

# Building an Innovation Ecosystem

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Among thought leaders in the telco industry, the need for a sustainable innovation ecosystem is now clear. With the advance of the super scalers and the new LEOSat (Low Earth Orbiting Satellite) entrants in the wings, traditional Communication Service Providers (CSPs) face a tremendous challenge. Not responding to the challenge will dramatically reduce revenues and possibly challenge their very existence. To compound the situation, the existing large vendor ecosystem selling to the CSPs is in the same boat. All are faced with a fundamental need to change to survive.

The path to success for CSP's is to feed and nurture—with funding and support—a pipeline of innovative projects. These can come from startups and combinations of startups and skunk works in the large vendors, and they will deliver the stream of innovation so desperately needed.



## Understanding the challenge

The super scalers have been experimenting with providing end-to-end services, including the underlying communications infrastructure. They have undertaken this while they and new entrants are preparing LEOSat-based services.

One of the most promising is Goggle Fi. This is Google's MVNO (Mobile Virtual Network Operator). It contracts with three CSPs and adds capability to select, combine, and enhance services delivered to Google-branded phones. The customers don't know who the underlying CSPs and phone manufacturers are. All they know is that they are getting a superior service at very good prices, especially for international coverage. This means that Google can seamlessly insert its own communication service when it has it available.

Google and many others are also working on LEOSat systems. These are based on a fundamental change in the economics of satellites. With the advent of lower-cost launches from commercial rocket companies, combined with multiple shoebox-sized basestations in a single orbital payload, many new entrants are betting that they can deploy a low-cost, high-quality competitor to cellular. Google is in the advantageous position of already having a customer base that it can move seamlessly onto its own facilities as they become available.

And this wave of new entrants is not the last. The pace of technology innovation is accelerating, and although we can't predict the successive waves, we know they are coming.

## The response

To remain healthy and viable in this environment, CSPs need to be able to deliver both traditional services at better quality and pricing with new innovative services. This can only come through innovation. And the existing large vendor ecosystem is not well-suited to deliver the needed innovation. The question becomes: how do CSPs create a vendor ecosystem that provides them the innovative technology and products they so desperately need?

In previous articles, we have discussed [the role of software](#) and how innovation in this area comes from [small groups](#). To create and maintain an ecosystem of these small innovative groups, CSPs need to provide financial support processes that foster them. This needs to be from both the core of the CSP and its Venture Capital (VC) arm.

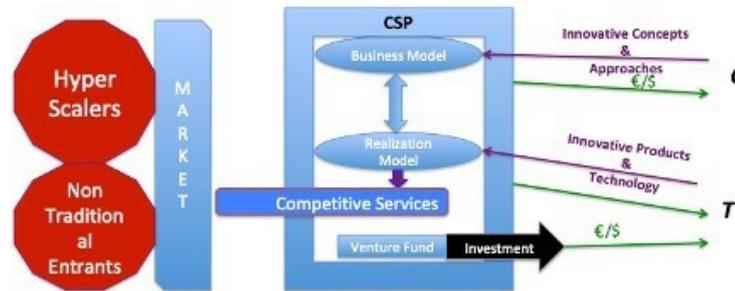


Figure 1. Innovation Critical to Respond to Heightened Competition

The funding from the core of the CSP needs to be task- or project-based. The tasks are around early paper studies that define the concept, analyze potential benefits, discuss financial feasibility, develop plans for possible demonstrations, and define success criteria. Projects focus on paid demonstrations.

The venture arm of the CSP needs to be aware of these ongoing tasks and projects. Today, CSP VCs are pulled in two conflicting directions. On one side, they are judged on financial performance against their non-corporate VC peers. On the other hand, they are asked to support the CSPs business direction. In order to support this seeding activity, CSP VCs need to allocate budget and staff to small seed investments in very early stage startups. Staff working in this area need to be compensated based on the vitality of the seedling stream, not on traditional VC metrics. It should be noted that top-tier VCs have such seeding programs today. Unfortunately, those top-tier VCs will not make any kind of investment in a startup focused on selling to CSPs as a result of current CSP behavior around startups. Once CSPs adopt the kind of activity recommended here, top-tier VCs can be expected to change their behavior and start supporting the innovation ecosystem too.

## Seeding an Innovation Ecosystem

These CSP funding streams go to support two kinds of organizations: pure startups and skunk works in large vendors that combine with startups. Startups are the engine that drives the kind of S/W innovation that CSPs need. But not all startups will have good ideas, and not all those with good ideas will be able to deliver. Thus, a portfolio approach is needed. This means the use of relatively small amounts of money to explore and test is the best way forward. Once a future direction is determined, it's essential to build a portfolio and use a portfolio process to filter out the good ones and grow them.

The most famous skunk works was in Ford Motor company. A small group of staff came to the conclusion that there was a market for a kind of car that company management would never approve. They got together in a remote corner and, with no budget and while working on their approved tasks, designed and built a prototype of the car they had in mind. A senior executive discovered the skunk works, embraced the vision, and maneuvered it through corporate resistance. That executive was Lee Iacocca, and the car was the Mustang.

This story is instructive, because a successful skunk works is not enough. There needs to be a champion to bring even a very successful project across the finish line to full realization. So, in addition to all the other steps described here, there have to be people placed within the organization with the right personal network and credibility to carry successful projects into implementation.

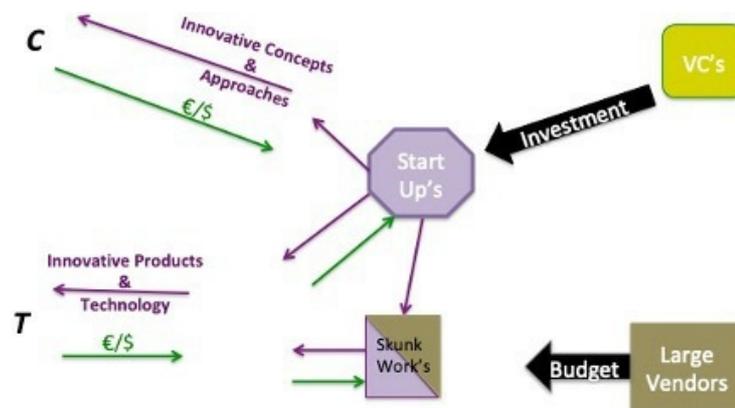


Figure 2. Innovation Generation

Because skunk works are housed in large organizations, they can sometimes play a valuable role in delivery and support. These skunk works are likely to recognize and understand the value of particular innovations but, because of the corporate culture of large organizations, they are likely to have difficulty in coming up with the fundamental technical inventions without seeding by startups.

By pairing a large vendor skunk works with a startup, it is sometimes possible to get a better result in delivering the early stage projects. In the later stages, it may also provide a faster way to move successful products and services into production.

Large organizations are not monolithic. Some in a large vendor will support this kind of activity. Others will oppose it. Opposition may take many forms, including NIH (not invented here). Or may take the more subtle forms of sowing FUD (fear, uncertainty and doubt), or practicing EEE (extend, embrace, extinguish). Some will base their resistance on protecting legacy products. Others may act out of a felt need to protect their 'empire.' Here again, the champion has to work to counteract these. To do so, the champion can best function with the support of the CEO and even a member or two of the board of directors. But the Mustang case shows that even without that support, a good champion can be effective.

Of course, there are some risks. These risks include protecting the intellectual property of the startup and making sure that funds flow correctly through the large vendor to the startup.

The other approach is for the CSP to deal directly with the startup. This can be more efficient, effective and produce faster results. Dealing directly with a few startups may also help control some of the problems and resistance in large vendors. If large vendors see that their obstruction efforts will result in CSPs dealing directly with the startups and cutting them out, they may become less obstructive. At the same time, it is only fair to point out that dealing directly with startups may be a bigger change in business processes for the CSP.

One way to get around this problem is to hire startups as consultants (a well-established business practice) to do the early studies that confirm the viability of a particular technology and lay the groundwork for a demonstration project. Once viability has been established, it may be easier to make the decision about direct engagement with the startup, or combination with a skunk works.

## Building an innovation pipeline

The objective is to create a constantly replenishing pipeline of innovation. To do this, the pipeline (as shown in Figure 3) acts as a funnel and a filter to, stage by stage, move successful innovation closer to implementation. At the top of the funnel are a relatively large number of efforts with relatively small amounts of funding. As projects move down the funnel, there is a winnowing process that reduces the number while increasing the level of funding. To do this effectively, there have to be clearly measurable criteria for determining success for each project. These criteria must be explicit, measurable, and clearly stated at or before the beginning of the project.

Successfully meeting the criteria has the trigger of moving the project down to the next level.

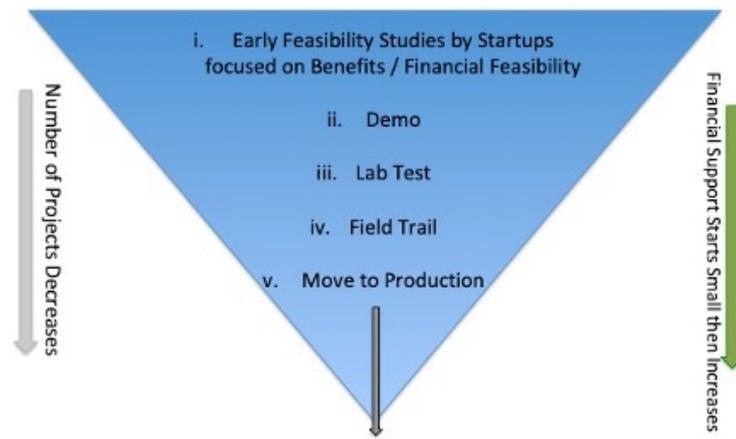


Figure 3. The Innovation Pipeline

The top of the funnel has to be constantly reseeded with new projects. These new projects may come from completely different sources. Or, they may come from projects that failed to meet success criteria, learned from their failure, and reinvented themselves to start over. Similarly, there is also a feedback loop in the pipeline process such that the process itself learns from experience and makes adjustments over time. These adjustments can be anywhere in the process but are most likely to be found in the construction and use of success criteria.

## Creating change

Implementing the process described here requires CSPs and the large vendors that serve them to make substantial changes. These include changes in procurement, contracting, advanced technology, operations, and intellectual property. The history of CSPs and associated regulatory and standards organizations has been one of tight control. Against this background, the break-up of monopolies, and the rise of Internet and cellular technology has shown that CSPs and their large vendors can make dramatic changes.

So, we can say that the CSP vendor ecosystem is both resistant to change and at the same time has made great changes. Even so, it is important not to minimize the potential difficulty of making the changes needed to create a sustainable innovation ecosystem. One way to ease the transition is to start with smaller efforts that pilot the process.