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A Best Practices Framework for the Telecom Ecosystem

It is proposed to develop a best practices framework for the telecom ecosystem to boost investment in innovation and increase vendor diversity. The design and implementation of this framework should involve telecom operators, both large and small vendors, investors, government agencies and other relevant players.

Disclaimer

The recommendations presented in this paper are intended to seed industry discussion with the aim of gaining wide acceptance across the industry. We recognize that not all the recommendations may be supported by all players participating in the discussions. Our intent is to identify the most important areas to achieve meaningful change, and to work towards consensus on implementing them within an effective best practices framework for the telecom ecosystem.

Background

Telcos need significant innovation to address their key challenges of: generating new revenue streams, reducing the energy consumption of networks, managing complexity (which is different from reducing complexity) and making networks more robust to vendor failures, cyber-attacks and environmental extremes (e.g., floods, high temperatures, hurricanes). Current telco innovation and procurement practices, rather than encouraging the innovation they need, are unfortunately deterring it. Our international consultation with telecom vendors and industry stakeholders[1,2] has identified key areas where telecom operators globally should improve their processes for engagement with the telecom ecosystem in order to encourage more investment in innovation more widely.

We organized a series of colloquiums with leading telecom industry veterans to consider the following questions:

- What does innovation mean in the context of the telecom industry?
- How can supply chain diversity be encouraged and supported?
- What are the barriers to innovation, and how can they be overcome?
- How can investment risk be reduced?

The discussions were held under Chatham House Rules to encourage candor and we followed this up with a series of published articles.[3,4,5] This paper summarizes the recommendations which emerged from these discussions and is derived from our "code of conduct" proposal published in November 2020.[6]

Importance of Startups

Our recommendations are predicated on the assumption that the telecom ecosystem benefits when startups are motivated to invest in R&D and offer innovative new products. Large companies typically begin as startups but tend to become less innovative and less responsive to their market as they grow, making them vulnerable to disruption by more innovative and nimble new players. This creates a cycle of destruction and renewal which drives advancement in every field of human endeavor.[7]

This process seems to have stalled in the telecom industry for the reasons outlined in our previous papers and the bulk of telco procurement is placed with a small number of large vendors who wield immense influence on the prospects for innovation in the telecom ecosystem.[8] Hence, and in addition to the recommendations presented in this paper, we believe that telcos should also seek to innovate their procurement processes to enable them to create solutions using components from multiple vendors.

Recommendations

The problems we identified fall into four categories which, taken together, point towards a need for significant changes in processes and culture within telecom operator organizations to increase ecosystem diversity.

We recognize that significant changes are not readily attainable within a mature industry, but we believe useful progress can be made by systematically addressing each of the following areas.

Funding

The scale of telecommunications networks leads to investment cycles of years if not decades. This has a detrimental effect on the vendor ecosystem because the Return on Investment (RoI) on new products extends well beyond the timeline for smaller vendors to survive, or for large vendors to build a viable business case. It is especially difficult for startups - who provide the seed-corn for innovation in the telecom sector, to attract Venture Capital. Larger vendors also need a return to justify investment in R&D and new products to maintain profitability. Hence, we recommend telcos should:

- Allocate at least 5% of all procurement funds for seed-corn innovation.
- Engage existing investment entities to boost enthusiasm for investment in the telecom sector.
- Setup named investment funds, possibly per telecom sector, with a specific investment size, along with sustained PR to advertise the funds.
- Fund infrastructure and middleware vendors, not just (or only) over-the-top innovation.
- Take a lead in at least half of the deals in investment rounds and plan to make multiple-round funding commitments for each investment.
- Establish partnerships with VCs and financial institutions for joint funding and raising debt where needed for innovation.
- Commit to non-trivial investments in Series B/C rounds (e.g., >$2M).
- Build a dedicated team to help vendors in the investment portfolio to succeed. For example, shepherding them through the multiple internal groups and processes necessary for success.

We acknowledge that large vendors fund significant R&D and it is important to consider how that is complementary to the above.

Innovation Processes

The critical nature of telecom networks creates a very high barrier to entry. Typically, a year or more of lab tests are conducted before limited field trials, and 2-3 years may elapse before any reasonable deployment contract. Diminishing participation by smaller vendors, coupled with industry consolidation and geopolitical pressures has significantly reduced vendor diversity, thereby diminishing competition in the sector. This is compounded by telecom operators cutting core R&D spending and delegating innovation to a few large vendors who wield immense influence. Hence, we recommend telcos should:

- Disaggregate architectures away from monolithic or single vendor solutions. Commoditise where possible and drive innovation in areas that add business value.
- Openly publish (and keep up to date) system architectural and functional models which enable ecosystem participants (i.e., vendors, academia, standards and open-source communities) to identify areas where they can contribute innovative new capabilities.
- Openly publish new technology innovation requirements.
- Remove onerous legacy feature requirements for new vendors, and work to understand what minimum viable product unlocks the value of the new solution/vendor.
- Allocate funds to pay for lab and field trials with new vendors on an annual basis.
- Create a shared testing lab open to startups to accelerate testing in a realistic network set-up. The lab should be funded by government/telco partnership.
- Define clear decision gates to drive new technology from lab to deployment over a fixed time period; e.g., from lab to field trial within 1 year and deployment within 2-years.
- Work with new vendors to innovate in all the telco silos (i.e., operations, support, finance, marketing, etc.).
- Where risks are perceived to be too great for a small vendor who has been successfully evaluated, offer to take appropriate fair patent licenses on the technology. Whether the less risky alternative is an internal solution, or a solution purchased from an alternative vendor.
- Offer prepayment for requested features that require additional development.

While the above recommendations focus on startups, we recognise that large vendors often have a significant role to play in the process of developing and scaling startups through acquisition. However, the small vendor usually has to work with the telcos to reach a threshold of proof of viability before large vendors acquire them.

Competition

There is not a level playing field for smaller or non-incumbent vendors. Large vendors have large teams on each account and engage multiple telecom operators to identify common requirements, or influence technology choices to minimize product variants and achieve economies of scale. Telcos also demand long term R&D engagement and participation in standards development, open source and other organisations, as well as insisting on proof of concepts which they are often unwilling to pay for. Hence, we recommend telcos should:

- Identify technology/solution/business areas that require innovation and make public calls for new vendors/new products linked to investment cycle and indicate budgetary spending. This also gives VCs and stakeholders - including Governments, a heads-up that the telco plans to spend money in this space.

- Commit to increased use of new vendors and partners for architectural components.

- Create a level playing field for small vendors. Dedicate a small team to ensure that smaller vendors receive the same "air-time" as the larger vendors, but be diligent not to waste their time. Help them navigate internal telco organizations so that a lack of existing contacts doesn't prevent them from reaching the appropriate decision-makers.

- Help small vendors to win business without forcing them to partner with a large vendor/partner. Set up an onboarding process. If partnership is necessary, pay an appropriate patent/intellectual-property license directly to the smaller partner.

- Reduce compliance requirements for smaller vendors with <$100M run-rate business (e.g., ISO9001), unless required by law.

- Allow vendors to publicly reference progress within telco accounts to encourage traction for them in their markets.

The acquisition strategies of the large vendors play a key role in the success or failure of the acquired innovation from the point of view of the telcos. What the large vendor considers as a successful acquisition, the telcos may not, whilst often, acquisition by a large vendor is the only way the innovation can be scaled. Large vendors should consider how to co-innovate with startups such that all the players - startups, large vendors and telcos, can benefit.

Procurement

The time allocated for vendors to respond to large and complex telco requests for proposals (RFP) is often very short and may span holiday periods, creating an almost impossible hurdle for smaller vendors to navigate. Assuming the vendor can meet the technical requirements of an RFP, the terms and conditions and pricing requirements are often the killer which renders a response from a smaller vendor impossible to contemplate. Hence, we recommend telcos should:

- Create suitable contracts for small vendors with relatively small deals. Don't negotiate with small vendors for a $2M deal in the same way as a $2B deal.

- Eliminate over-negotiating with small vendors in telco procurement organisations. Winning a 30% additional discount from a startup kills their ability to provide support and grow.

- Pay software licenses and support agreements up-front. Count consumption across the network, or move to an enterprise agreement quickly. Don't try to enforce better terms from startups than from larger vendors.

- Commit to recurring-revenue models for software purchases (SaaS in particular), which provides higher valuation returns to investors; although the tax regimes in some jurisdictions may not encourage this approach, instead favoring capital investment based on hardware.

- Create simple agreements which allow smaller vendors to transact up to $5M a year without a master services agreement or similar.

- Pay invoices on 30-day terms for vendors with <$100M revenue without negotiating extra discounts or forcing them through a partner banking relationship.

Conclusions and Next Steps

This paper is intended to trigger industry debate on how to increase telecom innovation by adopting a best practices framework which encourages investment in telecom innovation and eliminates barriers for smaller vendors creating seed-corn innovation whilst recognizing the important role large vendors have in scaling technology.

We have recommended a number of actions which we believe are essential to achieve this goal. However, we are realistic about the prospects for these changes to take place in a timely manner due to the entrenched culture. Hence, we believe that external pressure from regulators and governments may also be needed, both to act as a catalyst, and to foster discussions around the broader changes needed to create a healthy telecom innovation ecosystem longer term.

We welcome feedback on the next steps; in particular:

- How could a best practices framework for the telecom industry be developed and operated?
- In addition to the commitments proposed in this paper, what other commitments should be included in a best practices framework?
- Is there an existing body that would be willing to implement and operate such a framework?
- Should there be a copyrighted mark that a company that complies with the best practices can display?
- Should there be an evaluation process, e.g., an entrance test, to qualify for displaying the mark?
- Should there be ongoing auditing of conformance?
- What additional steps does the industry need to take, and by whom, to reinvigorate a sustainable telecom innovation ecosystem?
- What other questions should be addressed in follow-ups?

Contact

If you have any questions about this document, or wish to participate in the follow-up discussions, please visit the TEG LinkedIn page or email us at Enquire@TelecomEco.org

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