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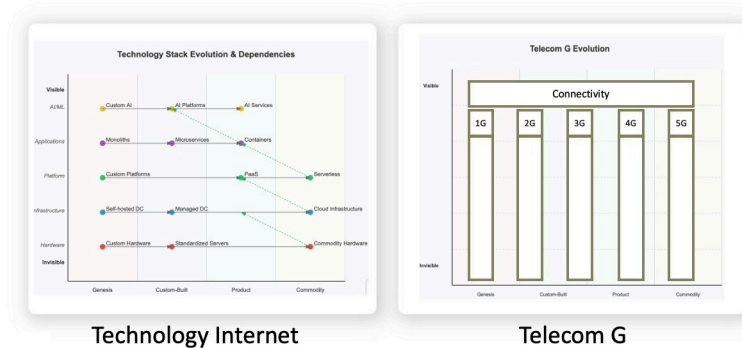
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### Internet evolution versus Telecom evolution



Internet evolution versus Telecom evolution

## The Gap: Why Internet Outpaces Telecom

**Geoff Hollingworth**

Not a normal CMO. Rakuten Whisperer. Rakuten Symphony



February 16, 2025

Another cold weekend, another weekend thinking and writing.

**Why is telecom not leading technology advancement?**

(A little bit of "Rakuten Whispering" at the end).

### Executive Summary

**The telecom industry stands at a pivotal moment of transformation.**

While historically taking a vertically integrated approach, the industry now has an unprecedented opportunity to accelerate innovation by embracing the collaborative, layered evolution model that has driven internet technology success. Through Wardley mapping analysis, we can understand why internet innovation has outpaced telecom - and more importantly, how telecom can leverage this insight to drive explosive growth in the coming years.

**NOTE: I am not a mapping expert and these maps are directional only.**

Mapping is not intended to deliver absolute answers but rather to stimulate conversation around a common framing of subjects that tend to be complicated. Thank you to [Simon Wardley](#) and the whole mapping community. To learn more about Wardley mapping, visit [Wardley Mapping](#).

## Understanding Wardley Maps: A Primer

**First, let's demystify Wardley mapping** – it is quite a simple but powerful concept.

**A Wardley map shows how components of a system evolve from genesis (new/novel) to commodity (standardized/utility) while visualizing their dependencies.**

Simon Wardley created this mapping technique to help organizations understand their technology landscape and make better strategic decisions. Think of it as a value chain turned sideways:

1. **Vertical axis:** Shows visibility to the user (visible at top, invisible at bottom)

2. **Horizontal axis:** Shows evolution from left to right

- Genesis: Novel/new
- Custom-built: Starting to be understood
- Product: Well-understood/refined
- Commodity: Standardized/utility

**As technologies mature they naturally move from left to right,** becoming more known, more industrialized and more available. The end state of valuable technologies is as a commodity, or utility. This is when they are universally available and easy to reliably consume.

Mapping is used to strategically decide where to put company resources to best differentiate an intended business. Rebuilding a commodity can be seen as a bad investment unless there are clear strategic or financial reasons, that are significant to justify the time, effort and investment.

## A Tale of Two Evolutions

Looking at the two maps, the contrast is striking.

### The Internet Evolution:

- Started with custom hardware (a long time ago)
- Moved to standardized servers
- Evolved to cloud infrastructure
- Enabled Platform-as-a-Service
- Now driving AI and advanced services

**Each layer builds on the commoditization of the layer below,** creating new value at higher levels of abstraction.

### The Telecom Evolution

- Remains vertically integrated
- Each "G" rebuilds the entire stack
- Focus mainly on connectivity
- Limited abstraction or reuse

- Slow to embrace external innovation

## The Cost of Vertical Integration

The telecom industry's "not invented here" mindset has created several challenges:

1. **Slower Innovation Cycles:** Each advancement requires changes throughout the entire stack
2. **Higher Costs:** Duplicating functionality that exists as commodities elsewhere
3. **Limited Leverage:** Unable to benefit from broader technology community advances
4. **Reduced Focus:** Energy spent on lower-level components instead of new value creation

## The Promise of Change

Here's where it gets exciting. Telecom has never been more important or had more opportunity:

1. **Cloud Native Technologies** are mature and ready for telecom adoption
2. **Open RAN** is breaking down traditional vendor lock-in
3. **API Economy** enables new service creation and monetization
4. **Edge Computing** creates new value opportunities
5. **AI/ML** can transform operations and customer experience

The value of adopting any of the above is if it enables you to do something differently.

## The Path Forward

The industry is already showing signs of transformation:

**Rakuten Mobile** embraced all these technologies and built Japan's first cloud-native network with just 250 people operating it. For **Rakuten**, an internet software company, this is obvious, it is already using all of these technologies (except Open RAN) in the rest of its 70+ businesses. **Rakuten Mobile, Inc.** e just released it's 2024 end of year results:

Rakuten Mobile as an individual business recorded revenue of 283.9 billion yen, up 26.2% YoY, driven by subscriber growth and higher data ARPU. Combined with the effects of ongoing cost reductions, Non-GAAP operating losses\*8 improved by 85.0 billion yen YoY to 216.3 billion yen.

**Growing subscribers, growing revenues per subscriber, continuously reducing costs** are what we call "Intelligent Growth". This is not building a network and looking for people to use it, but integrating a network into people's lives and making it work for them at a price they can afford. The heaviest users of mobile broadband are Rakuten Mobile customers. If you sell something it is strange if you try and discourage people from using it. Rakuten wants to make all online life more accessible and better.

**Traditional operators** are increasingly embracing these open architectures and open technologies and **Rakuten Symphony** is very excited to be working with many of them, helping to learn from our existing learnings and blueprints.

## Conclusion: The Future is Bright

Telecom's fundamental value - connecting people and things - has never been more critical. By embracing the layered evolution model that drove internet innovation, telecom companies can:

- **Accelerate Innovation**
- **Reduce Costs**
- **Improve Competitiveness**
- **Create New Value**


**The future of telecom isn't about protecting the past** - it's about embracing the opportunities of today to build something even better for tomorrow.

**The only question is: who will lead this transformation?**

The likely answer is those that have started already or those **that start today**.


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**Geoff Hollingworth**
Author
5mo

Not a normal CMO. Rakuten Whisperer. Rakuten Symphony

A great private comment from a friend. Thoughts please?  
"A delightfully provocative piece...

It provoked me into a different conclusion however. Perhaps the problem is that the mobile system isn't a platform you can build ...more

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**Neil McRae**
1st
5mo

Learning more and more about telecommunications and technolog...

I love it when those not in the know talk our industry down! 🤔

Geoff when was the last time you went to a tier 1 telcos research lab?

One example of huge innovation is quantum where telcos are q...more

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**John Francis Nolan** • 1st  
Managing Partner working with investment houses, telco/ISP...

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There is no Internet without telecom.

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**Richard Bennett** ✓ • 1st  
Founder and Publisher, High Tech Forum

4mo ...

[Geoff Hollingworth](#) You're being a little too cute.

Like | Reply



**Sebastian Barros** • 1st  
Managing director | Ex-Google | Ex-Ericsson | Founder | Author | D...

5mo ...

I would argue that the biggest different between Telcom and internet industry is regulation. This really determine your business model and also what you can do with technology. For decades internet companies use people data to make revenues without any restriction. Besides they could provide a service without any SLA and no commitments w ...more

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**Neil McRae** ✓ • 1st  
Learning more and more about telecommunications and tec...

5mo ...

[Sebastian Barros](#) regulation is a very important point!

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**Kevin Shatzkamer** ✓ • 1st  
CVP, Microsoft Customer Experience [X-Google (Applied AI) | X-D...

5mo ...

I think the "miss" here is recognizing that the Internet ecosystem is overwhelmingly staffed by software engineers and minimal dependence of vendors to deliver the components that became "cloud", or "PaaS", or "SaaS".

Any ecosystem in which the dominant motion for building their p ...more

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**Dave Duggal** • 1st  
Founder and CEO @EnterpriseWeb

5mo ...

[Kevin Shatzkamer](#) - That is a good add with meaningful distinction. Despite 12 years of keynotes on open networks, competition and innovation, the industry is more dependent on those NEP stacks than ever. That being said, the gaps in the stacks for Network Operations are filled with assorted tool: ...more

Like | Reply



**Dave Duggal** • 1st  
Founder and CEO @EnterpriseWeb

5mo ...

[Sebastian Barros](#) - Telcos have talked "transformation" in keynotes for last 12 years, but in actuality there's been very little of it. The market is "owned" by 5 vendors. Telcos are risk adverse at their core. Their procurement processes are intended to drive out small innovators. As we've seen with Casa and Mavenir, even well funded companies ...more

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**Kevin Shatzkamer** ✓ • 1st  
CVP, Microsoft Customer Experience [X-Google (Applied AI)]...

5mo ...

[Neil McRae](#) 100% on bandwagon to bandwagon.

Like | Reply



**Monica Paolini** • 1st  
Principal at Senza Fili

5mo ...

**Geoff Hollingworth** I am still scratching my head on the Wardley maps - but I think there is another dimension here. Internet services use telecom as one of their channels to their users and in fact they have access to ALL networks. I can use Netflix over any access interface and, aside from regulatory and geopolitical issues, Netflix can o ...more



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A conversation with Udai Kanukolanu at Rakuten Symphony on how network transformation enables new...

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**Geoff Hollingworth** Author  
Not a normal CMO. Rakuten Whisperer. Rakuten Symphony

5mo ...

**Monica Paolini** I agree Rakuten is good to understand, it bridges both worlds that do not have to be that different. It is only the lowest layers that are specific and behave according to different cycle models. Telecom can increasingly address the total market on many levels, eSIM doubles the addressable market size ...more

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**Jeffrey DeCoux** • 1st  
Chairman, Building Intelligent Infrastructure Economic Zones, Aut...

5mo ...

Ethernet and WiFi are Eating the World.  
As the Digital and Physical worlds merge, we will Free our Spectrum and flatten the wireless networks: Solutions like Artificial Intelligence, Intelligent Transportation, and Autonomous Systems will require an entirely new network of services to support any scaled adoptior ...more



**Good story from Jeff KAGAN, RCR Wireless News: Wi-Fi is wicked (wonderful); its story...**  
Good story from Jeff KAGAN, RCR Wireless News: Wi-Fi is wicked (wonderful); its story should be better told....

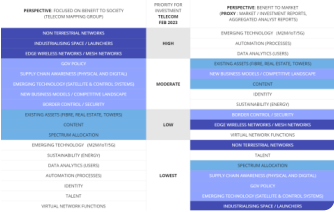
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**Simon Wardley** • 1st  
I like ducks, they're fowl but not through choice. Wardley Mapping...

5mo ...

From the 2022/23 Telco Group (mapping out multiple perspectives and aggregation of investment opportunity). The market driven focus is a cliff, the societal driven focus (where the long term benefit lies) is already occupied. Tough times ahead for Telco. It didn't have to be this way. ...more



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**Nicholas Clarke** • 2nd  
AI Director | Google Cloud Certified Generative AI Leader | L...

5mo ...

**Simon Wardley** disintermediation is imminent.

Like | Reply



**Saad Sheikh** • 1st  
Driving Scalable Cloud and AI Transformation | Practice Leader – C...

5mo ...

**Geoff Hollingworth** I think comparing Internet and Telecoms are like comparing apples and oranges . yes Telcos start Cloud/NFV as they were envious from IT/ESXi, Tencent ,etc but then you really need to see two business are not the same.

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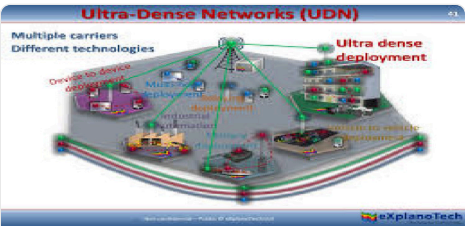
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Sandeep Chakravartty

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