Telstra

Telcos Take on APIs

Sydney International Business Competition 2024

In collaboration with:

THE UNIVERSITY OF SYDNEY Business School

Telstra

SCC SYDNEY CONSULTING CLUB

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In collaboration with the University of Sydney Business School.

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Letter from Telstra

Dear Teams,

We are delighted to welcome you to the Sydney International Business Competition 2024. This year's case study focuses on Telstra, Australia's leading telecommunications company (telco), and the strategic decisions Telstra must make in the rapidly evolving world of Network Application Programming Interfaces (Network APIs).

Connectivity provided by telcos has become an integral part of everyday life and a critical enabler for many exciting new technologies. At Telstra, we have a proud history of being at the forefront of innovation – not only keeping Australia connected, but also finding new ways to create better experiences for our customers. One of the latest frontiers of technology is the field of Network APIs, which is a new tool to create value beyond “more and faster data”.

This case competition presents a unique opportunity for you to showcase your analytical skills, strategic insights, and creativity to put forward solutions at the frontier of telco innovation. We encourage you to approach this challenge with enthusiasm and an open mind.

With that in mind, we are excited to see the diverse perspectives and creative solutions that you will bring to the table. Your participation in this competition exemplifies the spirit of collaboration and excellence innovation that Telstra values deeply.

On behalf of the Telstra team, I wish you the best of luck in your efforts.

Warm regards,

Juliet Tompkins
Executive
Strategy & Performance

Company Background

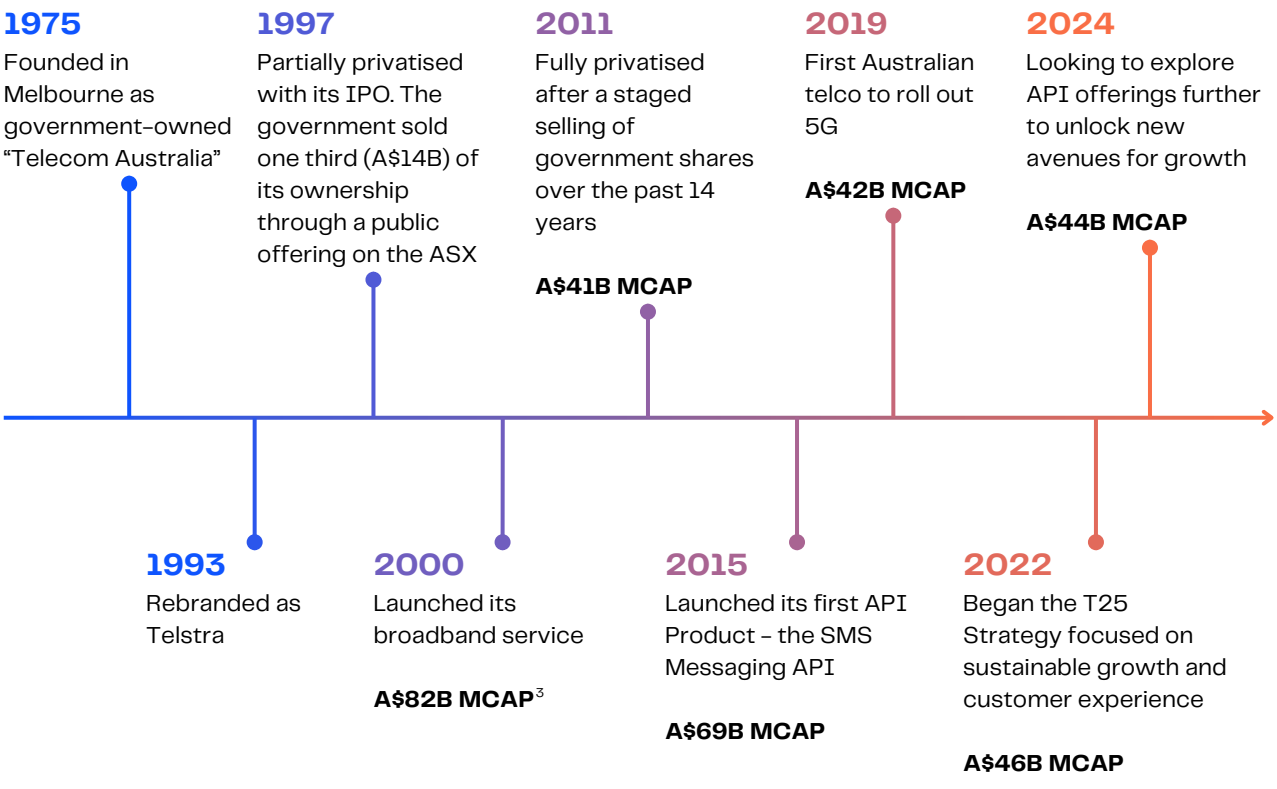
About Telstra

Telstra is Australia's leading telecommunications company (a "telco"), offering a wide range of communications services including mobile, internet and entertainment solutions, and competing in all telecommunications ("telecom") markets. It is one of the top 20 companies on the Australian Securities Exchange (ASX), boasting a market capitalisation of around A$44B (as of 30 June 2024) and a workforce of over 31,000. Its world-leading mobile network covers approximately 99.6% of the Australian population, supported by around 290 retail stores nationwide.[1]

The company's stated purpose is to build a connected future so everyone can thrive.[2] This is underpinned by 4 Strategic Pillars identified in their T25 Strategy:

1. Provide exceptional customer service you can count on
2. Provide leading network and tech solutions that deliver your future
3. Create sustained growth and value for our shareholders
4. Be the place you want to work

In line with Strategic Pillar 2, technological innovation has always been central to Telstra's strategy. The company continually seeks to leverage its connectivity capabilities and network assets to deliver value to the Australian population. In this regard, the rise of Application Programming Devices (APIs) in telecommunications offers Telstra a valuable opportunity to broaden its services and remain at the forefront of Australian technological innovation. Telstra is eager to identify the best ways to develop and expose its APIs and develop effective strategies for monetising these new offerings.



1 Telstra Annual Report 2023
2 https://www.telstra.com.au/aboutus/our-company
3 https://companiesmarketcap.com/aud/telstra/marketcap/

Company Structure

Telstra is separated into 9 business "groups" that each serve different functions, especially with regards to APIs.

1. **Global Networks & Technology (GN&T)**
   Builds APIs and manages Telstra's underlying infrastructure.

2. **Product & Technology (P&T)**
   Manages the Telstra Developer Portal, integrates APIs into product offerings, and chooses where APIs are exposed.

3. **Sustainability, External Affairs & Legal (SEAL)**
   Oversees all legal, regulatory, risk and compliance affairs, including government relations, sustainabiliity actions and First Nations Directorate.

4. **Telstra Consumer**
   Manages end-consumer offerings and relationships.

5. **Telstra Business**
   Manages business customer offerings and relationships.

6. **Telstra Enterprise**
   Manages enterprise customer offerings and relationships.

7. **People, Culture & Communications (PC&C)**
   Responsible for managing Telstra's ways of working, workforce management and organisational development.

8. **InfraCo**
   Telstra's dedicated infrastructure business, developed to build, maintain and drive value from Telstra's extensive infrastructure assets.

9. **Strategy & Finance**
   Coordinates strategy across all business groups, including Telstra's overall API strategy.

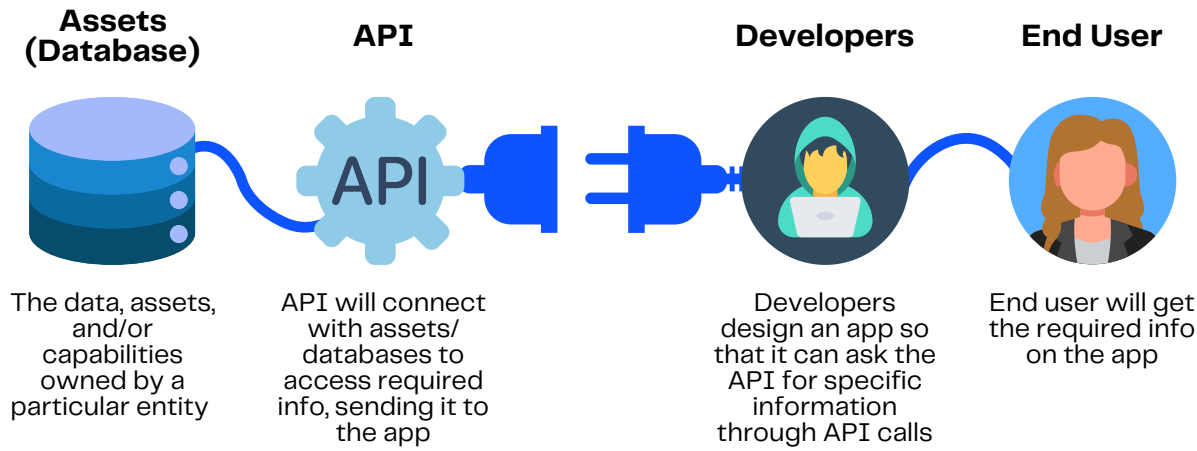
Telstra's Strategy and Finance group is responsible for shaping the company's overall API strategy and is **the group that teams are expected to pitch their solution to.** However, APIs play a role across all business groups, from their development (GN&T), productisation (P&T) and their use in managing customer relationships (Telstra Business and Telstra Enterprise).

Telcos & APIs

APIs: What Are They?

An Application Programming Interface (known as an "API") is a tool that allows apps to communicate with each other. It works by setting up a clear set of rules and protocols that both apps must follow to use the API and therefore exchange information. This means that the apps can share data without needing to be fully connected or integrated with each other. Essentially, APIs can be thought of as being a doorway or portal between two apps, allowing different things (i.e., data or program features) to "pass through" to the other app.

Developers use APIs when they need to quickly access the features and data of other applications without building complex integrations themselves. This saves time and resources for the developer while allowing the application owner to control what information is shared, ensuring security is maintained. These APIs become products when a company is able to package its software capabilities and/or access to unique data or proprietary information into a monetisable package and sell this to developers.



Example: Uber and the Google Maps API

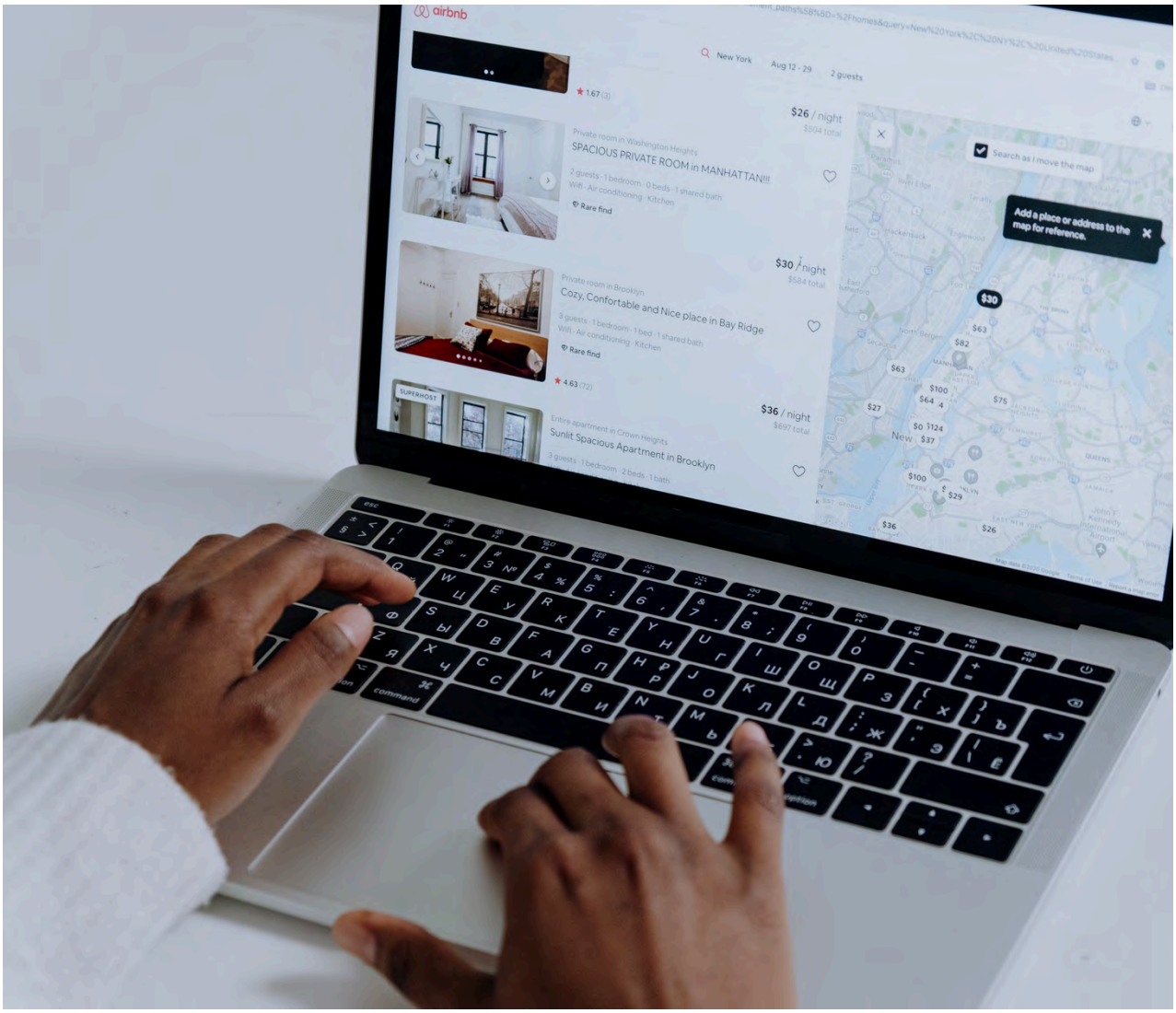
A typical example of an API product is the Google Maps API, which leverages Google's extensive mapping and satellite capabilities, allowing developers to integrate these features into their own applications. For instance, Uber, the on-demand transport company, may use the Google Maps API to provide real-time navigation, display the locations of drivers and passengers, and calculate routes and estimated arrival times. To do this, Uber developers would purchase a subscription to the API and write specific "calls" (i.e., requests for information or services from the API) into their code to access its features, building the rest of the app around this integration. The specifics of these calls are predefined in the API's documentation. The Google Maps API charges developers based on how often users access the maps feature in their app, with costs varying according to usage.[4] However, different payment models may be available depending on the API's features.

4 https://mapsplatform.google.com/pricing/

APIs: What Are They?

Example: Airbnb and the Twilio API

Another example, specific to the telecom industry, is the Twilio API. This was developed by Twilio to be a cloud-based communication API enabling developers to integrate communication capabilities such as SMS, voice calls, and messaging into their applications. Airbnb, the global accommodation platform, relies on the Twilio API to facilitate communication between hosts and guests. Through the API, Airbnb can send automated booking confirmations, reminders, and updates via text message, as well as allow users to contact each other directly while keeping their phone numbers private. Like Google Maps, Twilio charges for its services based on usage, with fees typically depending on the volume of messages sent or calls made.[5]



5 https://www.twilio.com/en-us/messaging/channels/sms

Telco APIs

It comes as no surprise that telcos were early adopters of APIs. They recognised that APIs could streamline internal operations and cut costs, as well as offer new ways to monetise the network capabilities that these telcos already possessed.

> *"Do not focus on the API, that's just a piece of technology, an enabler, the key is understanding the value contained within a telco and being prepared to take the risk in exposing that value ... to see what may happen"*[6]
>
> - Alan Quayle, Insights on the Telecom Industry

So what distinguishes a telco API? In the telecom industry, there are 3 main types of assets exposed to developers through APIs, with different associated capabilities:

1. **Network Connectivity:** This includes the physical infrastructure the telco owns or leases, such as cell towers, fibre optic cables, and satellites that provide internet access and mobile services. Through APIs, telco companies can offer access to features enabled by these assets, like sending and receiving SMS, making voice calls, and connecting to the internet.

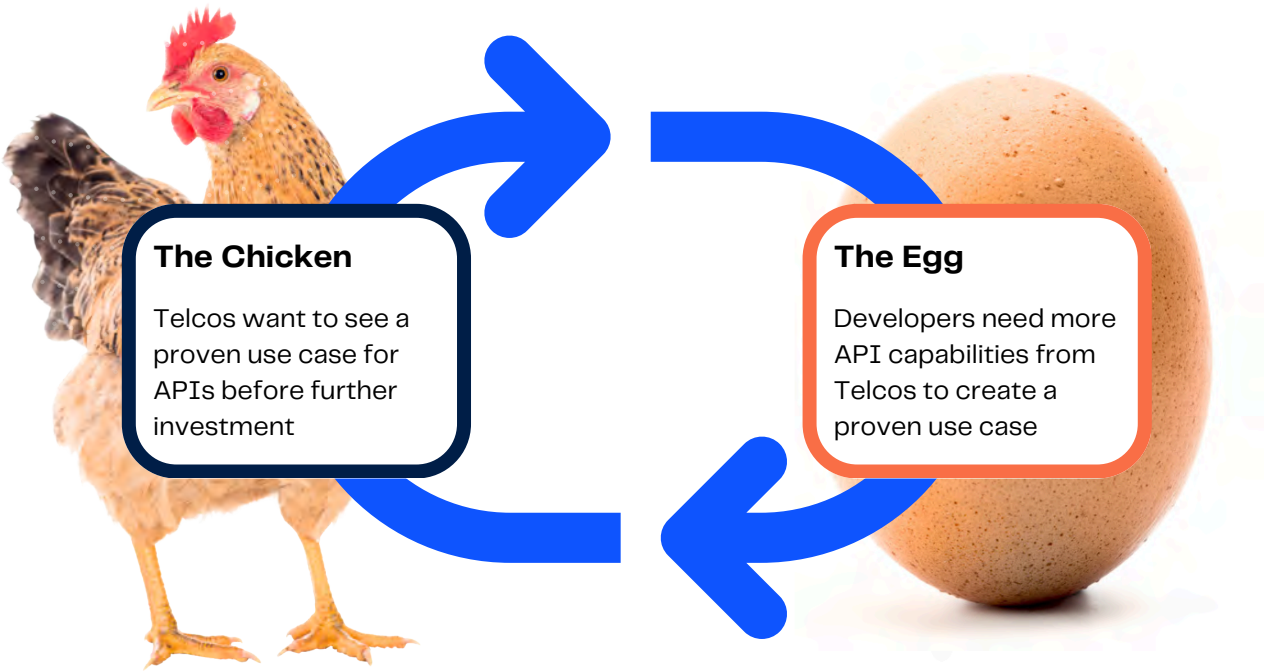
2. **Internet of Things (IoT):** Telcos offer connectivity for IoT devices like smart home sensors, connected cars, and industrial equipment. Through APIs, developers can manage device data and connectivity, and/or receive updates on device status, including information such as location and connection status (e.g. whether the device is online or offline.)

3. **User Data:** Telcos collect data on user activities, such as call logs, messaging history, and location. APIs can provide access to this data for services like personalised recommendations, usage analytics, and account management. However, user data is only shared with explicit user consent, so it is typically not included in APIs exposed indirectly to the broader developer market.

Over the past 20 years, many telcos have managed to effectively integrate APIs into their internal operations, as well as drive innovation in the various APIs on offer to developers. However, much less has been done on the commercial models of these offerings, including how these API products are exposed to developers, whether directly or indirectly, and importantly how these products can be monetised. Above all this, the industry's adoption of APIs is constrained by "the chicken and the egg" problem.

6 https://alanquayle.com/2012/06/a-brief-history-of-telco-apis/

Chicken and Egg Problem



The Chicken

There is a considerable amount of scepticism among telcos about how these APIs can truly drive revenues for them, which has reduced investment in this area. Before putting more money into expanding the telco API portfolio, telcos want to see:

1. Proven demand from developers and end users for API driven capabilities;
2. That there are direct revenues attributable to API products (i.e., that the business case isn't built on enabling other services); and
3. The potential scale and volume of API usage (rather than a focus on higher-value, low-volume APIs).

Without a fully fledged business case—a validated customer base, revenue model, and strong Return on Investment (ROI)—many telcos are somewhat hesitant to invest in further innovation and capabilities.[7]

The Egg

The problem, therefore, is that if telcos are hesitant to invest in new capabilities, developers have less to use and build upon. Many developers are excited to leverage telco APIs, but a major pain point is that the API capabilities provided by a single telco are only around two thirds of what developers need.[8] And, in most instances, the API capabilities aren't consistent across telcos – i.e., it is difficult for a developer to use API capabilities from two different telcos in the one app.

Developers thrive on testing new ideas, failing, and trying again until something sticks. Without giving developers enough API capabilities to comprehensively undergo this trial-and-error process, that perfect use case that telcos are looking for before they allocate investment is unlikely to arise.

7 https://stlpartners.com/articles/enterprise/telco-apis-and-open-gateway/
8 https://stlpartners.com/articles/enterprise/telco-apis-and-open-gateway/

The CAMARA Project

In order to address the chicken and egg problem, the GSM Association (a non-profit industry organisation that represents the interests of mobile network operators worldwide) launched the CAMARA project in 2022.[9] If successful (i.e., adopted by a majority of telcos), the project is anticipated to standardise key telco APIs and provide developers with the necessary "building blocks" to experiment with and test new ideas, potentially leading to the creation of innovative and impactful use cases for telco APIs. So what actually is the CAMARA Project? Put simply, **the CAMARA Project provides common definitions for standard telco APIs,** allowing developers to use a single codebase to access 5G capabilities across different networks.

A McKinsey study estimates the Network API market could unlock $100B to $300B in connectivity (primarily 5G) revenue for telcos, with an additional $10B to $30B in revenue just from the API products themselves.[10] However, the study suggests that reaching the upper end of this revenue opportunity requires collaboration within the telco industry to ensure the APIs offered are interoperable – i.e., developers can build standardised applications that function across multiple telcos' APIs without needing to significantly modify their code for each provider. The GSM Association believes CAMARA APIs are the best way to do this.

However, although over 40 of the world's top carriers have agreed to adopt CAMARA's API standards, only a few have made these APIs available for developers to use commercially. This hesitation is partly due to concerns about investing in an emerging market and uncertainty about how they will make money (i.e., the chicken mentioned previously). But also, McKinsey suggests telcos with better networks worry that they could lose their competitive edge because the standard for features like speed and latency might be set by the lowest-performing carriers in each market.[11]

In Australia, CAMARA API adoption is still in its early stages. The market, distant from the telco innovation hubs in Europe and the Americas, tends to lag behind global competition. As such, in a young industry with undefined competitive dynamics and an uncertain future, Telstra faces a choice: attempt to grow the entire market through adopting CAMARA APIs and collaborating with competitors, or engage in zero-sum competition to grab the largest market share.

9 https://www.gsma.com/solutions-and-impact/technologies/networks/5g-network-technologies-and-solutions/
10 https://www.mckinsey.com/industries/technology-media-and-telecommunications/our-insights/
11 https://www.mckinsey.com/industries/technology-media-and-telecommunications/our-insights/

API Exposure Options

Direct vs Indirect

The majority of APIs used by telcos are for internal use. APIs speed up operations by allowing different business functions to easily integrate with each other without completely interlocking systems.

APIs for internal use ARE NOT the focus of this case.

External APIs leverage a telco's assets and capabilities into an API product offered to developers (either directly or indirectly). External APIs have the potential to be monetised and provide new revenue streams.

For this case, Telstra is particularly interested in exploring External APIs.

This entails "exposing" the API to the developer community for any developer to access and develop their own capabilities upon. Think of this as "peeling back the curtain" and allowing any developer to come and build something with the exposed piece of infrastructure or data (see "Telstra's Indirect APIs" for examples). This availability model encompasses the vast majority of telco APIs, and is usually monetised on a monthly subscription, usage-based or revenue sharing model. This approach is easy to implement and can attract many developers, but it generally does not generate high value from each customer.

Offering an API product directly means the telco uses an API to develop their own product on top of this API's core capabilities, and then offers this entire product to the market. In essence, they're doing the work that a developer would do when building upon an indirectly available API. In some cases, the telco will build this entire product themselves, but in many cases, the telco will partner with another company with complementary capabilities to create a new product that neither could create themselves (see "Telstra's Direct APIs: In Partnership with CBA" for an example for a Direct API with a partner). Offering APIs directly involves more development effort and takes longer to launch. However, a telco may choose this approach if they have valuable API capabilities and want to retain control over them.

Telstra's Focus

For this case, Telstra must decide where to focus their API efforts: should they expose API products indirectly, allowing others to come in and develop on top of them? Or should they build directly on top of APIs and create the products themselves?

Monetisation & Risks

API Monetisation Options

The question of how to monetise these API products is still being explored. Under the direct availability model for APIs, monetisation is more straightforward because the API itself is not monetised, but rather the product built on top of this API. As such, it is essentially treated as a typical B2C or B2B product. However, commercial monetisation models for APIs made available indirectly are largely unclear in the industry worldwide, with most telcos evolving their monetisation model as they mature. Despite this uncertainty, here are some of the monetisation models currently being tested in the industry:[12]

1. **Subscription:** Pricing is based on a predefined level of API usage. It is for customers who want predictability and consistency in their costs
2. **Pay-as-you-go:** Pricing is based directly on usage with no minimums. Here, the API derives direct revenue from usage and scales with consumption
3. **Revenue Sharing:** Take a share of revenues generated by the 3rd party developers by having these developers report their sales
4. **No Direct Monetisation:** No direct exchange of money for API usage and the API is instead used to drive volume and/or "stickiness" of an associated product

Risks with APIs

A key advantage of APIs is that they allow telcos to share specific functions with developers while keeping their software secure. However, APIs must be carefully managed to avoid significant data security risks.

A major example is the Optus security breach. Optus, Australia's second-largest telco and Telstra's main competitor, suffered a breach in September 2022 that exposed personal information of up to 11.2 million customers. The breach was due to vulnerabilities in their API infrastructure, which hackers exploited to access sensitive data like names, dates of birth, phone numbers, and in some cases, addresses and ID numbers.[13]

When developing APIs that handle personal information, Telstra must address these data security risks carefully. This may involve choosing more secure methods of exposing the API or deciding against indirectly exposing the API altogether.

12 https://www.analysysmason.com/research/content/articles/mwc-camara-gateway-rdmv0-rma04/
13 https://www.itnews.com.au/news/optus-breach-allegedly-enabled-by-access-control-coding-error-608985#

Telstra & APIs

Telstra's Indirect APIs

In 2015, Telstra launched its first Application Programming Interface (API) product: an SMS API enabling developers to integrate Telstra's SMS capabilities – such as sending, receiving, and querying SMS messages – into their software applications. Leading the new API team, Frank Arrigo emphasised the innovation potential of APIs, stating, "When we talk about APIs, it's about stirring innovation – giving the ability to create unexpected delightful things."[14] Since then, Telstra has exposed 9 APIs to the developer community and developed 1 direct API offering in partnership with Commonwealth Bank of Australia (CBA).

For this case, Telstra is looking to extend its API product offerings believing they have only just begun to tap into the vast possibilities APIs can offer. In particular, while they have primarily used APIs to complement other Telstra services, the company now aims to develop more APIs that are monetisable in and of themselves.

Telstra's Indirect APIs

Telstra's current indirect API portfolio consists of 8 APIs that are grouped into 4 categories (for further details see Telstra's website):[15]

1. **Communication:** Exposes Telstra's communication capabilities brought from its physical assets
2. **Network:** Provides access to Telstra's network capabilities, including bandwidth management and programmable network resources for managing connectivity and server capacity
3. **Internet of Things (IoT):** Leverages data from all objects that include a Telstra SIM
4. **Cloud:** Provides tools for monitoring, managing, and optimising computing, storage, networking, and application performance.

Note that 7 of Telstra's 8 indirect APIs are not monetisable as standalones. These APIs are typically developed for specific Telstra business or enterprise customer groups and are only accessible if the customer is already part of the Telstra ecosystem. Telstra gains value from these APIs by increasing customer engagement or encouraging the use of other associated Telstra products.

14 https://www.itnews.com.au/news/telstra-opens-first-public-api-to-developers-400351
15 https://dev.telstra.com/apis

Telstra's Indirect APIs

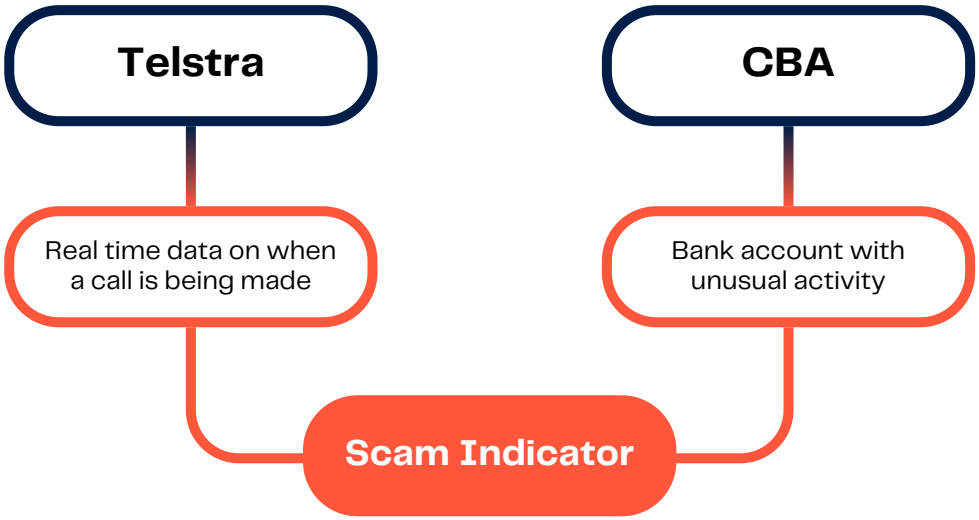
API*	Description	Monetisation	Additional Specifications
Communication			
Messaging API	Allows developers to add SMS messaging into their apps.	Pay-as-you-go	n/a
Mobile Push Notifications	Allows developers to add push notifications using Telstra's connectivity. Currently in beta phase.	Beta Phase	n/a
Network			
International Pricing API	Provides access to pricing info from the International Pricing System (IPS) without needing a direct subscription	No public information available	Partner API that requires IPS permission for customers to use
Programmable Network API	Enables customers to manage network resources (i.e., bandwidth, and server capacity) through software instead of physical hardware	No public information available	n/a
Internet of Things (IoT)			
Telstra Spacial Insights Telemetry API	Collects and provides data on the location and movements of objects that have a Telstra SIM	No public information available	n/a
Track and Monitor API	Allows tracking and monitoring of assets with a Telstra SIM to provide updates on location and condition	No public information available	Must be a Telstra business customer to access
IoT Connectivity Service API	Enables connection of IoT devices to Telstra's network, allowing data transmission and remote management	No public information available	Must have a Telstra IoT Connection Manager account to access
Cloud			
Telstra Cloud Sight API	Allows businesses to monitor and manage their cloud services, including usage and performance tracking, all in one place	No public information available	Some features incur fees, but the nature of these are undefined

*Telstra also has a Simple Edge Discovery API. You can find out more about this API on the Telstra Developers website linked here, however it is not the focus of this case.

Telstra's Direct APIs

In Partnership with CBA

Alongside its indirect API products, Telstra has partnered with the Commonwealth Bank of Australia (CBA) to launch Scam Indicator, a scam detection tool powered by a number verification API that leverages Telstra customers' first-person user data. This API provides real-time data on whether a call is being made from a specific phone number. CBA's system then matches this number to the account showing unusual activity, allowing the bank to verify if a customer is on a call during a suspicious transaction. This enables CBA to contact the customer or perform additional checks, helping to prevent large transfers to scammers.



To protect customer privacy, CBA can only access specific data points related to scam prevention through the API and cannot access the content of communications or other underlying customer data. Early simulations suggest that the Scam Indicator could double the success rate of phone scam detection and prevention, potentially saving vulnerable Australians up to $15–20 million annually.[16]

For Telstra, this collaboration represents an opportunity to derive additional monetary value from its existing data by pairing it with complementary offerings from a trusted partner. CBA benefits by paying Telstra for access to its number verification API, allowing them to differentiate their services and enhance customer experience.

16 https://www.telstra.com.au/exchange/cyber-security-and-safety/cyber-safety/telstra-scam-indicator

New APIs Under Consideration

For the purposes of this case, Telstra is planning to expand its API offerings with several new APIs that they believe have strong potential.* Three of the many potential options have been shortlisted below. However, the business cases and monetisation models for these APIs have not yet been fully developed. Telstra are interested to know which of these APIs they should prioritise and develop first. Additionally, how should they build a business case around this particular API?

NB: The below information is not to be construed as fact outside of this case. While they may or may not be under consideration by Telstra, these scenarios have been constructed for the benefit of this SIBC case and are not representations of Telstra's past, current or future positions, intentions, or actions.

Quality-on-Demand API

Description: Allows developers to dynamically manage the quality of connectivity service consumed by their applications. Essentially, it is your "everyday connectivity," but better, when you need it to be. Using this API, developers start with the default quality of connectivity but can dynamically boost their service only when required for specific periods of time. This approach can improve the performance of the network, by maximising the connection speed and/or creating more stable latency (ie. reducing the inconsistency of connection). Importantly, connectivity capacity in a single region (i.e., provided by a single cell tower) is limited. If too many applications request a boost in quality at the same time in the same area, it could max out the capacity, making the boost ineffective.

Example Use Case: A sports betting company relies on strong connectivity during the 2 minutes leading up to a horse race. During this time it is essential that their end consumers can place bets instantaneously. This company would benefit from being able to "boost" the quality of their connectivity services during this period.

Number Verification API

Description: Allows mobile apps to "silently authenticate" a user's phone number if they have a Telstra mobile plan. It works similarly to the API used in the Telstra/CBA Scam Indicator. The goal is to simplify or speed up the authentication process, potentially removing the need for 2-Factor Authentication (2FA) when logging into a mobile app or during user registration. It is designed for industries where there is high fraudulent activity and authentication measures need to be secure.

Example Use Case: An online gaming platform wants to streamline account access while enhancing security. For players with Telstra mobile plans, the platform uses this API to silently verify their phone numbers. This strong authentication measure not only simplifies the login process but also reduces the risk of hackers spoofing the system, making account access more secure.

*The APIs listed here are based on market research of APIs that have been considered by many telcos across the industry (e.g. including those based on CAMARA). They are not to be taken as reflecting Telstra's past, current, or future business strategy.

New APIs Under Consideration

Device Reporting API

Description: This API lets IoT devices send status updates to a central server. It provides details such as the device's precise location, connection status, signal strength, and whether it's roaming, including the country. This helps reduce the need for employees to travel to remote areas to check the devices' status or identify potential issues. Note that this API is similar to Telstra's current Track and Monitor API, but would not be limited to only Telstra business customers.

Example Use Case: A utility company uses IoT sensors to monitor water levels in remote reservoirs. Instead of performing routine checks, the company receives alerts when a device loses connection. This allows them to promptly send an employee to address and fix the issue, ensuring more efficient maintenance of the IoT devices.

Other Options

The options presented above are by **no means an exclusive list.** There are many options out there about possible APIs that could be implemented. Teams are welcome to explore other options, such as those discussed on the CAMARA website.[17]

Some other options that might be worth considering include:

- **Home Devices Quality on Demand:** allows developers to adjust the quality of connection that wifi-connected devices utilise. This is much like the QoD API extracted above, but focused on home devices instead of mobile devices.
- **Sim Swap**: allows developers to identify the last time the SIM card associated with a particular phone number was changed.
- **Carrier Billing:** allows online merchants to request and accept payments for other goods against the mobile carrier's billing service.

17 https://www.gsma.com/solutions-and-impact/gsma-open-gateway/gsma-open-gateway-api-descriptions/

Industry & Markets

Competition

While Australia is generally lagging behind international competitors in regards to APIs, Telstra currently leads the charge with API development and productization in the country. However, Telstra's current offerings are somewhat limited, and its market leadership is far from guaranteed. Its main competitors, Optus and Vodafone, are also exploring API opportunities. Also, because the industry's competitive dynamics are still unfolding, smaller players have the potential to carve out significant niches in the market if they are able to find and develop the right use-case for an API. Should Telstra wait and see what opportunities and use-cases for APIs emerge or move quickly to cement their leading position in the market?

Optus

Optus is the 2nd largest telco in Australia and Telstra's largest competitor. Optus has been in the Australian market since 1981 when it started as a government-owned entity known as AUSSAT Pty Ltd.[18] It originated as one of the first national communications satellite companies in Australia and over time emerged as a key player in the Australian market. In October 2001, they were fully acquired by SingTel, a Singapore based telecom conglomerate, who have owned the company since. Optus now serves over 11 million customers in Australia, with their network now reaching more than 98.5% of the Australian population.[19]

Optus currently has 9 APIs available for indirect developer usage. These range from their 2FA Rest API (which allows the integration of 2-factor authentication in an application) to their HTTPS API (which integrates an SMS gateway into an application and allows applications to send messages to customers).[20]

Vodafone

Vodafone Australia is a subsidiary of TPG Telecom, which also owns other brands like TPG, iiNet and Felix. Their network covers more than 23 million Australians and has over 5.25 million customers.[21]

Vodafone Global has an extensive API catalogue[22] with 14 APIs, 2 of which are built to CAMARA standards, but has not yet expanded it into Australia. However, should Vodafone look to enter the Australian market with its APIs, its broader capabilities and offerings could potentially surpass Telstra's and position Vodafone as the market leader.

18 https://sky-brokers.com/supplier/optus-australia/
19 https://www.optus.com.au/content/dam/optus/documents/about-us/sustainability/reporting/2023/
20 https://sms.optus.com.au/docs/en/api-documentation/
21 https://www.vodafone.com.au/about
22 https://developer.vodafone.com/api-catalogue

Developers

The customers and use-cases for telco APIs are innumerable, largely because the industry, especially in Australia, has much left to explore. Nonetheless, most of the types of customers that may be interested in Telstra's API offerings can be broken down into 4 broad categories: enterprise, startup, SME, and freelance developers.

	Enterprise Customers	Startup Customers	SME Customers	Freelance Developers
Description	Large organisations with complex needs, often requiring custom solutions and integration with existing systems.	Agile and innovative companies, focused on rapid development and scaling new products or services.	Small businesses focused on sustainable growth and low risk, seeking efficient and cost-effective technical solutions.	Independent developers or small teams working on niche projects or freelance assignments.
API Requirements	Scalable APIs for high data volumes that can integrate with complex systems and are customised to specific needs. They prefer strong security, compliance, and dedicated technical support.	Flexible APIs that can be quickly integrated, with room for experimentation and iteration. They prefer standardised APIs that can be combined with multiple telco capabilities.	Simple, cost-effective APIs with clear documentation, easy integration, and moderate flexibility. Scalable enough to grow with business needs, whilst keeping costs manageable and consistent.	Simple APIs with clear documentation and low barriers to entry. They value sample code, community support, and low-cost or freemium options to manage limited resources and deploy quickly.
Value Per Customer				
Number of Customers				
Development Resources				
Risk Appetite				

An API product does not need to exclusively service a particular customer group. However, it is important to think through the potential, high-value use cases of the API and what types of developer customers will likely be using it. This may inform what features, availability, and monetisation models are best for the API offering.

High
Moderate
Low

The Challenge

The Challenge

The future of APIs for telcos remains uncertain. While experts anticipate telco APIs have the potential to unlock massive value for telcos, this has yet to materialise, and no telcos in Australia have made the first move. So the question for your team is:

How should Telstra proceed with its APIs to maximise value to the company?

This will likely involve answering some or all of the below questions:

1. Out of the 3 APIs Telstra has shortlisted in this case or other APIs of your choosing, which should be prioritised and developed first? What are their most valuable opportunities or use cases?

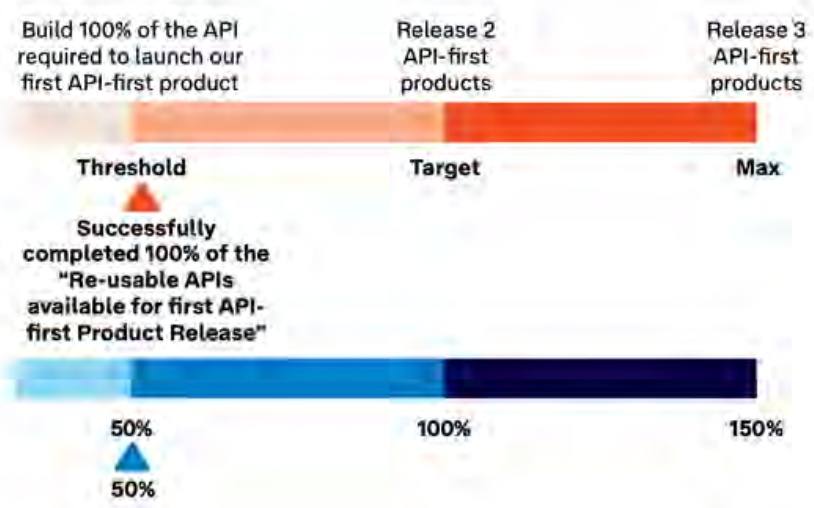
2. How should Telstra make these APIs available? Indirect or Direct? Or potentially a mixture of both? If indirectly, how should the APIs be monetised and what target customers are envisioned for these offerings? If directly, what type of product should Telstra build on top of the API capability? Is there a partner Telstra should work with and, if so, what would the partnership agreement look like?

3. Does Telstra need to move quickly to seize emerging opportunities and cement its leading position? What anticipated investment does Telstra need to make, and what returns on that investment can it expect?

Your solutions should focus on **1–2** API product offerings and provide an implementation plan with how these APIs should be exposed and managed over the next **3–5** years.

Appendix

Telstra FY2024 Digital Leadership Targets and Performance Outcomes



We have successfully completed 100% of the "Re-usable APIs available for our first API-first Product Release (%)". The assessed performance on this measure was at FY24 EVP threshold. The calculation of this result was reperformed by our external auditor, EY.

Overall we delivered 54 APIs to support an API-First Product release. This included 31 IT as a Service (ITaaS) and 23 Network as a service (NaaS) APIs completed at the end of FY24. We did not meet our FY24 target (of 2 product releases). In May 2024, we determined to delay a product release in June to ensure it delivered a better customer experience. However, we are targeting a number of product releases for FY25.

Your challenge is related to developing a strategy for these API products

The Chicken and The Egg Problem, Excerpts

Find the complete article in the footnote.

Last year at MWC 2023 the Open Gateway initiative had 21 signatories – this year, the GSMA promoted it's up to 47 telco signatures to push forward on the topic of telco APIs.

On top of this, a handful of the telcos who are part of the Open Gateway initiative (including DT, Orange, Telefonica) demoed live network APIs (e.g. in number verification – trying to tap into the existing CPaaS market), as well as highlighting their continued PoCs in QoD (especially in live video broadcast).

But... this was only a small number of the 47 who signed MoUs as part of the initiative and many of the telcos who are a part of Open Gateway didn't give much, if any, real estate to the topic (mostly in favour of hitting the AI buzz word).

Breaking the cycle with telco APIs: unlocking value in NaaS and programmable networks

Without capabilities to build on and test out, developers won't see the value of API-driven NaaS and programmable network propositions to identify leading use cases... and without a well established/well validated market demand, the telcos won't invest in further capabilities for developers to build on... thus, the flywheel won't turn and the opportunity will have stalled before it's had the chance to scale (much like it did in previous attempts by the telecoms industry to adopt APIs).

So, how does the industry stop this from happening again and break this cycle, giving the market a chance to scale?

Break some eggs...

A bit tongue and cheek, and certainly guilty of mixing metaphors, but what better way to break the chicken and egg scenario than by "breaking some eggs"...

Effectively, telcos need to allow themselves to fail fast in this market. They say they want to "throw stuff at a wall and see what sticks" but if they're only throwing two or three capabilities at the wall, will they find anything that sticks?

Telcos (certainly versus techcos) haven't historically been good at "failing fast" – so, what can they do to break eggs in this market?

Source: https://stlpartners.com/articles/enterprise/telco-apis-and-open-gateway/

Telstra FY2024 Summary Consolidated Income Statement

Financial results

Summary reported results	FY24 $m	FY23 $m	Change %
Revenue (excluding finance income)	22,928	22,702	1.0
Total income (excluding finance income)	**23,482**	**23,245**	**1.0**
Operating expenses	15,938	15,356	3.8
Share of net loss from equity accounted entities	(16)	(27)	40.7
EBITDA	**7,528**	**7,862**	**(4.2)**
Depreciation and amortisation	4,479	4,470	0.2
EBIT	**3,049**	**3,392**	**(10.1)**
Net finance costs	584	529	10.4
Income tax expense	677	812	(16.6)
Profit for the period	**1,788**	**2,051**	**(12.8)**
Profit attributable to equity holders of Telstra Entity	**1,622**	**1,928**	**(15.9)**
Earnings per share (cents)	14.1	16.7	(15.6)
Free cashflow	**2,059**	**851**	**n/m**

Underlying versus reported results[1]	FY24 Reported results $m	FY24 Guidance adjustments $m	FY24 Underlying results $m	FY23 Underlying results $m
Total income	23,482	(81)	23,401	23,245
EBITDA[2]	7,528	715	8,243	7,950
Free cashflow[3]	2,059	927	2,986	2,784

Telstra FY2024 Summary Balance Sheet

Financial position

Summary statement of financial position	FY24 $m	FY23 $m	Change %
Current assets	6,107	6,733	(9.3)
Non-current assets	39,443	38,296	3.0
Total assets	**45,550**	**45,029**	**1.2**
Current liabilities	11,526	10,092	14.2
Non-current liabilities	16,772	17,121	(2.6)
Total liabilities	**28,198**	**27,213**	**3.6**
Net assets	**17,352**	**17,816**	**(2.6)**
Total equity	**17,352**	**17,816**	**(2.6)**
Return on invested capital (%)	6.8	7.9	-1.1pp
Return on invested capital (%) – underlying[20]	**8.3**	**8.1**	**+0.2pp**
Return on average equity (%)	10.7	12.5	-1.8pp

Telstra FY2024 Cash Flow Summary Statement

Cash flows

Summary statement of cash flows	FY24 $m	FY23 $m	Change %
Net cash provided by operating activities	7,049	6,802	3.6
Net cash used in investing activities	(4,990)	(5,951)	16.1
– Capital expenditure (before investments)	(5,064)	(3,870)	(30.9)
– Other investing cash flows	74	(2,081)	n/m
Free cashflow	**2,059**	**851**	**n/m**
Net cash used in financing activities	(1,942)	(969)	n/m
Net increase/(decrease) in cash and cash equivalents	**117**	**(118)**	**n/m**
Cash and cash equivalents at the beginning of the period	932	1,040	(10.4)
Effects of exchange rate changes on cash and cash equivalents	(3)	10	n/m
Cash and cash equivalents at the end of the period	**1,046**	**932**	**12.2**

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