BECKN

# PROTOCOL

RADICAL NEW
TAKE ON
THE FUTURE
OF DIGITAL
ECONOMY

beckn

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# CONTENTS

# 01

# EXECUTIVE SUMMARY

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The global digital economy has seen explosive growth, largely driven by private platforms /apps that transformed traditional markets, and created new ones. However, the strong network effect and data concentration with these private platforms have created imbalanced monopolistic markets, with consumers, sellers, and service providers facing disadvantages like high entry barriers, limited agency, and high commissions. Though the internet was created as open digital infrastructure, as the digital economy built on it evolved, access became fragmented as these closed private platforms lacked interoperability for economic transactions. Open Protocols, such as the Beckn Protocol, offer a way to return to such interoperable origins, by creating open decentralised networks that allow various digital commerce platforms to collaborate and innovate while preserving their competitiveness.

Beckn protocol creates a common language for interoperability among different digital platforms for facilitating economic transactions, similar to HTTP for the internet or SMTP for emails. Beckn is technology and sector-agnostic, enabling all aspects of digital commerce transactions, from discovery to post-fulfillment activities. Its ability to facilitate cross-platform and cross-sector bundling of transactions is its greatest strength, exemplified by its capability to, for instance, import a retail order from an e-commerce platform to a mobility network to receive intelligent delivery

> **Beckn protocol is an open specification that creates a common language for interoperability among different digital platforms for facilitating economic transactions, similar to HTTP for the internet or SMTP for emails.**

already demonstrated its potential to create transformational change in sectors like mobility and digital commerce, where power dynamics shifted between customers and service providers. Manifestations of Beckn-enabled networks have diverse governance ranging from centralised (e.g. ONDC) to federated (e.g. Namma Yatri), showing the range of suitable governance models for new deployments and geographies.

Early adoption of Beckn offers significant benefits by way of market expansion, widening access, and avoiding the potential high costs for course correction away from platform-centric models. To drive the adoption of the Beckn protocol and realise its full potential, a variety of stakeholders including technologists, businesses, government/policymakers, philanthropic funders, the academic community, and social enterprises have key roles to play in contributing to institution building and ecosystem coordination, activating seller-side markets, creating viable funding models for various stages of adoption, and sustaining a paradigm shift towards open protocols. The ultimate goal is to collaboratively create inclusive digital commerce ecosystems that are universally accessible, foster innovation and efficiency, and improve service delivery.

02

# DIGITAL UNFREEDOMS IN THE PRIVATE PLATFORM ECONOMY

# DIGITAL UNFREEDOMS IN THE PRIVATE PLATFORM ECONOMY

The global digital economy was estimated to be $11.5 trillion i.e., 15.5% of the global gross domestic product (GDP) in 2016, and could reach up to $23 trillion (i.e. 24.3% of global GDP) by 2025[1]. Private platforms and apps have played a major role in this transformation since the early 2000s, disrupting traditional markets and creating new ones, and transforming the traditional value chain by unlocking innovative models of value creation. Platforms have not only contributed to increasing trends in e-commerce from 5.2%[2] of total retail (US) sales in 2012 to 14.6%[3] in 2022, by enabling global interactions and efficient resource discovery, but have also been the genesis of several allied products and services in the digital marketplace. However, certain intrinsic features of these digital platforms, like the strong network effect, economies of scale, and data collection for enhanced efficiency, which had enabled such disruptive changes in the economy in the first place, have themselves led to markets that are imbalanced and characterised by "digital unfreedoms".

The platform-driven digital markets tend to create monopolies or duopolies[4] (consider the case of a dominant e-commerce giant, or pair of popular ridehailing applications in the mobility market forinstance), as the first-mover advantage works in tandem with a winner-takes-all market. Further, platforms being intermediaries as

**FIG. 1. DIGITAL UNFREEDOMS IN THE PLATFORM-CENTRIC MODEL OF E-COMMERCE**

Limited agency of sellers and service providers

Profitability constraints

High commissions /fees

Precarious contract terms

Poor Compensation

Data privacy concerns

well as the infrastructure itself, often become large conglomerates, through the power of data concentration or by leveraging their dominance in one market in other markets[5,6]. Such monopolistic, skewed market conditions could not only stifle competition and innovation, but also pose significant disadvantages to sellers, service providers as well as customers. The sellers often face digital unfreedoms like high entry barriers (especially for small/medium businesses), high commissions or fees, and limited agency in setting product or service prices, which combine to reduce their profitability. For instance, in 2021, Amazon took an average of 34% of each sale made by independent businesses on its site as seller fees, up from 30% in 2018, and 19% in 2014[7]. Similarly, app stores like Google Play and Apple App Store charge a standard commission of 30% on apps and in-app purchases of digital goods and services[8].Additionally, sellers are often bound by unfavourable contract terms that discourage or outright prohibit them from listing their product at lower prices on other digital platforms, further limiting their agency[9]. Service providers (especially in the gig economy) face issues of poor compensation, lack of social protection, and stringent performance criteria. These performance ratings are tied to a particular digital platform, impairing the service providers' agency to switch to other platforms with potentially better terms and compensation. Though consumers typically enjoy favourable conditions in a two-sided market, there are growing concerns about the privacy and security of consumer data as it becomes increasingly concentrated with these large digital platforms.

**The growth of dominant digital platforms, operating in silos of closed private digital networks, has led to a decline in competitiveness amongst other disadvantages.**

Thus, the growth of dominant digital platforms, operating in silos of closed private digital networks, has led to a decline in competitiveness and a resulting set of disadvantages – in the form of loss of agency and choices, and exclusion – for sellers, service providers, and consumers who are all instrumental in creating value in the ecosystem.

03

# BECKN PROTOCOL ENABLED NETWORKS: AN ALTERNATIVE TO CLOSED DIGITAL COMMERCE PLATFORMS

# BECKN PROTOCOL ENABLED NETWORKS: AN ALTERNATIVE TO CLOSED DIGITAL COMMERCE PLATFORMS

Though the internet began as an open digital infrastructure, as the economy built on it evolved, access became fragmented as private, non-interoperable platforms became the norm. The key to return to such interoperability by creating alternative decentralised networks lies in open protocols like Beckn Protocol. A protocol is a set of rules that standardises communication and interaction between entities, such as devices, websites, platforms and apps, by defining the message format, transmission methods, and connection rules to ensure standardised, predictable, and efficient communication and interactions. For instance, HTTP for the internet or SMTP for emails are open protocols, which act as the lingua franca for enabling efficient communication and interoperability between different websites, and platforms/apps. The Beckn Protocol, modelled on the design principles of the internet like openness, interoperability, and a layered structure, aims to establish such a universal language for digital commerce transactions, using open specifications to facilitate interoperability. Beckn's objective is to enhance digital commerce transactions, one of the three essential components of a digital economy, alongside digital identity and digital assets. By enabling a common machine-readable language, Beckn will facilitate economic transactions between various platforms of all sizes and types, covering all aspects of a digital commerce transaction, including discovery, order placement, fulfilment, and post-fulfillment activities. Beckn is, hence, a technology and sector-agnostic protocol designed to be the digital rails for a decentralised, peer-to-peer digital commerce network for enabling pan-sector transactions. It encompasses transaction methods, reference architecture, APIs, data models, and international

standards, enabling the formation of decentralised networks when adopted by digital platforms. The cornerstone of the Beckn Application Platform and Beckn Provider Platform interaction is the standardised request and response message structure, which is similar to a HTTP Request and HTTP response, but customised for commerce.



**FIG. 2. UNBUNDLING PLATFORM SERVICES WITH OPEN PROTOCOLS LIKE BECKN**
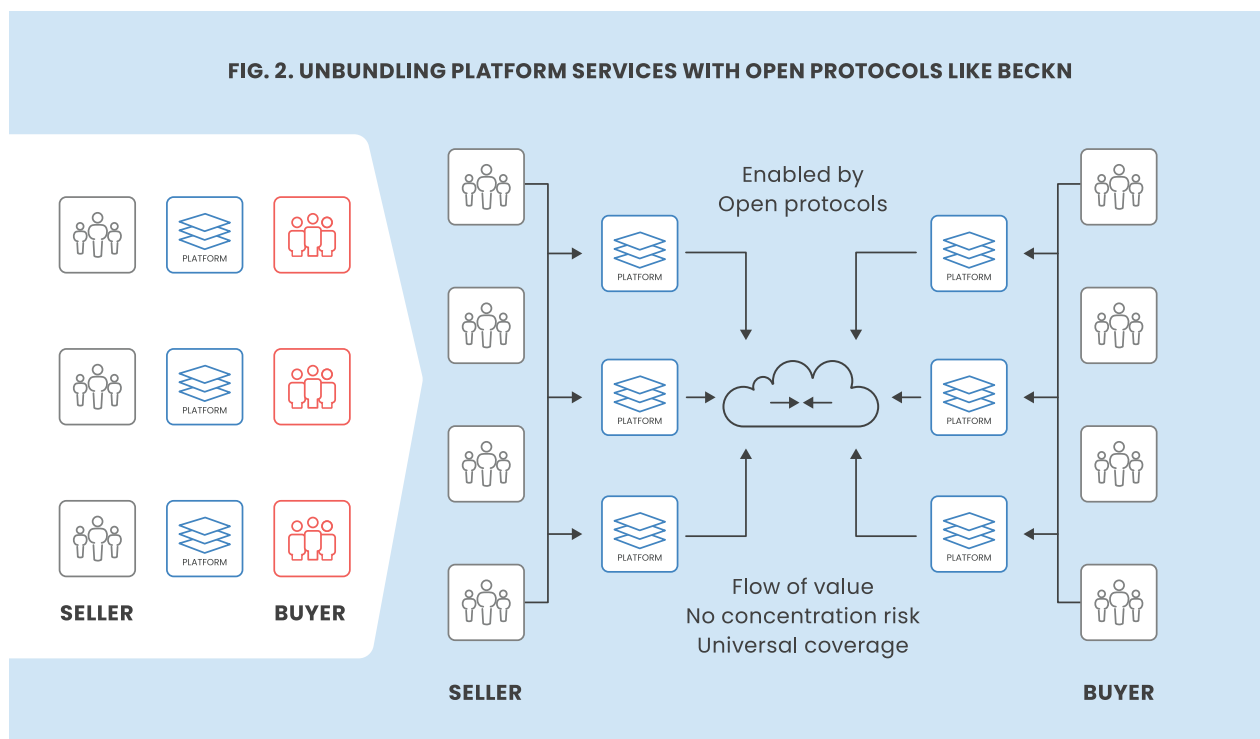
Beckn-based decentralised networks offer a better economic alternative to the risks and costs associated with traditional platforms that try to cater to both buyers and sellers. By unbundling the services and allowing each stakeholder to specialise, the network ultimately reduces dependencies on any particular platform and fosters collaboration, innovation, and inclusivity without compromising on competitiveness. With this increased flexibility and choice, sellers can tap into demand without being tied to a single platform, leading to a more equitable and efficient ecosystem. For instance, Beckn allows a product listed by a seller on one platform (e.g. Amazon) to be discovered and purchased from a different platform that the buyer may use (e.g. eBay), improving visibility and market reach for players

logistics and warehousing assistance, by providing access to these ancillary services through B2B vendors on the network, reducing their go-to-market efforts substantially[10].

Hence, the creation of more Beckn-aware platforms that communicate using a common vocabulary results in the establishment of open transaction networks which support interoperability for economic transactions, regardless of size and form of the various platforms. This results in barrier-free participation in the digital economy, with equal access to all participants, including governments, customers, and businesses, regardless of size, location, or demographics, and amplifies opportunities across sectors, regions, and demographics. By removing the digital unfreedoms described earlier, it offers a multitude of choices to the consumers and reduces the dependence on intermediaries to freely operate and generate economic transactions of value. The result is a more innovative and integrated digital landscape with limitless possibilities for businesses and users, as it encourages the
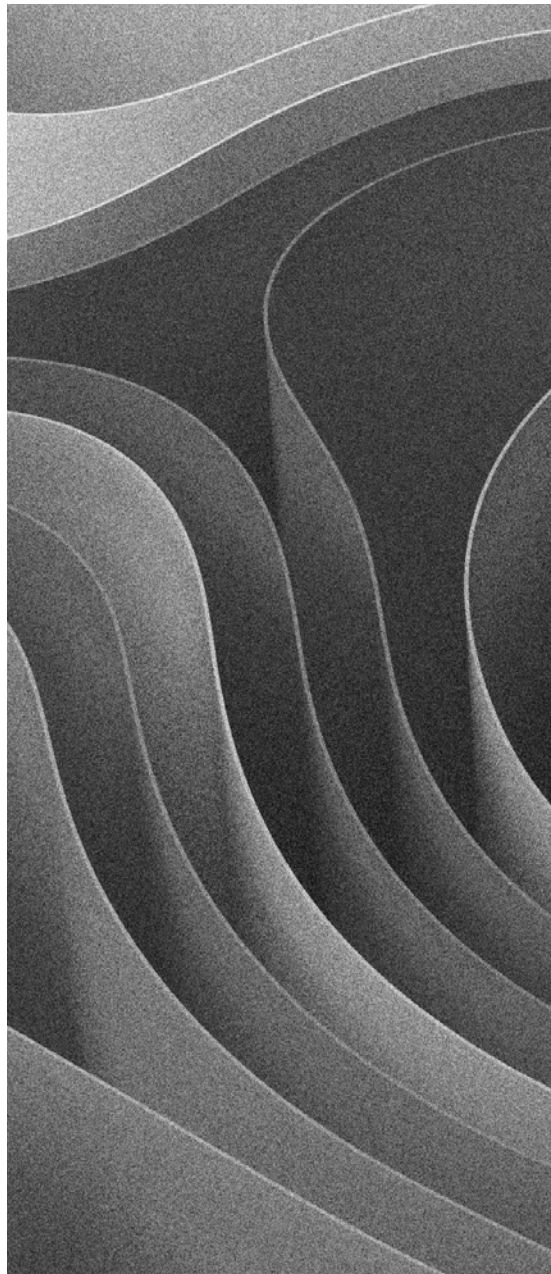
development of new applications, platforms, and seamless user experiences. The early adoption of Beckn-enabled open networks, especially in geographies and sectors where private platforms and apps have not yet gained widespread usage, offers significant benefits by way of market expansion, widening access, and avoiding the potential future high costs for course correction away from the current platform-centric digital ecosystems.
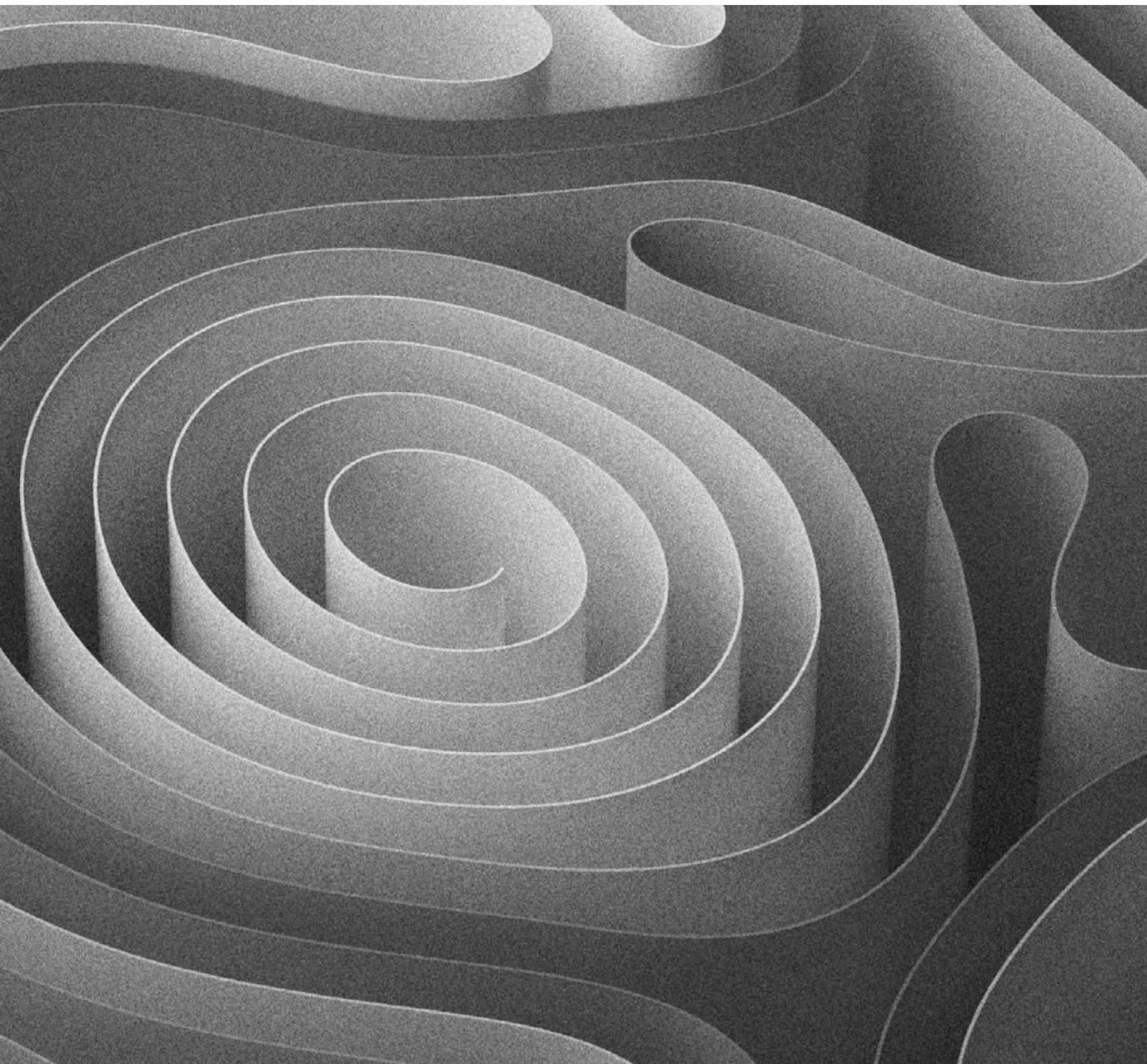
# TRANSFORMING SECTORS WITH BECKN:
# CASE STUDIES OF SUCCESSFUL DEPLOYMENTS

# TRANSFORMING SECTORS WITH BECKN: CASE STUDIES OF SUCCESSFUL DEPLOYMENTS

Beckn-enabled open networks are a catalyst for new ideas, innovations, and platforms that have made it easier for businesses of all sizes and types to interact and unleash previously unimaginable potential. These Beckn-enabled networks have the ability to create transformative change across a wide range of sectors. It has already been demonstrated in sectors such as mobility and digital commerce, where a shift in the power dynamic between customers and service providers has been witnessed across multiple locations.

## DEMOCRATISING DIGITAL COMMERCE IN INDIA: OPEN NETWORK FOR DIGITAL COMMERCE

India has 140 million online shoppers making it the third-largest base for e-commerce, only behind China and the US as per a Bain report. The Indian e-commerce industry is expected to grow at a 20% compound annual growth rate and reach $350 billion by 2030, primarily due to the country's growing and technologically advanced youth. However, the existing digital commerce environment presents several difficulties for India's small and medium-sized businesses, including high commission rates of e-commerce platforms, special treatment for the platforms' sellers, and need for more transparency in pricing and procedures. During the pandemic, as most activities including economic activity switched to online modes, the digital exclusion in the Indian digital commerce market was highlighted by the struggles faced by small/local

businesses even as digital commerce transactions surged ahead on the whole. The breakdown of the entire supply chain caused in part by such digital exclusion prompted the government to reevaluate the state of Indian digital commerce and devise a solution to ensure deeper penetration by all players (similar to UPI). To address the issues in the digital commerce sector, the government has set up the Open Network for Digital Commerce (ONDC) as a non-profit organisation in December 2021 with the Quality Council of India and Protean eGov Technologies Limited as initial promoters. Private firms (20 investors) that have invested more than $2.5 billion hold the majority of it[11].

ONDC, built using the Beckn Protocol, aims to break through the silos of private e-commerce platforms and level the playing field for all participants. ONDC can assist in the transformation of digital commerce from a platform-centric to an open network, facilitating greater player discoverability, transparency, and interoperability. This open infrastructure would help customers view all possible sellers' options online on a single platform of their choice, help businesses expand their visibility and market reach. The sellers' time and expense associated with creating and maintaining a digital presence are reduced as they only need to register on one platform to access customers on all platforms. The Beckn-enabled network has not only B2B vendors on the platform who offer auxiliary services like shipping and warehousing to sellers who want integrated logistics, but can also support B2C hyperlocal logistics to enable the buildup of seamless user experiences.

The ONDC was piloted in five cities in April 2022, bringing a variety of buyer- and sellerside applications to test the network's effectiveness on the ground. They have partnered up with several public and private players, to offer services that make use of one or more network features. According to the ONDC website, the platform currently has more than 1.8 million products and more than 25,000 sellers registered[12]. It is anticipated that the ONDC will drive significant growth over the next five years and aims to include:

**FIG. 3. THE FIVE YEAR GOALS OF ONDC**
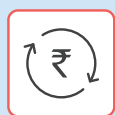
| | | | | |
|---|---|---|---|---|
| **37.5 trillion** | **7.3 billion** | **900 million** | **1.2 million** | **pin code** |
| additional gross merchandising revenue | additional annual purchases enabled by the network | buyers on the network | sellers on network | enhanced coverage |

Source: open Network for Digital commerce (ONDC). (2022). Open Network for Digital Commerce: Democratizing Digital Commerce in India.

Beckn-protocol enabled networks will strengthen the local economy across various sectors, such as retail, wholesale, transportation, finance, food delivery, logistics, and urban services. Eventually, these sectors can be integrated to enable seamless end-to-end transactions across sectors. A customer who is uncertain about being available to receive an order can choose to pick up their package at a designated mobility hub like a metro station, rather than opting for home or office delivery, enabling them to collect the package during their evening commute from work and avoid the risk of it being returned undelivered due to their absence at the delivery location. This integration of mobility and digital commerce networks when facilitated by Beckn, enhances seamless user experience and convenience. Further, as data concentration dissipates since data is stored only at transaction endpoints (i.e., platforms used by the buyer and seller), consumer data privacy concerns diminish. Hence, businesses and consumers alike will benefit from the increased efficiency resulting from the unbundling of services and the interoperability of the entire digital commerce value chain enabled by Beckn.

## RIDING INTO THE FUTURE WITH BECKN: NAMMA YATRI'S TRANSFORMATIVE COMMUNITY-LED MOBILITY SOLUTION

Bangalore, the Silicon Valley of India, flagged concerns about ride aggregation platforms in late 2022. There was substantial friction in the ecosystem due to steep commissions (up to 40%) charged by the platforms and the shrinking share of drivers' revenue. Consumers were also frustrated by the high costs of rides in the city, necessitating the intervention of the courts which restrained ride aggregators from charging customers rates that were drastically higher than the government prescribed rates. At such a juncture, the Auto Rickshaw Drivers' Union (ARDU), the three-wheeler drivers' association of Bangalore, came together with the agenda of creating an alternative mobility solution, inspired by the multiple open network initiatives unfolding elsewhere in India. This initiative was a true testament to the power of community-driven solutions, initiated by ARDU members themselves.

With voluntary support from a few technology partners, the ARDU built and launched their own Beckn-enabled ride-hailing platform – Namma Yatri – on the Android Play Store, and began field operations in November 2022. In this model, the drivers – as a collective – define the pricing rules, operating conditions, and cancellation terms, eliminating the need for any intermediaries. Compared to the centralised governance of ONDC, this case thus has a more federated governance model. In just over four months of its launch, Namma Yatri has seen an immensely positive response, onboarding more than 41,000 drivers

> **"I have been earning my living in Bangalore as an Auto driver for the last 32 years. But no other apps are like Namma Yatri. This app is very nice, and does not take any commission. This is very helpful for hard-earning auto drivers."**
>
> Ramakrishna,
> Auto Driver

> "Namma Yatri app is different from all the other apps. In this app, both the vendor and driver have the option of choosing the rate. This is a good improvement."
>
> Mahesh Kumar J R,
> Auto Driver

and reaching over 339,000 riders, all at zero marketing costs, simply by virtue of the open, collaborative, and fair arrangements enabled by it. As of March 2023, the network is clocking about 7,475 rides a day.

Following this, opportunities for an integrated open mobility network have emerged, with Bangalore Metro Rail Corporation Ltd. (BMRCL) and Bangalore Metropolitan Transport Corporation (BMTC) expressing interest in integrating their mass transit services with Namma Yatri to provide last-mile connectivity[13]. As part of these negotiations, the autorickshaw driver community proposed a last-mile ride within two km for a fixed fee of less than $0.50 if the journey starts or ends at any metro station. When operational, this will solve the last-mile connectivity bottleneck for both mass transit providers and users, and offer a seamless, unified booking experience for consumers, making door-to-door multimodal rides a reality. Such collaborative solutions are a true embodiment of a peer-to-peer open mobility network.

The Namma Yatri case showcases Beckn's potential to unlock the untapped potential in the mobility sector and expand it by integrating it with other sectors. Using the Beckn protocol, a platform can provide users with a single interface to access various multimodal door-to-door transport options, including public transport, cabs, and personal vehicles. This will offer users a stress-free mobility experience, with customizable journeys, subscription models for daily

single-ticket multimodal commute, and integrated ancillary services like parking and EV charging to make the experience seamless. The protocol's benefits extend beyond convenience and efficiency, and can also enable a mobility platform to innovate and incorporate sustainability features. For instance, the platform could include a feature that calculates the carbon footprint of the user and creates a leaderboard based on this with the user, their family, friends, and coworkers, as a way to encourage sustainable choices. Further, the government can also leverage open networks like these to implement policy decisions, say by incentivizing service providers and users to opt for sustainable transport modes, through discounts on EV vehicles and charging stations.

The future possibilities are limitless especially when considering the myriad ways in which multiple networks can be integrated – for example, if the Beckn-enabled mobility network is integrated with an Beckn-enabled digital commerce network, a person who has opted for a metro commute on the mobility network will be able to use the same app interface to order a cup of coffee for delivery at his end station using his preferred mode of payment. The future of mobility is thus on the cusp of a revolution, with Beckn protocol leading the charge towards an integrated and seamless digital ecosystem that benefits all stakeholders involved, including businesses, customers, and the government.

**Scan here to view
Namma Yatri's impact**
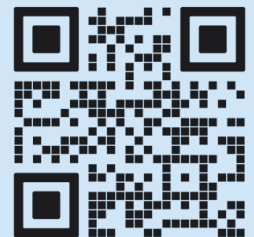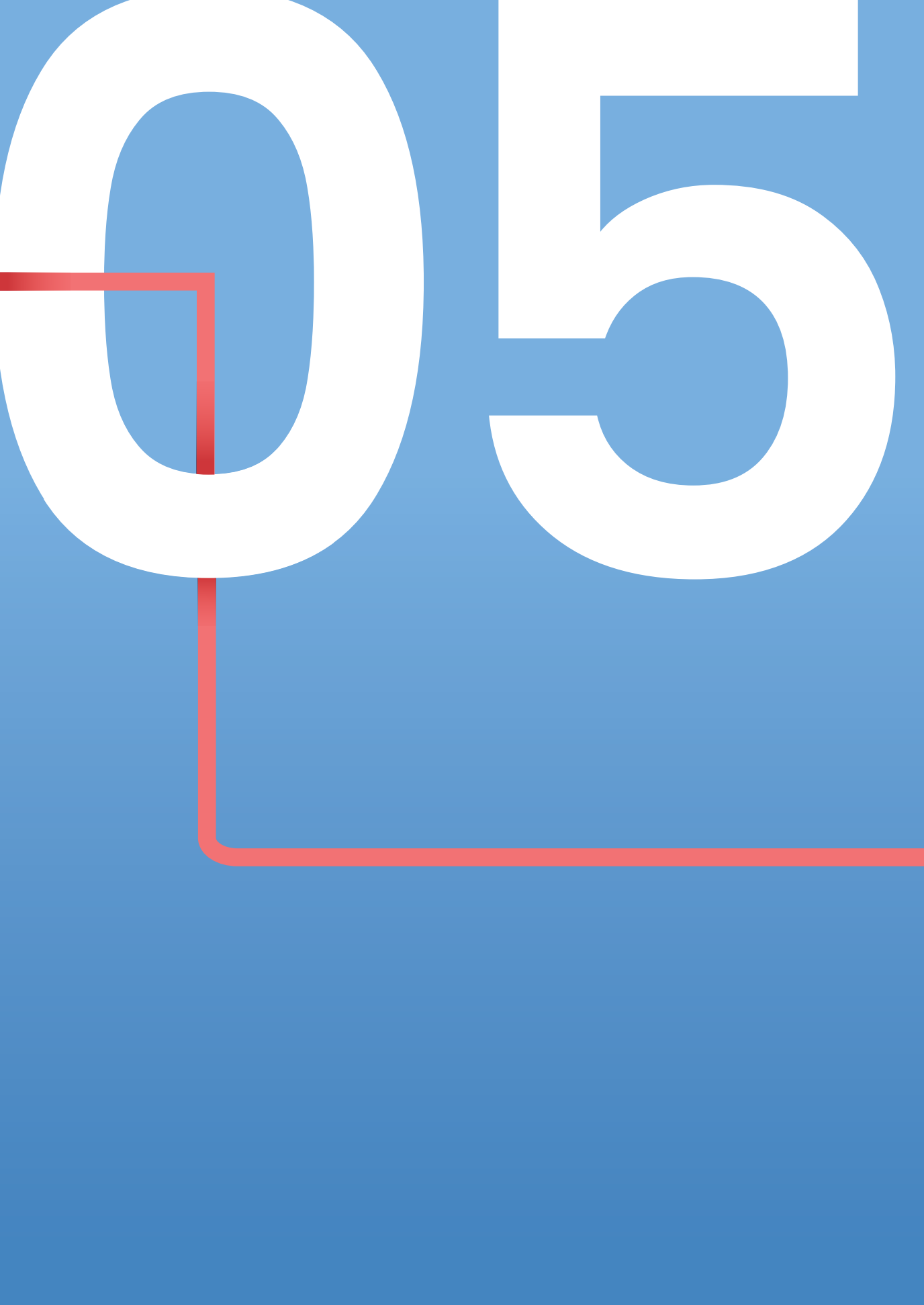
# USE CASE UNIVERSE OF BECKN PROTOCOL

# USE CASE UNIVERSE OF BECKN PROTOCOL

☐ Beckn enabled solutions deployed

☐ Beckn enabled solutions under development

☐ Beckn enabled solutions possible in future

| SECTORS | USE CASES |
|---------|-----------|
| **Mobility**<br><br>Cities can switch from form specific mobility to mobility that is focused on the customer. | • Door-to-door multi-modal transport<br>• First and last-mile connectivity<br>• Public-private partnerships for end-to-end transport solutions<br>• Auxiliary services like EV charging stations, parking spots etc |
| **E-commerce**<br><br>Equalises opportunities for sellers and service providers of all sizes and forms, by enabling discovery locally and globally at low costs. | • Discovery of local retail stores<br>• End-to-end search-order-payment<br>• Discovery of service providers like plumbers, electricians etc<br>• Integrated logistics, insurance services etc |
| **Healthcare**<br><br>Improves healthcare access and operational efficiency by integrating various service providers in the ecosystem. | • Telemedicine and teleconsultation<br>• Booking lab tests, home tests, tracking online/offline reports etc<br>• Integrating insurance claims<br>• Ambulance services<br>• Coordination with blood banks<br>• Transport of blood/live organs using medical robots/drones |
| **Education**<br><br>Improve access and learning outcomes of students enabled by personalisation of services and low costs. | • Remote learning/educational resources<br>• Discovery of scholarships, grants etc |

| SECTORS | USE CASES |
| --- | --- |
| **Livelihood & Skilling**<br><br>Interoperable and efficient talent marketplace for employers and job seekers. | • Job and opportunities<br>• Issuance of skill credentials - automated method of sharing skill credentials and badges |
| **Tourism**<br><br>Provides travel agents and services with ease of discovery at a lesser cost. | • Tickets/booking for transportation, local conveyance, tourist attraction, dining<br>• Discovery and booking for accommodation<br>• Consolidated reviews and ratings |
| **Real Estate**<br><br>Provides property owners and prospective tenants a direct channel of communication. | • B2B workplaces, factories, co-working spaces<br>• Rental properties<br>• Secondary transaction markets for land derivatives |
| **Law and Justice**<br><br>Increases transparency and enables faster settlement of disputes. | • Tele-law consultation<br>• Discovery & booking of mediators for Online Dispute Resolution<br>• E-commerce dispute legal advice<br>• Collective Grievance Redressal<br>• Legal aid providers |
| **Credit/Financial Services**<br><br>Provides users with additional choices and allows them to have better control over their finances. | • Financial instruments – mutual funds, bonds, etc.<br>• Options of credit facilities like credit cards, loans, etc.<br>• Banking services |

| SECTORS | USE CASES |
|---|---|
| **Agriculture**<br><br>Improves agri-productivity and farmer welfare. | • Agri product marketplace integrated with logistics and warehousing services<br>• Insurance<br>• Knowledge creation and dissemination<br>• Automated DBT for Government schemes |
| **Logistics**<br><br>Facilitates logistics planning in a cost-effective and efficient way. | • Industry 4.0 with Beckn-enabled IoT transactions (order generation, production planning etc.)<br>• Logistics planning based on demand data<br>• Cost and time-based booking of shipping agents |
| **State Service Delivery**<br><br>Facilitates the application process for several government programmes. | • Open data from multiple ministries and schemes<br>• Automated eligibility check to qualify for entitlements |
| **Entertainment**<br><br>Provides possibilities for artists and events from different industries by enabling both national and international discovery possible at minimal cost. | • Network of artists including actors, comedians, painters, musicians etc<br>• Tickets for entertainment events, including theatre, sports etc |

**The future possibilities for Beckn-enabled solutions for businesses and consumers are limitless, especially when considering the myriad ways in which multiple sectors and networks can be integrated.**

## INDUSTRY-WIDE SERVICE DISCOVERY FOR TOURISM

Tourism is one of the world's largest industries, with a direct contribution of ~3.6% to global GDP and an indirect contribution of ~10.3%[14]. The integration of the internet into the tourism sector has greatly streamlined operations, enhanced consumer options, and provided flexibility in service delivery, making it inevitable for all players across various domains of the industry to adopt technology to maximise efficiency and improve visibility to tourists.

The travel and tourism sector includes a broad range of services-accommodation, local transportation, tourist attractions, entertainment, dining, and wellness. The internet has enhanced transparency and competition by displaying the charges, benefits offered, reviews, and ratings of the service provider. To maximise the number of users reached, service providers must be listed on a variety of aggregators, incurring additional expenses, time, and effort. Parallelly, the customers have to register on several platforms to access and compare services offered by various players across domains – flights, accommodation, tourist attractions, and dining options – making the booking process complicated and time-consuming. Beckn aims to not only solve the problem of discovery for travel services but also facilitate ordering, tracking and rating of these services by enabling an open network for these platforms. It provides all service providers an equal opportunity to offer their services regardless of the number of platforms they are present on, and makes it convenient for tourists to explore all available options across different services to curate the best deals possible.
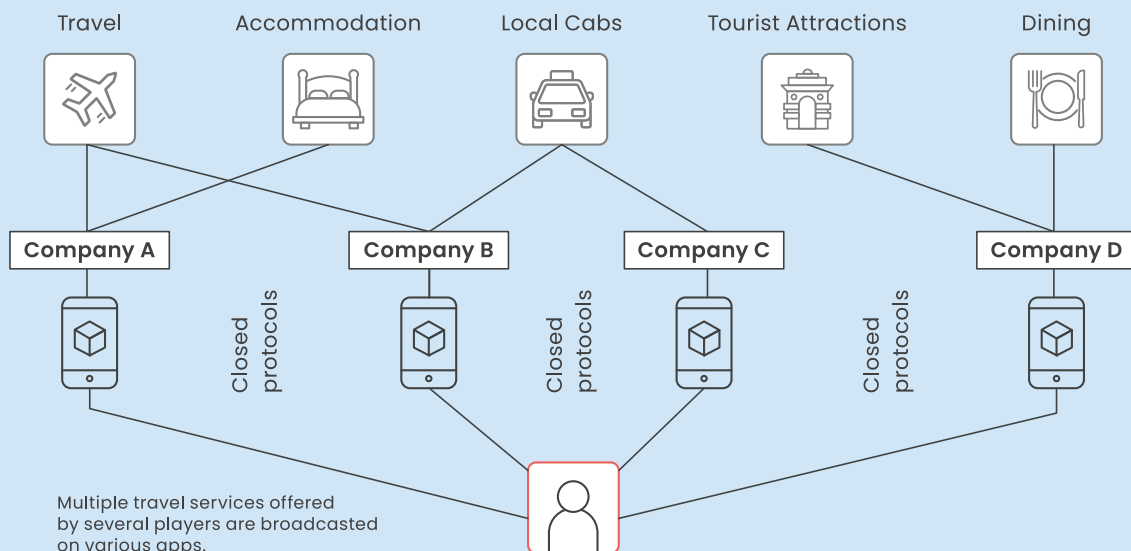
For example, when John is taking a leisure trip from London to New York, he can use Google Maps (assuming Beckn-compliant) to view various airlines' schedules, and fares, all in one place, and conveniently choose the most suitable and cost-effective option. He can even check-in and order in-flight meals with the same app, without needing to navigate to individual airline websites. John can also explore all accommodation options available like hotels, hostels, Airbnbs, etc located in Manhattan in his budget, and book a hotel of his choice through Google Maps. Once he lands at the airport, he uses Google Maps to find the most efficient and affordable mode of local transportation to his hotel. On comparing various modes of transportation like bus, train, and taxi listed in one place, he chooses a local taxi and makes the payment through his preferred payment option, including Forex, via the same application. While en route to his hotel, John can make a reservation at the nearest restaurant from his hotel for lunch and book a tour of The Metropolitan Museum of Art afterward, or any other travel service he may need, using the same Bekcn-enabled application in this open network.
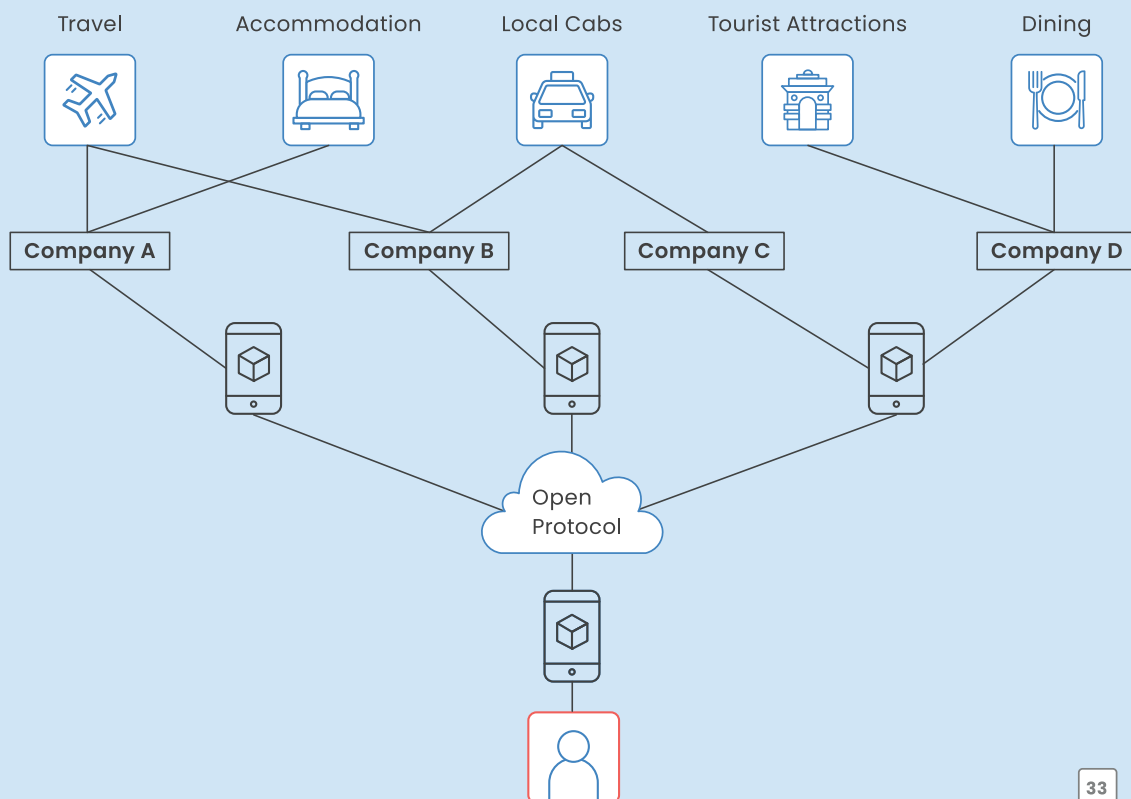
The Beckn Protocol can thus enable the creation of a one-stop shop for tourists to access the required services for their trip, where the service providers will be able to list their services along with consolidated ratings and reviews from across platforms by registering on just one platform with no additional marketing expenditure, making the market more equitable.

**FIG. 4. UNBUNDLING TOURISM SERVICES WITH BECKN PROTOCOL TO TRANSFORM USER EXPERIENCE**

In a platform-centric model of e-commerce, the tourism needs to sign up on various applications in order to have access to different travel services, comapre costs and select the best package, making the process complex and time comsuming.

Travel     Accommodation     Local Cabs     Tourist Attractions     Dining

Company A     Company B     Company C     Company D

Closed protocols     Closed protocols     Closed protocols

Multiple travel services offered by several players are broadcasted on various apps.

In the Beckn-enabled open network, the tourist can access different travel services offered by various players using a single app, regardless of the platform the seller is listed on.

Travel     Accommodation     Local Cabs     Tourist Attractions     Dining

Company A     Company B     Company C     Company D

Open Protocol

### SYNERGISING DIGITAL COMMERCE THROUGH MULTI-NETWORK INTEGRATION

The Beckn protocol seeks to eliminate restrictions in digital commerce for both buyers and sellers by enabling an inclusive and equitable network. However, its potential can be maximised by integrating it with other sectors such as skilling, logistics, and mobility networks. By doing so, the ecosystem can unlock more value and efficiency. For example, Kevin is a jewellery maker who sells his handmade products on Etsy. Meanwhile, Rebecca is searching for a handmade bracelet on Amazon. In our current siloed e-commerce system, it would be difficult for Rebecca to find Kevin's listing. However, in a Beckn-enabled open digital commerce network, both Kevin and Rebecca can discover each other, assuming both Etsy and Amazon are Beckn-enabled.

In the Beckn-enabled digital commerce network, the search request from any buyer application is multicasted to all registered seller applications, allowing for cross-platform discoverability of all sellers in the network. This means that Kevin can list his products on just one platform at a low-cost while gaining improved visibility to all buyers in the network, regardless of the platform they use. Beckn also allows Rebecca to explore products from all sellers across the network, reducing the burden of having to search and compare sellers, products, prices, etc. across multiple platforms separately. Furthermore, Kevin's product listing page can have his digitally verifiable credentials as a jewellery designer and maker from a Beckn-enabled Skilling Network, based on his completion of relevant courses. This feature will help Rebecca trust Kevin's products and she places her order by completing checkout and payment on the digital commerce network.

> **Beckn protocol's potential to eliminate restrictions in digital commerce for both buyers and sellers by enabling an inclusive and equitable network, can be maximised by integrating it with other networks like skilling, logistics, and mobility.**

Once Kevin processes Rebecca's order, he can utilise a Beckn-enabled Logistics network to find well-rated delivery personnel who offer competitive rates for delivery. By broadcasting his delivery requirements to all onboarded available gig workers, Kevin is presented with a range of viable and affordable delivery options. This is in contrast to the current e-commerce market, where sellers are often locked into the aggregators' delivery models, which come at a considerable cost. Kevin identifies Mark, an onboarded gig worker on the logistics network, who has quoted an acceptable price and selects him to complete the delivery.
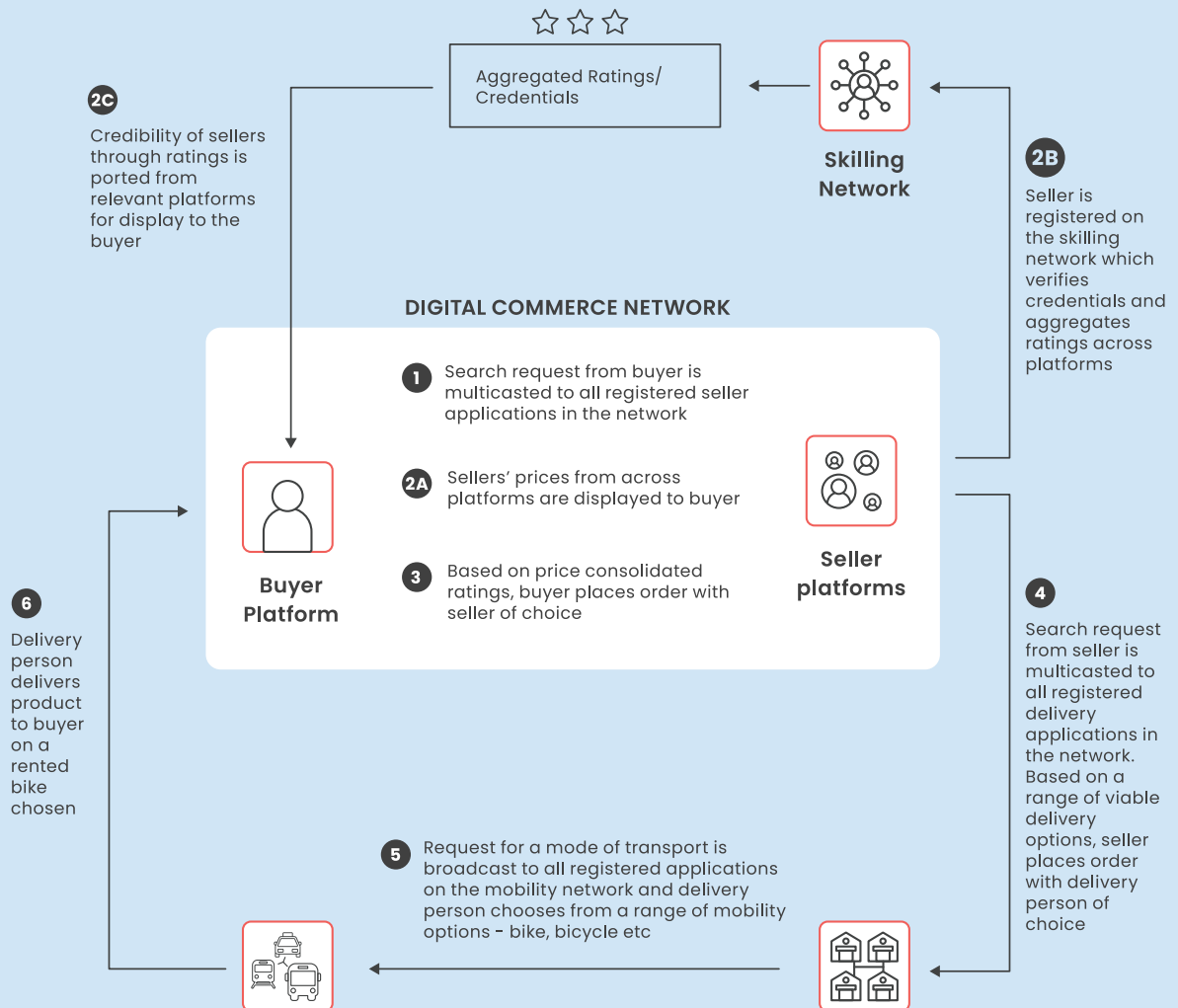
Mark can then use the Beckn Open Mobility Network to choose a mode of travel to pick up the package from Kevin's location and deliver it to Rebecca's location. He may choose a car, scooter, or bicycle, depending on the distance and available local transportation infrastructure, to reach the delivery location quickly Beckn protocol's potential to eliminate restrictions in digital commerce for both buyers and sellers by enabling an inclusive and equitable network, can be maximised by integrating it with other networks like skilling, logistics, and mobility. Interoperability through Beckn Protocol[19] and safely. This ensures that the entry barrier is low for gig workers, who now need not
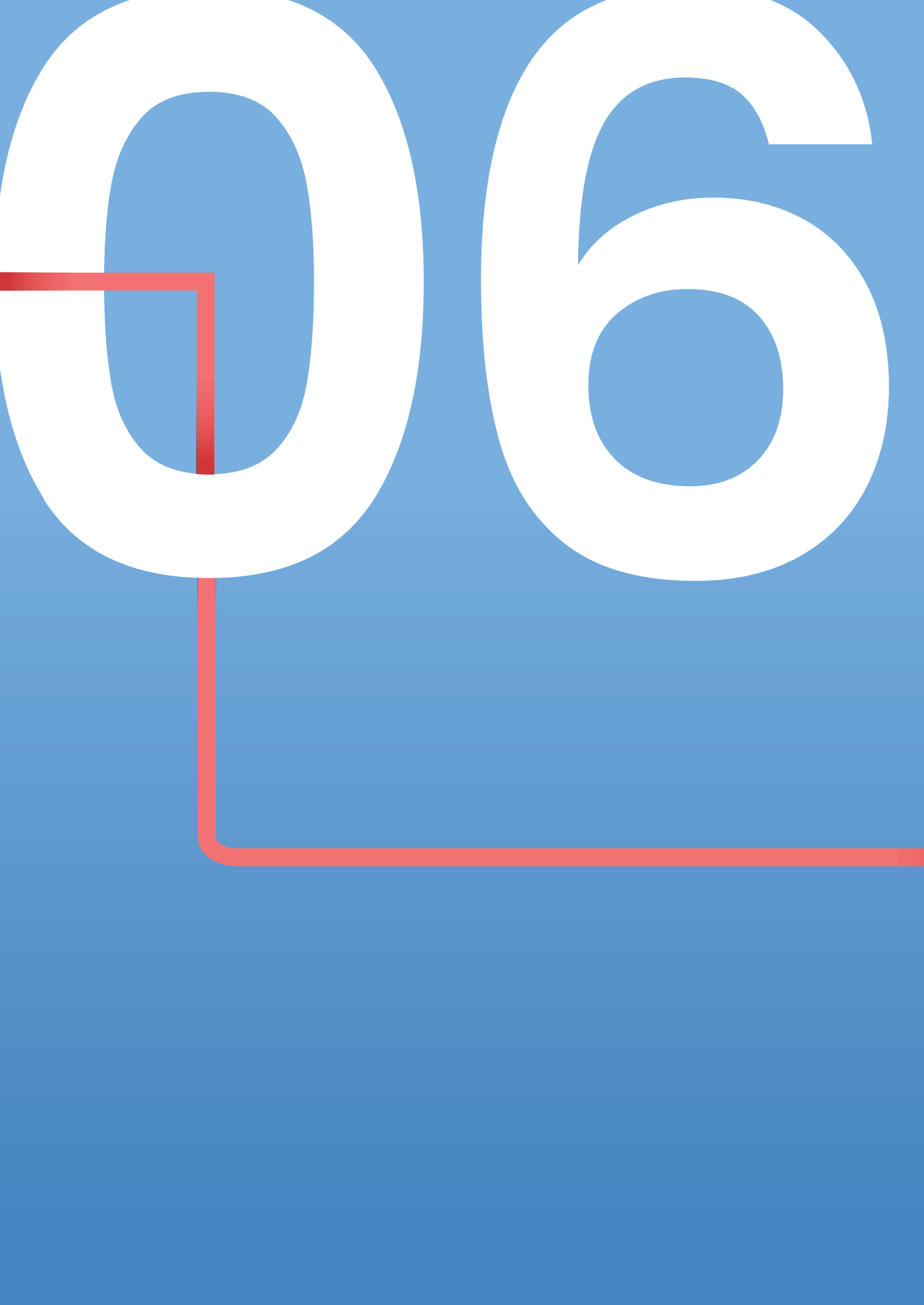
own a vehicle, and can charge competitive prices without worrying about commissions (charged by aggregators) eating into their revenues.



Throughout the process, the four Beckn-enabled networks — digital commerce, logistics, skilling, and mobility — will work seamlessly together to ensure timely and efficient delivery to the customer. The integration of the four networks will streamline the entire process, reducing time and resources needed for delivery. Each seller and service provider will operate, specialise, and innovate in their respective field of expertise, eliminating redundancies across sectors, lowering costs, and increasing efficiency in the delivery process.

**FIG. 5. SYNERGISING E-COMMERCE THROUGH THE POWER OF BECKN PROTOCOL**

☆ ☆ ☆

| Aggregated Ratings/ Credentials |

**Skilling Network**

**2C** Credibility of sellers through ratings is ported from relevant platforms for display to the buyer

**2B** Seller is registered on the skilling network which verifies credentials and aggregates ratings across platforms

**DIGITAL COMMERCE NETWORK**

**1** Search request from buyer is multicasted to all registered seller applications in the network

**2A** Sellers' prices from across platforms are displayed to buyer

**3** Based on price consolidated ratings, buyer places order with seller of choice

**Buyer Platform**

**Seller platforms**

**6** Delivery person delivers product to buyer on a rented bike chosen

**4** Search request from seller is multicasted to all registered delivery applications in the network. Based on a range of viable delivery options, seller places order with delivery person of choice

**5** Request for a mode of transport is broadcast to all registered applications on the mobility network and delivery person chooses from a range of mobility options - bike, bicycle etc

# DRIVING ADOPTION OF THE BECKN PROTOCOL: A CALL TO ACTION

# DRIVING ADOPTION OF THE BECKN PROTOCOL: A CALL TO ACTION

The successful adoption of Beckn protocols requires a multi-faceted approach that includes institution building and ecosystem coordination, activating seller-side markets, creating viable funding models for various stages of adoption, and sustaining a paradigm shift towards open protocols. This requires participation, contribution and collaboration from multiple stakeholders in the ecosystem to ensure a robust open digital commerce network spanning various sectors.

**TECHNOLOGISTS: ARCHITECTS OF THE BECKN PROTOCOL**

The Beckn Protocol is inspiring market players to reimagine the development of seamless digital experiences and networks. Technologists can contribute to development of the Protocol and specifications, and assess the usefulness & viability of potential use cases. They can also adopt it to develop products and solutions in their sector. Collaboration can expand the functionalities of the protocol and support co-creation of solutions for use cases integrating multiple sectors. Technology experts can make it easier for other stakeholders to adopt an open network through knowledge sharing, enabling further innovation. Technologists can also provide voluntary support in building community-led sustainable solutions like Namma Yatri using the Beckn Protocol.

**SELLERS AND SERVICE PROVIDERS: DEMAND GENERATION**

Beckn aims to create a digital marketplace that is small business friendly and enhances the agency of sellers to conduct business on their own terms. Since the protocol eliminates the need for demand-side and supply-side actors to be on the same platform, it expands the pool of prospective market players that can be reached for both sides. Since network effect plays a crucial role in the widespread usage, success, and impact of Beckn protocol-based networks, proactive initiative and adoption by supply-side actors are imperative. Sellers can also aid in the creation of Beckn-enabled networks in their respective sectors by generating demand for inclusive networks, by influencing and collaborating with the downstream and upstream participants in their sectors.

**GOVERNMENT: REGULATOR, ENABLER, AND SERVICE PROVIDER**

The government will play multiple roles in encouraging open digital networks enabled through Beckn protocol. It should establish and implement a comprehensive governance and policy framework for fostering and regulating open protocol-based digital networks and promote inclusiveness, competition, and data privacy & security. The government can also strengthen and enable the ecosystem by investing in and building the public technology infrastructure that various stakeholders can then use Interoperability through Open Protocols to design innovative solutions using the Beckn protocol. Additionally, the government can facilitate collaboration between various stakeholders and promote knowledge-sharing through open data portals, forums, and other initiatives. The government can also use Beckn-enabled solutions for enhancing the efficiency of public service delivery (including welfare entitlements) to individuals and businesses, and seamlessly collaborate with the private sector when needed.

## PHILANTHROPY'S VITAL ROLE: FUNDING TRANSFORMATION

Philanthropic funders will play a significant role in the development and adoption of Beckn-enabled digital ecosystems. They can foster innovation by providing capital and incubators to innovators, promoting inclusive, low-cost building blocks, and end-user solutions. Since Beckn-enabled open digital networks should be universally accessible and inclusive, philanthropic capital alongside public funding would be the most appropriate funding model as this will prevent disproportionate value capture and enable equal opportunity for stakeholders to build proprietary solutions on top of the open network. Philanthropies can also help in designing and monitoring programmes by providing technical assistance for designing digital platforms and impact evaluation tools. Further, they can provide advisory services to governments on DPG-related programmes, ranging from programme design, implementation support, and development of monitoring and evaluation tool.

## ACADEMIC COMMUNITY: ENABLING KNOWLEDGE CREATION

Any new technology must be accepted by a variety of stakeholders including the public to be successful. Academicians can help define the concept, implications, and motivation behind the Beckn protocol, and encourage the adoption of the technology through knowledge sharing. For instance, game theory models of the protocol deployment can be built based on data and applications from across sectors. Such academic efforts can serve as a crucial stepping stone for further research to enhance the Beckn-enabled networks' effectiveness, future applications, and pathways. Researchers within organisations can act as facilitators of the Beckn protocol by undertaking sector-specific research, interacting with public/private organisations, and last-mile users to gather feedback and suggestions on the functions and service quality of the platforms.

**SOCIAL ENTERPRISES: SOLVING SOCIAL PROBLEMS WITH BECKN**

Social enterprises will play a crucial role in building trust and facilitating the adoption of the Beckn-enabled digital platforms and networks on the ground by engaging with the ecosystem and spreading awareness on the utility of the Beckn-enabled open networks. They can also build capacity by training grassroots-level workers (e.g. nurses, school teachers, and a variety of sector-specific personnel) towards end-user solutions, who can pass on the training to the rest of the community. Internally, social enterprises can adopt open digital network-based tools for effective and efficient programme development and delivery, based on increased access to data facilitated by interoperable platforms used in the ecosystem.

**FIG. 6. SYNERGISING E-COMMERCE THROUGH THE POWER OF BECKN PROTOCOL**

| PILLARS OF SUCCESS | ACTIONS | RELEVANT STAKEHOLDERS |
|---|---|---|
| Institution Building and Ecosystem Coordination | • Identifying appropriate governance models for open commerce networks, with attention to the most suitable degree of centralisation for each jurisdiction and sector.<br>• Comprehensive policy framework for promoting and regulating Beckn protocol-based digital networks, including aspects like competition, data privacy, and dispute resolution.<br>• Foster partnerships and collaboration between government, industry, and academia to promote the development and adoption of Beckn protocol. | Government Policy Makers Technologists Sellers/Service Providers |
| Activating Markets | • Aggregation of market players by activating and leveraging existing market, including e-commerce platforms to promote the adoption of open protocols among sellers.<br>• Adoption of Beckn protocols for efficient public service delivery including welfare entitlements, transportation, healthcare etc.<br>• Foster engagement among sellers through community and awareness building initiatives such as forums, events, or social media engagement.<br>• Implement incubation models and capacity-building programs to strengthen local capacity.<br>• Facilitating knowledge sharing to drive and improve the adoption of Beckn. | Government/ Policy Makers Sellers/Service Providers Academics Social Enterprises Philanthropists/ Multilaterals |
| Viable Funding Model | • Implementing appropriate funding models for seeding stage, such as public funding, venture capital, and philanthropy.<br>• Roadmap for funding for scaling up Beckn-enabled solutions, including engaging corporates/industry funding in addition to above sources.<br>• Foster innovation by providing capital and incubators to innovators.<br>• Funding academic and sector-specific research for knowledge creation and sharing. | Government/ Policy Makers Venture Capital Philanthropists Multilaterals |

**Sustained Paradigm Shift**

- Supporting research and development efforts to identify new use cases and applications, and drive innovation to improve Beckn.
- Inclusion of modules on open protocols like Beckn protocol in tech-specific educational programs. Increase awareness and understanding of Beckn protocol among governments, developers, sellers, and other stakeholders through continuous communication and engagement efforts.
- Establishing communities of practice around Beckn protocol to share knowledge and best practices, promote collaboration, and build a sense of shared ownership and responsibility.
- Creation of sustainable solutions through collaboration and voluntary support within and beyond their specific sectors.

Academics
Technologists
Government/
Policy Makers
Sellers/Service
Providers
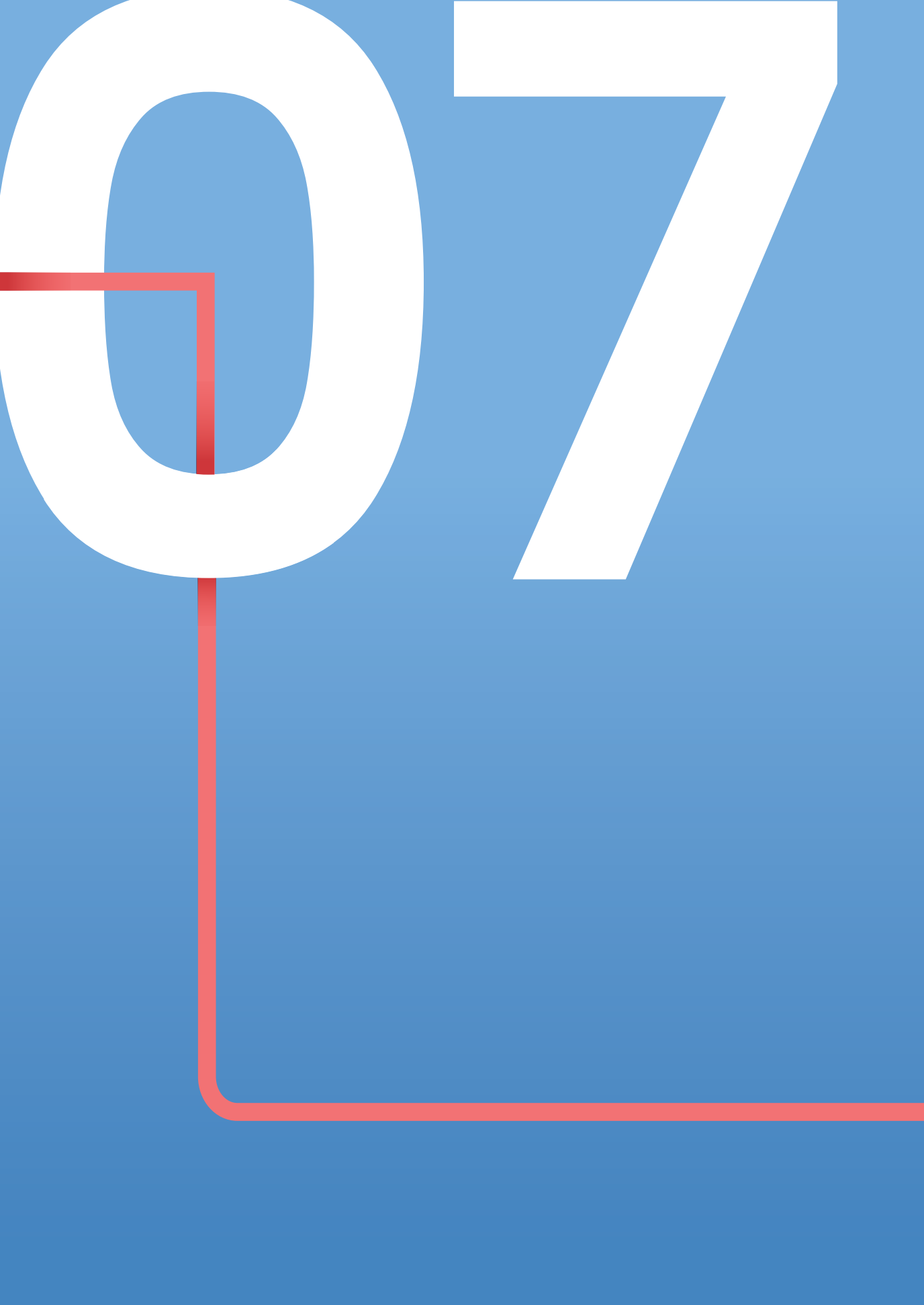
# CONCLUSION

# CONCLUSION

The Beckn protocol enables businesses to rethink digital commerce as low-cost, low-maintenance, and barrier-free platforms, opening up the potential of the global business ecosystem to new prospects. Beckn aims to create an open interoperable digital ecosystem for economic transactions to solve the problem of discovery for buyers and sellers by providing them with equal opportunities irrespective of their size, structure, and location.

Its ability to facilitate cross-platform and cross-sector bundling of transactions exemplifies its potential to transform digital commerce. The decentralised, transparent, and collaborative nature of the Beckn protocol enables its applicability and stability in solving existing needs across sectors and unlocking innumerable future possibilities.

By creating value for all stakeholders in the ecosystem including sellers, consumers, the government, etc., Beckn can generate economic and social value, radically change the landscape of the digital commerce ecosystem, and have a transformative impact

on the nation's economy. To achieve the successful adoption of Beckn protocols to create a robust open digital commerce network spanning sectors, participation, contribution, and collaboration from multiple stakeholders in the ecosystem are necessary, including institution building and ecosystem coordination, activating seller-side markets, creating viable funding models for various stages of adoption, and sustaining a paradigm shift towards open protocols.

The future of the digital economy is on the cusp of a revolution, with the Beckn protocol holding the game-changing key for creating an integrated and seamless digital ecosystem that is decentralised and inclusive.

# REFERENCES

1. Huawei & Oxford Economics. (2017). **Digital Spillover: Measuring the true impact of the digital economy.**

2. The Census Bureau of the U.S. Department of Commerce. (2014). **Quarterly Retail E-commerce Sales – 4th Quarter 2013.**

3. The Census Bureau of the U.S. Department of Commerce. (2023). **Quarterly Retail E-commerce Sales – 4th Quarter 2022.**

4. Stigler Centre for the Study of Economy and the State. (2019). **Stigler Committee on Digital Platforms.**

5. United Nations & United Nations Conference on Trade and Development. (2019). **Digital Economy Report.**

6. OECD. (2022). **Digital Enablers of the Global Economy of the Ministerial meeting of the Committee on Digital Economy Policy.**

7. Mitchell, S. (2021). **Amazon's Toll Road – Institute for Local Self-Reliance.** Institute for Local Self-Reliance.

8. Campbell, I. C., & Akole, C. C. (2021, August 24). **A guide to platform fees.** The Verge.

9. Rivero, N. (2021, May 26). **The 20-word clause that exposed Amazon to an antitrust lawsuit. Quartz.**

10. Sattva Knowledge Institute. (2022). **Open Network for Digital Commerce : Overview of the ecosystem and its capabilities.**

11. Open Network for Digital Commerce (ONDC). (2022). **Open Network for Digital Commerce: Democratizing Digital Commerce in India.**

12. ONDC | Open Network for Digital Commerce. **https://ondc.org/ondc-buyer-apps/,** viewed on 10th March 2023

13. FIDE. (2023). Concept note: Imagining Open-Mobility with Beckn.

14. World Culture Forum. (2022, November 14). **Tourism – World Culture Forum.**

15. Omidyar Network India & Boston Consulting Group. (2020). **The Potential of Open Digital Ecosystems.**

16. Sattva Knowledge Institute. (2022). **Digital Public Goods.**

17. Bain & Company. (2021). **How India Shops Online 2021.**

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# ABOUT THE AUTHORS

**FIDE,** or Foundation for Interoperability in Digital Economy (www.fide.org), is a not-for-profit organisation founded by Nandan Nilekani, Dr. Pramod Varma, and Sujith Nair. It is the genesis author of the Beckn Protocol and published the first version of the protocol in October 2019 as open source specification governed under a Creative Commons Licence. Since the release of the first version, FIDE has encouraged volunteers to review, update and maintain the protocol as a digital public good. FIDE continues to act as an angel donor to the protocol to enable its evolution. Along with other volunteers, FIDE promotes the adoption of the Beckn protocol to promote open, inclusive, and decentralised digital ecosystems across the globe.

**Sattva** (www.sattva.co.in) is a social impact strategy consulting and implementation firm. Sattva works closely at the intersection of business and impact, with multiple stakeholders including non-profits, social enterprises, corporations, and the social investing ecosystem. Sattva's work spans multiple states in India, multiple countries in Africa and South Asia, on the ground, and Sattva has engaged with leading organisations across the globe through its practice in a strategic advisory, realising operational outcomes, CSR knowledge assessments, and co-creation of sustainable models. Sattva works to realise inclusive developmental goals across themes in emerging markets, including education, skill development and livelihoods, health care and sanitation, digital and financial inclusion, energy access, and the environment, among others. Sattva has offices in Bangalore, Mumbai, and Delhi.