Innovation & Start-ups

By: Mark Cummings, Ph.D.

There is a growing consensus that today's Telco's must innovate in order to survive and prosper. The move to Cloud Computing is seen by many Telco's as the model for Telco Transformation. In the creation of Cloud Computing, start-ups played a key role. To achieve their transformation vision Telco's need to learn to work effectively with innovative start-ups empowering the small number of thought leaders in the large companies.

Barrier to Innovation

The challenge that confronts Telco's today is to reform an ecosystem that has produced Telco networks that don't adequately meet the needs of their end users, operators, nor owners. They are inflexible (slow and difficult to field new services), brittle (recent S3 incident), insecure (recent Deutsche Telekom breach), difficult (manual staffs under increasing stress), expensive to operate (non-linear growth in costs), and financially challenged (dividend cuts and depressed share prices).

This ecosystem is based on a set of business practices and procurement processes that are well suited to the past, but are a barrier to the innovation desperately needed from small start-ups and large vendor thought leaders. These practices and procedures are based on two principles:

1. Procurement through complex Tenders with year or longer cycles;
2. Squeezing as much as possible from vendors for free.

These have created an ecosystem that protects the existing large vendors from new entrants. But that is antithetical to the needs of innovation driven start-ups that need small but regular revenue, based on successfully completing simply defined and well-articulated milestones.

Cloud Computing Model

A few years ago, Telco executives observing the financial success of Cloud service providers started visiting them to learn how they did things. What they saw was the end result of a chain of innovation. The conclusion: "transform" their Telco's to operate like Cloud companies. Thus, the birth of Transformation. But it has proven very difficult for the Telco's to get beyond talk and some PoC's (Proof of Concept) demonstrations. This is because the Telco leaders misunderstood the chain of software innovation that made the Cloud companies successful. Each of the major innovations along that chain started with a small innovative group organized as a start-up. For example business model innovations for Google came from a start-up founded by two Stanford Graduate students; and Cloud technology's foundation, VMware was founded by a small start-up that struggled in its early days, resorting to its early product allowing Mac's to run the native Windows Operating System. Open Source came as a way to build components that required a lot of work, but not innovation and were deployed on top of the innovative foundation produced by start-ups.

These Cloud companies still foster start-up innovation. They have budgets to provide milestone-based contracts in the $250K to $500K range to companies who have innovations that could help

them. Some end-up as dead ends, but many lead to on-going streams of innovation.

Now, innovative start-ups approaching Telco's find that the existing Telco business practices and procurement processes create an insurmountable barrier.
Meanwhile, the Telco's look to their traditional large vendors for the necessary innovations, and the Open Source groups are composed of the large vendors. It is very difficult for these to provide that innovation because of legacy skill sets, legacy product portfolios, and these business practices and procurement processes. The practices and processes not only kill start-up innovation, but work against those in the Telco's and large vendors who know that change is needed.

To understand how these business practices and procurement processes inhibit innovation, it is helpful to look at how they evolved.

Evolution of Today's Business Practices and Procurement Processes

The foundation business practices and procedures for acquiring technology were set in the immediate post war period. These foundation business practices and procurement procedures were mechanistic. That is, they approached acquisition of equipment as if the equipment were mechanical machines and used extremely long and detailed specifications that were contained in tender documents that only very large companies could afford to bid on. The bidding process could take a year or more and resulted in infrequent but very large financial commitments. Because the vendors were very large and had easy access to the financial markets (both debt and equity) and in many cases had government support, they were able to take infrequent, but very large injections of revenue and support stable staffs while producing a steady stream of annual profits.

This set the pattern of the tension between vendors and Telco's, playing out in the crafting of these very extensive requirement documents while the vendors maintained control of the key vendor issues of margin and customer lock-in.

As electronic switching transitioned to packet switching, the Packet Core began emerging, and OSS's appeared; the mechanistic view continued with systems packaged as "Appliances". That is "boxes" that had certain functionality tied together by large on-going System Integration contracts.

The Telco's response to this environment was first to try to push for standards, and more recently, pin hope on Open Source Groups. The vendors work productively on standards at the data plane, but resist standards at the control plane, trying to maintain customer lock-in, differentiation, and high margins. This results in a situation where Telco's are constantly trying to squeeze something out of the vendors that the vendors don't want to give. So, in addition to the mechanistic procurement processes, there came to be a kind of Telco hero. The hero was a Telco staff member who could claim to have squeezed something out of a vendor. This is the critical business practice. The vendors would allow themselves to be squeezed into doing free demonstration projects and participating in long drawn out projects in industry groups, standards organizations, and Open Source groups - talking about the future but preserving customer lock-in, high margin, and so on.

Some hope that Open Source groups will deliver the necessary innovation. The Cloud Computing companies found that Open Source was best suited to build on top of start-up delivered innovation. It is also interesting to note that support of Open Source by Cloud Computing companies has faded in the last few years. Also, when the Telco Open Source Groups are examined carefully, it can be seen that they are dominated by the same set of large vendors facing the same business practices and procurement processes.

Some Telco's have invested in extensive internal "laboratories". Sometimes these labs have been able to come up with interesting new technologies. But they have shown themselves to be incapable of commercializing them into products that have the desired effect. Other Telco's have set up innovation centers, but these have tended to focus on interesting things that can be done with handsets, autonomous vehicles, and other emerging technology. Not how to actually achieve

Transformation: the software-centric network infrastructure vision.

Start-Up Driven Innovation Business Structures

Meanwhile, start-ups that don't know better, see the need for innovation and try to respond. They are first met with what appear to be promising overtures from Telco Advance Technology Groups. But after work and effort, the start-ups realize that they are caught up in the Telco hero syndrome of getting something for nothing from vendors. These start-ups do not have the capital base to play the political games and work through the business practices and procurement procedures.

One of the leading industry analysts said recently that she, "had seen a large number of promising start-ups try to work with Telco's; give up and go on to be successful in the enterprise market." VC's (Venture Capitalists) have become reticent to invest in Telco focused start-ups. One VC recently told me that he was asked by the CEO of a major Telco why his company didn't see more start-ups. The VC told him that it was because his company killed start-ups.

The way to get out of this deadly embrace is for Telco's to create special budgets ear marked for working with innovative start-ups that could help the Telco's achieve their transformation vision. These budgets would provide for a number of contracts to start-ups with innovative transformational technology ranging up to $500K – small numbers in the context of a large Telco. These budgets can't be managed by a something for nothing hero. There also needs to be a recognition that not all of these early funded efforts will produce fruit. Thus, a certain percentage of failure must be embraced and not feared. For those that do show promise, there must be a way for on-going financial support as they move through lab tests, field tests, and small deployments.

Conclusion

In today's innovate to survive and prosper world, Telcos need to learn how to work effectively with innovative tech start-ups that can provide the keys to reaching their transformation vision. Implementing business arrangements that support start-up driven innovation is critical to this. Theses include special budgetary structures to provide a small but reasonable cash flow to start-ups that are attempting to deliver innovation to Telco's. If this is done, the future of today's Telco's looks rosy. If not, as one industry participant recently said to me, "the Telco's will just sit and wait for someone to disrupt them out of existence".