Note: At the time of this writing, the highest transaction fee one could pay to process a transaction on Ethereum public blockchain was approximately 10 cents.

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Technology

Every blockchain loyalty programme that we looked at relies on Ethereum, the public blockchain, as its foundation. This is a critical design decision that has an impact on scalability and on privacy.

Scalability

Every business on Ethereum competes to get a share of the maximum number of transactions it can run per second (currently 15). Unless they pay unusually high fees, blockchain loyalty programmes are going to get a fraction of the overall Ethereum Transactions Per Second.

Privacy and the value of data

Besides scalability, privacy is another significant issue with any public blockchain. All data* on the Ethereum public blockchain is visible to anyone, even non-participants. This means that not only a brand's loyalty currency balance but its reward frequency could be easily calculated by competitors.

For the consumer, there's another challenge: they want to trust their favourite brands to safeguard their data and use it to create the personalised experiences they have come to expect.

*The recently introduced Layer 2 Protocols have not been reviewed for this paper.

The right place for blockchain in the loyalty industry

Given the challenges facing blockchain, should loyalty experts ignore blockchain? We think not. At Collinson, we believe that there is always room for innovation and blockchain technology opens up new possibilities not to be missed.

The loyalty industry is constantly changing. Everything about loyalty is being challenged – from customer experience and value perception to how well the underlying current technology enables it. Customers have come to expect their loyalty programmes to be personalised, instant and experiential. Many programmes use a rich and active partner ecosystem to meet these expectations. The right partners not only give customers more choice, but the brands a richer set of customer data.

The complexity of partnership

However, setting up and managing the partnerships can be a slow and expensive process. Blockchain is the ideal way to address a number of these issues.

Many partnerships, as seen below, are now set up in a way that involves complex technological infrastructure due to inefficient integrations and lack of automation. Many partnerships still rely on manual reconciliations. They also tend to involve intermediaries who safeguard confidentiality but add to complexity and costs. Furthermore, and most importantly, as user identity changes across this complex technological infrastructure, customer data gets isolated and goes out of sync, affecting the brand's ability to truly personalise the customer experience.
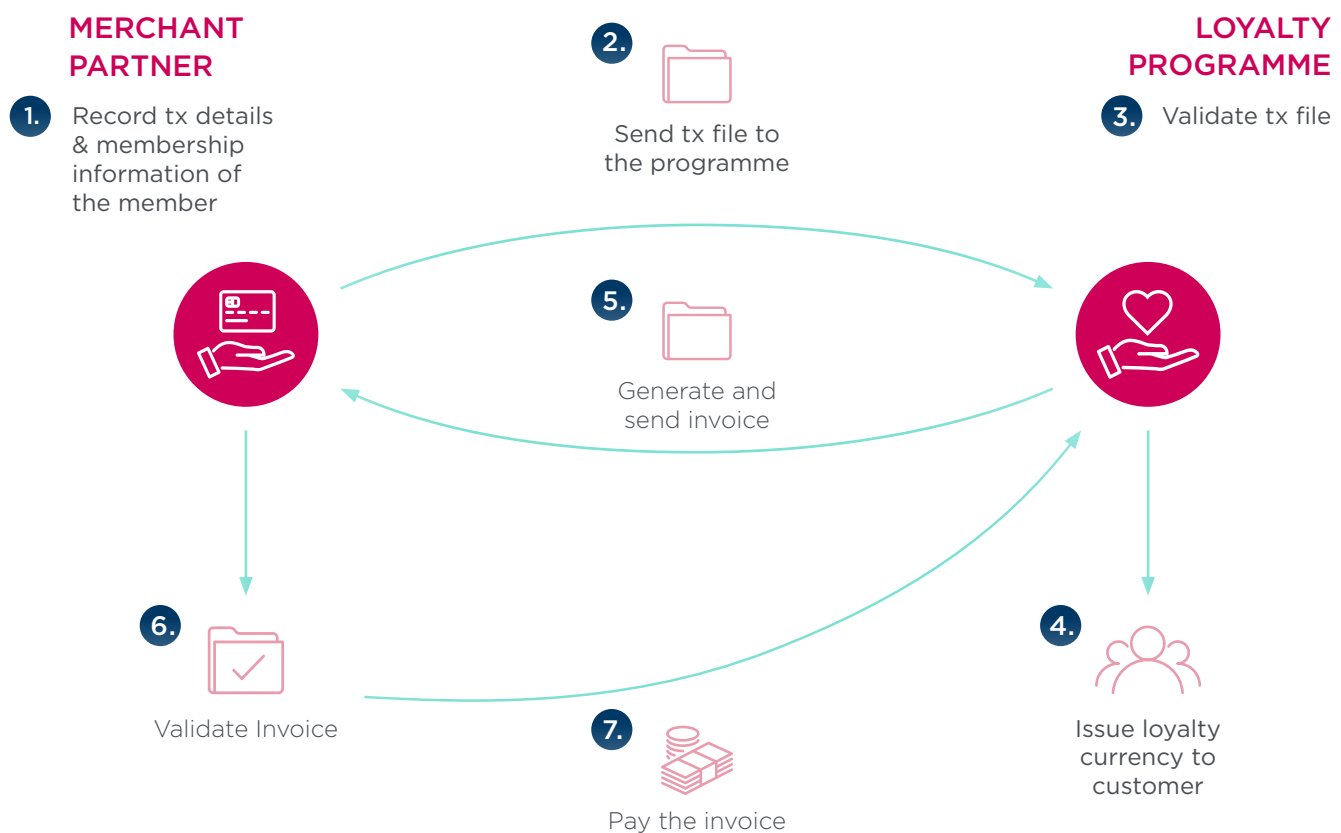
MERCHANT PARTNER

1. Record tx details & membership information of the member

2. Send tx file to the programme

LOYALTY PROGRAMME

3. Validate tx file

5. Generate and send invoice

6. Validate Invoice

7. Pay the invoice

4. Issue loyalty currency to customer

Fig 1: Steps involved in issuing of loyalty currency by a loyalty programme partner

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Improving the loyalty ecosystem

Collinson has invested in research and proof of concept development in four significant processes that can be improved in a cost-effective manner using blockchain technology.

Challenge 1:
Manual, invoice-based financial settlement costs time and money and results in delayed payments.

Challenge 2:
Slow and expensive partner setup constricts the number of potential partners.

Challenge 3:
Limited data exchange with partners reduces the ability to truly personalise the experience for customers.

Challenge 4:
Incomplete tracking of miles does not permit evaluation of true partner profitability.

We believe that improvements in these areas will drive significant value for programme owners, partners and customers alike.

How does blockchain fit in?

Collinson's technology lab has run an extensive series of trials to set up and manage a loyalty partnership using blockchain infrastructure. There were noticeable improvements in the areas outlined above. Blockchain-based infrastructure enables:

1. Carrying out **financial settlements in real-time without a need for reconciliation** to make earn/burn partnerships more profitable

2. **Onboarding a global partner base faster and in a cost-effective manner** so that programmes can add/remove partners easily anywhere in the world

3. **Creating personalised and targeted promotions underpinned by data** to make the programme more relevant to members

4. **End-to-end tracking loyalty currency** so that useful partnerships insights can be collected

We achieved this by setting up smart contracts governing the relationship between the programme and partners, as well as specific promotion mechanics. These contracts issued loyalty currency to members on behalf of partners and carried out financial settlement between partners and the programme.

Smart contracts can efficiently handle data that is on blockchain. We tokenised loyalty currency that made it available to smart contracts. The smart contract then issued this loyalty currency to members on behalf of a partner and recorded the details of these transactions on the shared blockchain database that both programme and partner can refer to. This single source of transaction details removed the need for reconciliation during financial settlement. A simple smart contract interface exposed over an API hugely simplified the actual technical integration. This significantly reduces the time it takes to onboard a new partner and effort/cost involved in carrying out day-to-day operations.

What is a smart contract?

A smart contract is a computer programme that runs on blockchain. It is most commonly used to encode business rules around transfer of an asset or to store data shared between two parties without having to worry about the data going out of sync.

A smart contract, once written to blockchain, cannot be changed. Anyone who has access to the smart contract can view what is in it. This makes smart contracts apt for situations where two parties need to execute common workflows without having to rely on a trusted third-party.

What is tokenisation?

Tokenisation is the process of creating a blockchain representation of a physical or digital asset. Tokenisation splits the asset into a large number of small parts that can be individually owned or transferred. Tokenisation is enabled by smart contracts which means a tokenised asset has inbuilt capabilities to automate the process of transferring tokens from one entity to another and store any associated data on blockchain.

Tokenisation also allows every unit of currency to be fully tracked from issue to redemption or expiry. This provides rich insights into the performance of loyalty partnerships that is not available today. For instance, it is possible to determine if a partnership is running at profit or loss by combining currency issuance and redemption pattern, sale price of the currency and actual cost of the redemption.

Lastly, partnerships allow brands to see how their customers interact with other brands. Such data can allow brands, in this case, both programmes and partners, to personalise customer experience. However, most loyalty partnerships are set up to make data sharing difficult. Customer data is so valuable that sharing is not a natural instinct for loyalty managers. There is a practical concern around loss of competitive advantage as a result of data sharing. To overcome this, one of our blockchain proofs of concept proved that brands can make use of the data from their partners to personalise customer experience without actually having to share the data. In some cases, controlled sharing of data allows brands to monetise their data. We enabled various monetisation models underpinned by seamless but controlled data sharing.
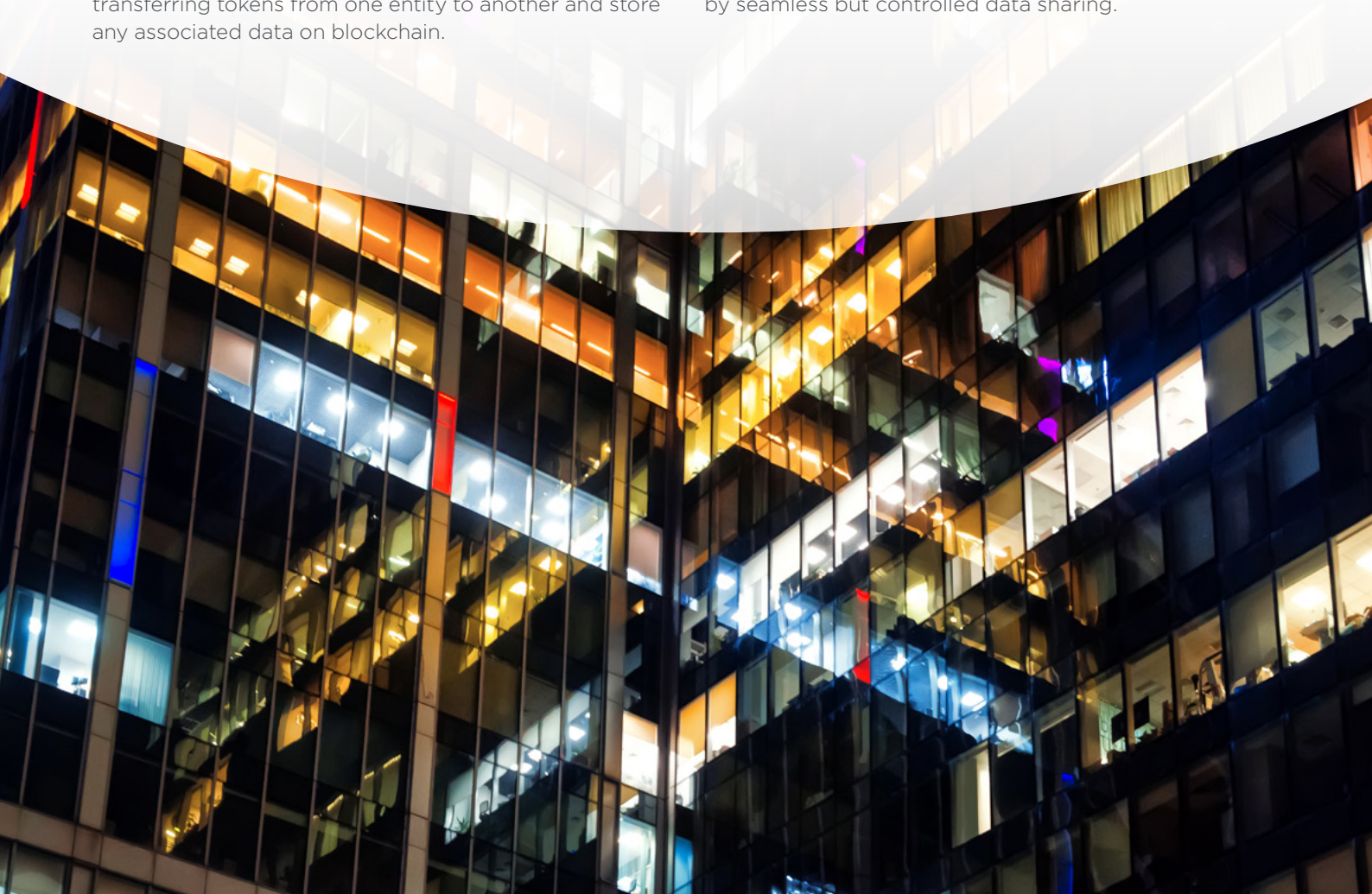
Permissioned blockchains – a step in right direction

We selected a permissioned blockchain to develop our proofs of concept. Permissioned blockchains are different from public ones in the following, significant, ways:

1. Access is restricted to trusted business partners only

2. The blockchain is secured using established network security techniques instead of energy-intensive mining

3. Sensitive data can be shared privately between subsets of business partners.

Some of the issues around technology and market dynamics associated with the current blockchain loyalty concepts diminish simply by shifting them from a public blockchain, like Ethereum, to a permissioned blockchain.

	Issues with the current blockchain loyalty programmes	How does the use of permissioned blockchain address the issue?
Market dynamics	Hidden and fluctuating transaction costs	Visible and predictable transaction costs
	Uncertain regulation, tax and accounting treatment	Our approach, based on permissioned blockchain, operates within current regulation, tax and accounting framework
Technology	Limited scalability	Most offer throughput in the range of a few thousand transactions per second, sufficient for even the biggest of the loyalty programme
	Data is publicly visible to all the participants	Participants can privately exchange data with each other

Network effect is where the real revolution lies

Most loyalty programmes build their own isolated partner networks. It is impractical and cost-prohibitive for partners to participate in every such network. This structure is keeping both programmes and partners from benefiting from network effect. If there are a handful of larger partner networks that more than one loyalty programme can participate in then every participant can benefit from the network effects of such a larger network. However, loyalty programmes and big partners have some of legal and commercial hurdles in the form of mutually exclusive commercial relations, data protection requirements and privacy of business transactions that make open participation in such a network impossible. We have successfully built a prototype network utilising blockchain that allows both programmes and partners to participate in a network and still have total control over their mutually exclusive commercial relations, privacy of business transactions and protection of data. The network effect of such a network makes it easy for programmes to expand their partner network globally.

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Conclusion

Collinson continues to invest in developing innovative loyalty solutions. We have recently built a series of prototypes demonstrating faster and cost-effective partner setup, real-time financial settlement with partners and seamless flow of customer data between the programme and its partners. The results are extremely encouraging and we are moving to a live pilot phase now.

Collinson believes that blockchain technology does have a key role to play in loyalty management as opposed to creating entirely new loyalty programmes. Permissioned blockchain platforms can ease some of the most onerous and costly functions of a typical loyalty programme: the merchant and partnership networks and exchange of private data by use of smart contracts. As enticing as cryptocurrencies may sound, it is in the behind-the-scenes application where blockchain truly shines for loyalty.

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About Collinson

Collinson is a leading global loyalty and benefits company. We craft customer experiences that enable some of the world's best-known brands to acquire, engage and retain the most demanding, choice-rich customers.

Our loyalty experts differentiate our clients' propositions using our unique combination of loyalty strategy, award-winning solutions and loyalty services. We drive long-term engagement by creating deeper, more meaningful connections.

We have 30 years' experience working with the world's leading payment networks, over 600 banks, 90 airlines and 20 hotel groups in over 170 countries. Our clients include Air France KLM, Alpha Bank, American Express, British Airways, Hilton, IKEA, Intercontinental Hotel Group, Mandiri, Mastercard, Qatar Airways, Radisson Hotel Group and Visa.

21 locations

15 countries

2,200 talented individuals

800+ clients

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Suhas Chatekar
Head of Innovation Lab

Suhas is Head of Innovation Lab in Collinson. He has 15+ years of experience architecting, building and delivering complex software for Loyalty, FS, Trading & Retail working for companies like Cognizant, Sungard, Accenture, Global Logic etc.

In his current role, he applies the latest technology to solve critical business problems in the most innovative, efficient and cost-effective way. He also constantly scans the technology horizon, start-up eco-system and competition landscape to understand where the next opportunities & threats are coming from.

Suhas is Collinson's SME on a number of topics like chatbots, blockchain, Open Banking/PSD2 and Identity & Access Control.

Peter Gerstle
Head of Travel Products

Peter is Collinson's Head of Travel Products, overseeing the strategy and management of Collinson Group's suite of travel products and driving innovation of its travel inventory, with a focus on the business of loyalty.

Peter has developed his 25-year career in eCommerce, product and innovation roles across a wide range of travel companies, including InterContinental Hotel Group and easyJet. He is a frequent speaker on loyalty strategy and product innovation.

Peter is an alumni of Lausanne Hotel Management School, the London School of Economics and Henley Management College.

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