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From Walled Garden to Community Garden: Collaborating in Competitive World

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Judging by the capabilities demonstrated at the Mobile World Congress in Barcelona last month, it is clear that customer demand for social networking, rich and seamless feature sets, and high quality video content services can be met by a myriad of technical solutions and service providers – and that customers are fully aware that these capabilities are largely here and now – not next decade. Those Core and Edge providers who choose to collaborate to get those services to the customers will be the big and sustainable winners; those who continue to ignore the customer demand will lose. We acknowledge that right now the economic drivers of the Edge companies and the Core companies are not the same, and can often even be at cross-purposes. Is there a way to bring these business drivers into alignment? Let's explore how that might happen.

In previous articles we pointed out that the economic drivers of Edge service providers and those of Core service providers are not the same. The Edge (companies providing devices or over- the-top services) represents the new generation of service providers - innovative, flexible and somewhat impatient, they are accustomed to a business environment with a relatively low barrier to entry. The Core (network owners/operators) is the domain of more traditional companies, those with large investments in network infrastructure, accustomed to being able to exert a level of control over customers and partners.

This situation leads to the very real danger that both Core and Edge view each other as competitors rather than potential partners. Conference tracks feature words like "Battle" and "Tension" and "Survival." Focusing exclusively on competition rather than on customers rarely yields a positive business outcome. We see healthy signs of the emergence of a more collaborative attitude, and this article suggests one approach to creating a framework to enable that collaboration to grow and flourish.

Introduction to Community Gardening

> A community garden is a collaborative greenspace in which the participants share in both the maintenance and the rewards. In the common greenspace approach, garden members cooperate in managing one area. Often, each member is responsible for a set of tasks within the shared area. - Eva C. Worden, et al

In a community garden, as opposed to a private walled garden, no single gardener owns the land. Each gardener works the land in cooperation with others, following clear rules designed to ensure that each gardener has the right to reap the rewards of their labor. Yes, sometimes someone breaks the rules and steals tomatoes belonging to their next door neighbor, but overall the system works because everyone can see the direct relationship between their work effort and their reward.

In setting up each community garden club, the participants addressed specific questions:

- Is there sufficient interest in those who will actually use it?
- What are the group's purposes and goals?
- How will the property be planted and maintained?
- What tasks need to be done? Who will do them?
- How will the garden be operated?
- How will the produce be distributed?
- What are the financial needs? How will funds be raised?
- What are the legal issues?
- How will members communicate with each other?

What if Edge service providers and Core service providers got together to form a type of Community Garden Club[tm]? This is a middle-ground strategy between a wild west Over The Top services world and the existing "walled garden" approaches of most network operators. To accomplish this, we must ask and answer the telecom market analogs to the above questions. Further, we must also understand what business drivers and actions will lead to this type of stable collaboration. What exactly is to be shared? What new technologies and processes need to be developed? How can we create markets that will ensure the fair distribution of net benefits?

David Milham, of Milham Consulting, a TMF Fellow expresses clearly the requirements of the new ecosystem.

"Revenue creation is based on introducing innovative and compelling services – applications and content – to targeted and shifting markets. This leads to three requirements:

- Agility in mashing up economical service propositions and the systems to support their delivery, operational support and billing;
- Creating supply chains that mash contents and application from different service providers;
- Ubiquitous broadband transport networks."

Sanjay Mehta of Oracle Corporation:

"The rate of convergence and cross-over between the telecom industry and [other] players is intensifying. To face this new world Telcos must recognize the need to look to new business models and operating procedures. Many are considering major changes in the way they run their businesses, how they interact and work with their

partners and, of course, the underlying supporting enterprise applications and business processes."

The Garden Club[tm] Concept

The concept of the Community Garden Club is not simply a world in which the Edge provides the services and the Core provides the network. Edge companies acknowledge that there are service enablers that could well be supplied by the Core – in addition to carrying bits, and beyond specific QoS. Some of these service enablers are: security and authentication; common addressing technology; universal reach through interconnected networks; common signaling and session management, such as SIP; support for CODECs and edge devices without discrimination; and policy enforcement. We can think of these service enablers as services provided by the Core community to the Edge community. With smart network facilitators providing connectivity plus service enablers, alongside innovative through-the-middle service providers providing innovative services, we will see the emergence of multi-player value networks. It will no longer be appropriate to talk of value-added service providers, because both Edge and Core will facilitate the same value networks.

The Garden Club[tm] would be created by Core service providers unbundling the assets they would otherwise use to build exclusive services. Specifically, the interfaces to IMS and 3GPP service components, the Service Delivery Platforms (SDP), would be opened up to the Edge providers. The Service Delivery Framework (SDF) is – potentially - the great service provider mash-up. By opening the SDF to Edge companies, productivity would improve and roadblocks to innovation eliminated. Edge services could directly the most appropriate QoS and have this automatically provided by the Core.

In this way, the Edge would be sheltered from the complex concerns of the network through the use of a large number of utility services which together provide the "service plumbing" for Edge-developed services. All Edge developed services would use these common services. This ecosystem of pre-developed, run-time "plumbing services" manages and controls the technology of the Garden Club[tm]. Wherever they were originally developed, they can be most usefully managed by the Core, which can distribute access to the services along with the corresponding network facilities.

By allowing the Edge to directly access the Core infrastructure services, those Edge services would provide higher quality service to end users than current "wild west" Edge services. Users who value quality would choose these Garden Club[tm] services in preference to other services. Customer choice would remain a feature of this new environment.

In the Garden Club, the Edge service would be allowed access to the infrastructure and could be billed. Like any customer, the service is already known to the Core network. It has subscribed to certain infrastructure facilities; it has established credit and a pattern of paying on time. It would be up to the Edge service to recover its costs by finding customers or third parties who will pay enough to cover these costs.

Often a service will be delivered to end users on other networks. The Core would

manage these inter-network interfaces for QoS and services and develop a realistic and fair peering arrangement for services to replace the current non-economic peering of traffic. This would allow charge-back to the Edge for these foreign services.

Of course, this model is symmetric. We have talked of the Edge selling its service to end users and utilizing the Core services. A user customer of the Core could also request a service provided by an Edge client of the core; in this case the financial transaction just moves in the opposite direction. Multi-party transactions are also possible, with many Edge services participating over multiple Core providers in an elaborate, but realistic service package or bundle. The Core would provide the multi-party transaction and the settlement services for all parties. Every service would provide periodic resource utilization data to the accounting component. We probably need an embedded micro-payment protocol to more efficiently allocate the costs of multi-party transactions for resource usage; for instance, the provider of a service, the providers of resource services used by that service, the hosts of the service components, and the network utilization can separately "charge" for their part in delivery of the service.

So it's easy to see how Edge providers can benefit, but the Core must be paid for the infrastructure it provides: hardware and software, connectivity, services and other facilities. IMS provides a current model for how this can be accomplished. Linked to IMS or native SIP services, the Edge company's service would make a request of the network, the network would bill for this request as the service facility was delivered. Not much different from today, but instead of the end user requesting the service of the core, the Edge company service makes the request and is charged by the network. Essentially, this is a wholesale model extended to services, but the billing allows use charges by session and facility requested. This fine detail charging information is returned to the Edge, allowing them to develop their own fine-grained charging mechanisms.

This Garden Club[tm] model is not so removed from the way things are today that it would be impossible to create in the market. Everyone - Core, Edge, and end-users – stands to gain in the switchover to this sort of market approach. Where today connections are wholesaled, in future Core services are wholesaled - but using a session usage model to discriminate costs back to usage requests. Unlike the Telco 2.0 media model, which has the core charging both the media company for carrying the traffic and the end user for receipt of the service, the charging model moves in only one direction – one entity ultimately pays all the participants. But the Garden Club model is more flexible, because the transaction can move in either direction, depending of the cost model of the end user service mashup that is delivered.

As the Garden Club evolves, more core facilities would be added to improve the end user experience and enable the Edge to concentrate on developing cool new services. The ecosystem of the Garden Club would grow to include: hosting companies, data storage utilities (hosting data), service product providers (design and manufacture of software), service registries (white page and yellow page directories), device manufacturers and data connection providers. We even have a name for this community: Services Provider Autonomic Collaboration Environment (SPACE). Many different players in the ecosystem would contribute both to the resources in this smart middleware and to the composition of mashup service

products.

Management Requirements

Who will manage the membership? Who will vet the garden membership, collect the dues and fees, and distribute the rewards? Arguably network operators currently have the best-developed tools to evolve into a management capability for the Garden Clubs. But another option is that Garden Clubs themselves would evolve into mutual societies with independent management to perform this function, or even be initiated as for-profit independent enterprise.

Who will set global standards? A global industry organization – a Garden Forum? – could establish the library of core utility interfaces that the Core provides and Edge developed services use. Standardization trims the number of new interfaces developers must learn.

How about infrastructure and services management? The explosive universe of endpoints, connections, and services has become impossible to embrace with conventional management systems. As new services would continue to proliferate, perhaps even faster, could the Garden Club make matters even worse? If the industry gathers behind this Garden Club[tm] model, new infrastructure and service management facilities must be developed that function in this ever more complex environment. This then becomes another call for Autonomic Communications. As the autonomic communications technology matures and is deployed, the SPACE service grid will become self-managing and self-healing – yet, when problems occur that require human input or are beyond policy parameters of automatic response systems, core management components automatically assemble the correct response team in a shared group workspace with full data and tools to respond.

All services will eventually maintain an active connection to security watchdogs – utility security services that enforce security policies. Various services will also watch for and trap unauthorized intrusion - invoking automatic defense services when intrusion is discovered. Accounting services will be linked to security services, limiting fraud in this complex environment.

Starting Point

The starting point for the Garden Club[tm] could be the development of an "open" Service Delivery Framework. Edge service providers must be allowed to co-develop the SDF; it cannot be dictated or controlled solely by the Core providers. It should come to encompass the many technical facilitators that enable Edge service generation to be so rapid and inexpensive. It should include without discrimination: a Web services API; a Java API; a .NET API; and a software developers kit (SDK) preloaded with the standardized interfaces of the Core service components. And, as was originally conceived back in 2005 for the Microsoft Connected Services Framework, it should include components to manage common functions of service control and aggregation; common sets of interfaces and software logic for connecting to back end systems that are based on the TMF eTOM and SID standards.

The creation of such a collaborative SDF would be a great start, but just the first of many steps required to build the collaborative/competitive environment that will provide a sustainable future for the industry.

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