Technology Cycles Deja Vu

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The recent string of technology IPOs in areas as varied as network security, social networking, mobile advertising and the likes, points to an interesting time in the technology innovation eco-system. It basically highlights the rapid go to market of technologies, that in essence, build on top of the latest disruptive business and technology that have reached critical mass, and are, as such the culmination of the actual technology innovation cycle. This is to last few years, but what this also says is that, the disruptive technology inflection point that would hit us prior to the end of this decade, is now scattered throughout various technology labs and startups in early stage of incubation.

This is by no means new, and in fact, its part of a cycle that has been reinventing itself at regular frequencies. A bit of retrospective in terms of technology development cycles, shows us that investments poured into different focus areas over time, leveraging the disruptions and building the basis for the next ones to come. Looking back, one can trace back to some major disruptive IPOs that uniquely highlight the stage of evolution along the technology roadmap, and pinpoint specific inflection points in the evolution cycle. First, we have the IPO by Microsoft (1986, operating system; software on personal computers) followed by Cisco (1990, switching equipment; infrastructure vendors), Netscape (1995, web browser; Internet as a media), Google (2004, search engine, core Internet), and Facebook (2012, social media; Internet as a platform). Every major IPO was preceded with a period hyper-activity with several companies vying for prominence. The market would be fragmented, divided between a varying numbers of companies and accompanied by a considerable level of speculation. The post-IPO landscape becomes more tame with a few leading companies controlling the lion's share of rewards.

Where we stand today in the cycle is a continuation of what started earlier this decade: optimization of the Internet as a platform. The recent M&A and IPO events are a good manifestation of this trend, which should continue for the next 2-3 years. This trend is being reinforced by the continued convergence towards everything-mobile, geography-independent computing, and everything-connects-to-everything phenomena, which place us in the phase of platform optimization and monetization of the converged fixed-mobile Internet. Some of the features of this era include:

1. Increased elasticity of the network through progression of virtualization and software defined networking through the compute, storage and networking chain to accommodate different user-controlled services

2. Transition from "send and receive" information model to a highly interactive model between users and content.

3. Form large-scale sharing platforms and social networking applications to create personalized, user-centric and controlled social ecosystems

4. The return of pragmatic artificial intelligence, through its manifestations of machine and deep learning, leveraging accessible data sets and tractable computing

5. Increased integration and programmability of silicon as a high-speed computing operating system underneath a layer of compute and cloud operating systems.

6. Growth in the 4G mobile Internet eco-system, with particular emphasis on the increased interaction between the network and over the top applications.

The above list can be boiled down to a few key characteristics that include: data, intelligence, information, management and optimization. In short, the focus will be ever more on creating semantics off data followed by business models that leverage these data semantics to monetize the converged Internet. As such, players that will embrace risk calculated technology and business model changes, we will witness a fast mover advantage winning big scenario: examples would include mobile operators aggressively moving into adjacent markets, fixed operators developing new Internet-centric and enhanced infrastructure sharing models, data center players scaling optimized cloud delivery models, video OTTs pursuing smart operators partnerships, and networking vendors leveraging advanced integration of IT and network technologies. This time, as it was the always the case before, those embracing change would be the leaders to stay, and others would be absorbed or disappear. Put simply, just like basic genetics!