Pipeline
Your OSS/BSS Information Source.
www.pipelinepub.com Volume 7, Issue 1

Uniting App Trend with Cloud's Potential

Strategic Decision Making in a Universe of Apps

By *Wedge Greene*

Play in your own sand box?

Strategy involves creating realistic, meaningful goals; assessing the landscape; identifying opportunities; and neutralizing roadblocks. Most often, the goal is economic success, but it need not always be directly aimed at higher revenue. Sometimes the goal is gaining or maintaining market dominance. This is why, we assume, Microsoft just made some of the features of Office and many of the features of the legendary Groove application free and available to the public as a cloud-based application. To get to the cloud storage holding this article from my computer, and likewise for the Pipeline editing staff to share and edit it, the electronic article crosses several service provider networks. None of those service providers are getting a dime for this significant value added service, which a short decade ago would be a costly internet business service.

How can service providers develop a winning strategy in this new landscape?

Sophisticated clouds are no longer a futurist prediction. They are no longer just for major business projects. Now they are real with dramatic market impacts on software sales and delivery and also on how networks and business work. Desktop productivity software was the high revenue application for decades. After cloud enabled market incursions from Google and others, Microsoft is hitting back big time with 'Office Web Apps'. They have gotten firmly behind the cloud concept. Now core desktop productivity applications and offline storage are available as a cloud application from the company that was built with this revenue stream.

Just how should telecom ecosystem companies [networks, vendors, SI] develop strategy in this new ecosystem of Cloud platforms and over-the-top applications?

So, "play in your own sandbox"? Not.

Companies are committing to the Cloud. Microsoft is leaning on its developer community to adopt Azure and build in the cloud. This includes the telecom ecosystem community. Microsoft seeks new vendors to join their community. At the TMF, rumor chains were spreading that Microsoft approached major OSS/BSS vendors with cash incentives to develop Azure (their cloud development platform) based versions of their OSS/BSS money suites. Would this be a good strategic direction for Microsoft? How much money would it take to flip an Oracle platform-based BSS vendor into their camp? It certainly costs ISVs scarce cash to re-engineer a product on a new platform. Would the risk to the vendor match the opportunities? Microsoft would not be alone in such a strategy. Platform vendors typically woo developers with cash, free software, and valuable training. It's a proven strategy. But how would this move prove Microsoft's foundation technology superior? After all, theirs is an image problem, not simply a problem of introducing new technology. Perhaps they gamble that building using Azure, vendors will then think Microsoft's complete platform suite superior to Oracle, Google, or IBM. But would their buyers, the traditionally UNIX/sparc loving service providers, agree to buy this? That question opens our big unknown. Just how should telecom ecosystem companies [networks, vendors, SI] develop strategy in this new ecosystem of Cloud platforms and over-the-top applications?

Retiring Aged Strategy

Historical telecom strategic decision was very clear and usually a choice between two business paths:

- To pursue Internal vs External strategies?
- To build or buy?
- To own or resell?
- To compete in a new territory or protect an existing territory?

- To invest in new network equipment or to extend life of existing equipment?

These either-or decisions are typical of balanced market systems with clear, incremental change. These decisions don't appropriately characterize the new market ecosystem of apps. There are too many players making interfering decisions. Your choice is dependent on what others do, and on what you think they will choose to do, and on what they think you will choose to do: in other words a formal game. The market dynamics are complex and chaotic in behavior. The business choices of telecom service providers now are not expressible as a dichotomy. Today's service provider faces interacting, interdependent decisions such as:

- Where to invest for development? Because investing here means not investing there.
- How to adjust to competitive pressures? And where are the next pressures coming from?
- Partner or not? Partner with whom? When will today's partner become tomorrow's competitor?
- Offer what mix of: horizontal or vertical approaches, regional or global distribution, specialized or general business markets, business or consumer, regulated or open traffic?

Our industry just wasted four years. Media is no longer a value-added service. Media is now an app.

- Utility trunks or Value-added provider? Traditional or nontraditional services?
- What networks for what services?
- And now, interdependent with all these: how to use the cloud? And how to react to the cloud?

We recently explored ISV pricing strategy in the Cloud. As nicely documented in Mark Lowenstein's June Lens, today, with a specific service provider, the same mobile data service costs different amounts on different networks. Is this deliberate or accidental? Is it sustainable?

I recognize that company strategies today seem crazy. They seem image-based, as if building brand image is equivalent to setting market strategy. On the plus side, the tide is turning again and it is now generally realized that more attention is needed to formulating strategic behavior and decisions in our industry. Yea, Brother: strategy is back in. However, on the down side, general understanding of

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'what makes strategy' remains primitive. Strategy is more complex than investigating competition, doing surveys, and developing a marketing plan. It starts with formulating realistic and advantageous goals. It requires understanding market dynamics and how decisions alter market behavior.

This is important. Our industry just wasted four years. Wide strategic failure occurred with the 'simple to understand' but 'difficult to execute on' original Telco 2.0 model of 'charging both ends of a media flow'. But there was a key truth embedded in the Telco 2.0 approach. The telecom ecosystem must decide how to make money in this universe of OTT apps. However, Media is no longer a value-added service. Media is now an app. One potential way is to invest in apps, that is, to invest in development and/or to invest in delivery. But why apps?

Rise of Pop Software

In formulating strategy, first assess the landscape. The current cloud ecosystem derives from the introduction of network delivered information and software to network attached appliances. We futurists once called this 'pervasive' or 'ubiquitous' computing. Now your kid calls it her 'apps'.

This last January [2010], Guy English, writing in his Kickingbear blog, coined the use of the term Pop Software. He was reacting to the two million downloads in a single week for a software app that he helped design. "The sheer scale of its success has been staggering. Before this past December it had already been downloaded over ten million times and has enjoyed an enviable retention rate." But two million downloads in a week! This was software that had moved beyond business applications and into the world of entertainment. "The people who are consuming software now are a vast superset of the people who used to do so." How can people find out about it and react so quickly in such number? "They unwrap their iPod Touch on Christmas Morning. They stick in the headphones, maybe they sync their music to it, and then hit the App Store for some Pop Software to get some amusement out of their new toy." What does this mean for networks and software

builders?

While others are arguing the definition and boundaries of new 'market categories' like SaaS, PaaS, and IaaS; or debating if cloud computing is just a renaming of Application Hosting or finally the advent of successful Utility Computing... ordinary people (what we used to call the 'end customer') and not business markets are driving the cloud market. I offer a telling cloud market ecosystem definition that

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is more meaningful to service providers and ISVs:

Cloud computing is the delivery of "packaged units" of functionality over a network to a network attached appliance. These software units are supported by, and dependent upon, services hosted in remote network locations without which they will not fully function.

Integral to cloud computing as a market ecosystem are: (1) the network attached appliance, (2) the app store or portal where the user goes to get it, (3) the networks that supply the connectivity, and (4) the hosting server farms where the (5) support services are located. The edge device is the user's gateway to the remotely executing cloud service. But to the user, the service is one unified thing and it is ubiquitously local, in their palm or on their desk. SaaS, PaaS, and IaaS mean nothing to the user.

Universe of Apps

"An Application represents the developer's best effort at creating software that applies the capabilities of the device to solving a specific problem. Making people laugh is not a problem an Application can solve; it's not about the device it's about the person using it. The thing is these people don't buy Applications, they download Apps. "Apps" is fun. It's fun to say, it sounds unthreatening..." [*Guy English*]

Deep down, I wanted to name this article "strategy in a sh*t-storm of apps". Developing strategy requires assessing the landscape. It is simplistically apparent that there are many different types of apps. It helps to classify these in groups of similar properties when developing strategy. Likely different app groups will

need different tactical plans. ISVs, cloud vendors, and service providers will need to pick which of these kinds to invest in. Service providers must decide on (a) to which app types they are transparent and (b) with which app types they seek some form of revenue share.

I suggest a sort of Maslow's hierarchy for app classification. This grouping is an inverted hierarchy that increases the need for cloud support as you move down this list:

- The "fad" app, aka Pop software [note some pop software is very sophisticated]
- The entertainment (media/game) app. Media is now delivered in packaged units, apps, or as portal gateways directly linking to media streams, also apps. [the Netflix portal on my Blu ray player]
- The informational app providing advertising, news, or search of/access to information archives.
- The personal productivity app, as in Office web apps or Google docs
- The social networking app [Here a Facebook, there a Facebook, everywhere a Facebook app.]
- The business support or civic support app [Yes, your whole police service now runs off Apple iPhone apps.]
- Apps that support collaborative decisions and processes [apps as agents or cloud based Groove-like structures]

This is a pretty straightforward classification. Lowenstein [in the current Lens: Additional Thoughts on AT&T Pricing] advocates special and different pricing considerations for these following different groups of services on mobile phones:

- Embedded content
- Apps requiring persistent connectivity
- Over the air synchronization
- Advertising

His is a functional approach, but with similar results to our classification. But most important, he advocated different behavior based on different types of apps. With new regulatory scrutiny developing over behaviors where service providers seek to differentiate on different types of network protocols;

special strategic attention is needed on different policies for these different app types. Will access to civic response apps on a network appliance be a required open service just like 911/999 (and similar international services)? It may be that one market approach for OSS/BSS companies is, not to so much use the cloud as a platform, but instead to manage the cloud components, here apps, from the service provider's perspective. If so, ISVs should develop services that differentiate the type of app and network cloud service that is using the network and then apply different management policies and traffic policies to the apps (rather than the current technology of doing this for protocols). This is way more difficult than deep packet inspection.

App Value?

It is important to note that the position in this hierarchy is not related to 'cost to develop' or 'sophistication of the app' but to the use made by the person holding the network appliance and its relevance to our cloud ecosystem. Reading Guy English's blog, it seems that app price and app return are inversely related to business utility. In this universe humor is more valuable than productivity? Can this be sustained or will it lead to a market collapse? It does seem that typical market price dynamics do not yet apply to apps. Some with the most business value (classical utility), such as Microsoft's Office Web Apps and Google Docs, are free. Meanwhile, animated cartoons cost a buck and a movie on your phone is cheaper than a visit to the cinema.

Pending further analysis, it leaps out that as you move down this classification list, each type of app stays in service longer. Yet, the aggregate amount of return per app decreases, the volume sold decreases, and the rate of return per app type varies indiscriminately. Further, there is no immediately apparent correlation with price. There is certainly no correlation between development costs, price, and ultimate return. Nor between personal utility and price. For some of these categories, the market follows the dynamics of Fads rather than supply/demand. It is clear that this is a chaotic market system that has not yet stabilized. Often increasing numbers of users and increasing numbers of products stabilize markets, but so far, not in this case.

It is also important to realize that the further down the list you go, the more critical the cloud becomes. If the greatest return is at the top of the list, then cloud computing becomes a sink for resources without return on investment and the cloud will become a bubble that will burst. So if you invest in the cloud, you must develop a strategy for returning investment revenue from these app types. I'm not seeing these strategies and, believing in the Cloud as I do, it greatly worries me.

This is way more difficult than deep packet inspection.

Winning Strategies

So far the winner of a linked grouping in this ecosystem [controlling app, network appliance, app store] is Apple. Their strategy is monopoly: control appliance, app sales and platform but not the app supply. Their windfall is today's sh*t-storm of apple apps. But many of those app creating companies are folding every day. Success breeds repetitive strategy. Google now plans to sell apps in an app store. We expect Microsoft will respond when the Windows 7 phone is released. But, given the risk on return for new app development investments and subsequent failure rates for apps; rather than seeing risky investment in new forms of apps, we see existing applications being ported into app versions. When the platform companies control the market and the app makers fail left and right, what sensible OSS/BSS vendor would port their high value applications to the cloud as apps? Hence we see a lot of application hosting renamed SaaS.

When you have the resources, in blind/chaotic

markets, the best strategy is to pursue all options until, as the market matures over time or information is accumulated, one or another approach differentiate themselves. At which point you drop all but the most lucrative avenues. So Microsoft faced with a decision, which to pursue: Cloud or Desktop? They peruse both, partial functionality in the cloud apps and greater functionality in the desktop. But those service providers with fewer resources must decide: 'Win the Platform' or 'Win the Apps'? Build their own app store or attract app ISVs. Hence we see embedded 3rd party apps on new smart phones. And ISVs must decide: play or stand pat? For the rest of us, how can we develop an effective strategy to answer these respective questions? These questions are currently being put to CEOs.

For the long term, somehow we collectively need to move the market dynamics away from 'fad behavior' and toward the alignment of rewards and performance. For this we need the likes of Microsoft and Oracle, and the other big hitters, to play leadership roles. When running effective companies, the whole point of the popular Kaplan's Balanced Scorecards is to align rewards with performance. Short of establishing a monopoly, no single company controls overall market dynamics. Apple likely understood this when choosing to set such strong monopoly controls in place.

Surprise! I have no answer here. But I can help with tools for an individual company to use in developing strategy in this chaotic app market.

Strategic tools

Guessing is a historically sound approach. With guessing you are betting on the person making the guesses rather than on a specific method for creating strategy. You seek out and acquire the team with documented historical successes at setting strategy. You find and pick the market bellwethers. What you do not do is let your existing undocumented team get away with making guesses. That way leads to failure.

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Following is an approach for those who are sound now and able to rapidly maneuver later. This might work for service providers currently generating free cash or ISVs with strong market share and agile platforms. You wait it out and then follow the winning early strategies. However, like guessing, this is often a fall back used by weak management teams who will not invest in good strategy even when they are confounded by the current market conditions. These unfortunate service providers end up getting duped by vendors and ISVs and wasting millions. For the weak-minded ISVs, they simply fail.

Scenario Planning, as a formal method such as used in Cortney's 20/20 Foresight, is effective. Cloud app ecosystem markets seem to be expressing what he calls "level 4 uncertainty", aka true ambiguity. In this domain, scenario planning can "help managers envision the possible" and think outside the box. Backward chaining causality, discovery of analogous situations, and documenting necessary belief statements are used to get a handle on available choices.

Fuzzy marketing methodology, Game Theory and decision analysis are formal methods that involve building static and behavioral models of the environment. These may not always generate a clear answer but they always generate a clear understanding between 'what you know' and 'what you do not know'. Sometimes they can even tell the value of discovering an answer to 'what you need to know'. One can narrow the choices to the point where guessing is profitable and not suicidal. In the

best case, prediction is a systematically reached 'best guess' based on analysis of environmental trends and competitive behavior.

Complexity analysis is very new and so far mostly used in finance. Mapping the actual dynamics of the complex cloud/app market ecosystem is currently beyond us. But, combined with fuzzy/game/decision analysis, this approach can map the territory and greatly narrow choices. I think the most useful techniques here are the development of abstract accounting systems to rate and generate nontraditional and traditional market returns from apps (for example, direct and indirect revenue, good will, market stability). This can also help in developing hedging strategies for this market of apps, platforms, and clouds and determine the tipping points for the "following" approach.

Service providers with fewer resources must decide: Win the Platform' or 'Win the Apps'? Build their own app store or attract app ISVs.

With any strategy we need a few basics. Some basic market research would be helpful. What are the uptake curves on apps? Are there critical thresholds after which an app goes viral and below which it dies? What roles do early acceptors play? Who are the market darlings and market makers? Which real apps are in which categories? Which apps use the cloud and how are they performing?

It is also clear that some metrics will need to be discovered, developed, or decided upon. Developing common metrics is critical to developing a common industry strategy to align return with performance. In general, the industry will need to develop common strategic goals and policy to reach these goals. This strategy will be different from that set by individual companies, but the tools to get there are the same.

Futures

Sometimes it is not clear to my readers whether I am assessing current conditions or predicting future conditions. Whether I describe reality or advocate for a specific possible future. Let's clarify.

The reality is that current definitions of the cloud ecosystem are not productive for formulating good strategy for service providers, OSS/BSS vendors, and big platform companies. Developing an ecosystem definition that services and aides us in strategy is imperative. I propose we use the structural approach of network appliance, app, platform, and hosted support service. These are things we can manipulate to get better economic results for our companies.

It is my avocation that we need a common industry approach that knits all the types of companies joining the TMF in one strategy that works toward a stable cloud market and not another bubble. That is a hope that should be an imperative.

Perhaps the bottom of my inverted hierarchy, "apps that support collaborative decisions and processes", is yet to be developed, yet to be successful. But I propose that this class of apps best uses the innate advantages of service providers and could be the best source of value for providers. And this policy-based app class is what is needed if OSS/BSS is to migrate (with new functionality) into the cloud. Such apps might not yet exist, but we should actively invest in creating these to stabilize the cloud ecosystem market.

Mathematics proves that a 'Principle of Emergence' should expose itself, allowing us to generate value, if the chaotic game in the cloud ecosystem is approached with reasonable/sound strategy. But if everything is random strategy, or completely hidden strategy, even the bad approaches will not tell us anything.

My prediction/my hope: soon vendors will develop Top of the pack apps that, on the local device, is the collaborative app that is a gateway to an ecosystem of cloud services, which are collaboratively brokered and managed by local and hosted agent apps. The most valuable apps will be those that redirect to cloud-based

services. Tomorrow's killer app is a common world of universal communications and management services realized as consistent/universal apps. These apps run on any and every platform the user has handy. They communicate over any network (even if the cost per byte varies by network and technology). They are downloaded/delivered from universally reachable portals (and anyone can own/provide the source portal/store: either service provider, edge provider, platform manufacturer, or over the top vendor). These apps are serviced by cloud hosted service applications that

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reach anyplace in the world and migrate as needed to support users. We build for a world of multiple networks servicing multiple appliances running a plurality of platforms where the app is an over the top service connecting to a cloud based service. Yet in all this, the only consistent thing the customer/end user ever sees or is even aware of is the invariant app. Networks disappear, platforms disappear, functionality, security, facility, and service remain.

Platform vendors are doing their part to help launch this stabilized cloud ecosystem. Microsoft is supporting Silverlight/Azure as a common development platform on any Windows supported appliance/server. Google is pushing common Open Source technologies. Oracle vows to ever support Java. The methods are available. Now we need the will and investment.