The Legacy of Non-Legacy Vendors in VoIP

iLocus

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Introduction

Up until 2003, the nextgen vendors had been more successful in the VoIP market, showing a better growth curve, than the legacy suppliers. What we have however seen over the last two years is a catch-up by legacy suppliers, particularly Nortel and Siemens. Huawei has also significantly ramped up its shipments within China. Large telcos are starting to embrace the technology and are beginning to migrate from PSTN to IP. As large migration projects are being announced around the globe, it is the legacy vendors, those who enjoyed TDM incumbency, that are getting major portion of the contracts. This paper examines the reasons behind the apparent success exhibited by the legacy vendors in the VoIP market, and whether that success is sustainable in the context of competition offered by non-legacy nextgen vendors.

Legacy Vendors in the Market

If you are an incumbent service provider and you have already spent hundreds of millions of dollars on telecom equipment with a certain vendor, you are likely to take the path of least possible risk. Provided the existing vendor offers a good migration path, you would prefer to stick to the existing partner.

Bigger companies tend to do business with suppliers of similar size. There are very few companies in the world that can handle projects as large as those involving the migration of hundreds of Central Offices. The sheer number of human resources and the financial guarantees require the contractor to be a large and an established company. The bids involved here concern building the networks that generate core revenues of the service providers. It is unlikely that the incumbent service providers will trust their core revenues to a company that cannot handle such a project. Those concerns apparently reduce the choice to a handful of vendors. And those are the legacy vendors: Siemens, Huawei, Alcatel, and Nortel.

The Big Six

Among the legacy vendors, Alcatel has only recently started to ship some VoIP gear. That is perhaps because its TDM equipment in the market is relatively fresh as compared to other legacy vendors. Ericsson has been focusing on IMS trials and is not shipping any substantial volume of VoIP equipment. Huawei is reporting huge volumes of Class 4 gear but nearly all of that is shipped to Chinese carriers. Outside China, Huawei has had some limited success in the Middle East and Europe. Lucent has had problems integrating VoIP products it acquired through Ascend and Telica acquisitions, although in the area of IMS trials, Lucent has perhaps progressed the most compared to other legacy vendors. That leaves two legacy vendors: Nortel and Siemens. Both have been shipping softswitch licenses (Class 5 and Class 4) in millions each quarter for the last several quarters.

Nortel in particular has had a successful product strategy to build upon their Passport product. A carrier that already has Passport in their network, adding VoIP involves just an upgrade in terms of adding IP interface boards next to the ATM interface boards. It can be very cost effective if a carrier, for instance, already having Passport gateways only needs to add IP interface to them.

Nortel has also been a dominant vendor in the cable space. Virtually every cable operator in the world that offered voice over cable in the past has been using PSTN access technology over cable, and has actually put Nortel DMS at the cable headend. So what they are now doing is migrating those DMS switches to IP based solutions. So, again, they have the customer and they are migrating the customer.

It is rather difficult to switch a carrier customer that is using Nortel because Nortel has a good product roadmap and a good migration strategy. In North America where Nortel has a very large installed base that is migrating to IP, it has been a natural and sufficiently large market for Nortel VoIP solutions. That is also one of the reasons why the company has been successful against the Chinese vendors such as Huawei. The question, however, remains that once they have VoIP deployed all over their installed customer base, will they ship as much VoIP equipment as they are doing now. If seen in that perspective, it is plausible to assume that the present level of success will be difficult to sustain.

It is not as if Nortel and Siemens do not have any greenfield deployments. A healthy proportion of Nortel and Simens equipment go towards such projects. However it is often the greenfield network of the existing customer i.e. the expansion project, whereby the customer for obvious reasons would prefer to expand on the same platform.

Limitations in Products Offered by Legacy Vendors

A general criticism leveled against the legacy vendors is that their VoIP gear is not pure nextgen. According to the non-legacy vendors the VoIP solution of legacy vendors is basically legacy/TDM gear with an IP interface. Indeed, we have not seen many instances of legacy vendors winning major brand new footprints. Legacy vendors started from legacy platforms and they are trying to take that to an IP world. In the process, they end up with a product that looks more like a legacy switch. Nortel softswitch is number one worldwide by VoIP ports, but if we look at what the installation looks like, it is huge. It takes up several racks of switching equipment.

On the media side Nortel has been upgrading their DMS platforms with Passport gateway with ATM interface and migrating Passport to VoIP with an IP interface. These upgrades represent the majority of Nortel shipments on the media side. On the switch side Nortel 100 and 200 core is still the DMS XA Core. So the switch platform is still a legacy platform. It is essentially a DMS platform with an IP interface on it. The CS2000 is not a softswitch. It is a call server having TDM interface for DMS and IP interface for Succession (which is now MG family of products). The question is whether we can regard that as architecturally, or in the light of IMS, as a VoIP platform.

Among the former Succession product line, the MG9000 media gateway for instance is also a legacy product (Access Node), which was retrofitted with an IP interface. The MG7000 that was previously Passport 7000 is arguably a data device and a media gateway. However the focus of the argument is not on the media side but on the switch element. For that matter Siemens also has media gateways such as HiG1200s but it is the HiPath 5000, which is the nextgen platform. The 8000 platform, which is part of bulk of the EWSD conversions, is a legacy platform with an IP interface. That is why a huge amount of hardware is required to support platforms like CS2000. Suffice it to say, the core of the VoIP network is the softswitch and in case of legacy vendors, in their migration strategy, it is usually the legacy 20-year-old software architecture of the legacy platforms.

Nortel and Siemens have managed to pursue a hybrid strategy of building a softswitch on top of their legacy platform. These vendors have re-used some of their existing switching code and in some cases their existing hardware. Lucent on the other hand tried to build a softswitch from ground up. They tried several times over, and failed. It proved easier for smaller nextgen vendors to develop softswitch from ground up because they chose to serve smaller markets initially. They focused on those markets and grew from there. A Lucent trying to do that, given the diversity of its customers, would be trying to reinvent the wheel across various markets. Such a vendor would be stuck in development for the next 20 years.

Disruption Created By Non-Legacy Vendors

Historically one would attribute the success of non-legacy vendors to the non-availability of solutions from legacy vendors and also because of the product flexibility offered by nextgen vendors. Legacy vendors had been slow in introducing VoIP in their roadmaps in the late nineties and early years of the new millennium. They were slow in re-organizing their R&D just because they were sitting comfortable on their legacy cash cow, the legacy TDM gear. That in turn gave opportunities for new vendors to sneak in and bring in innovative solutions.

Non-Legacy Vendors and the Long Distance Market

Non-legacy vendors in VoIP have primarily been successful in Class 4 long distance market. It is technically less complex to implement Class 4 applications versus Class 5 applications because of the implications of monitoring and provisioning the network in the latter scenario. The risk of a tandem network going down is small because of redundant re-routing capability. So although the carrier may lose a little bit of capacity in the network, no one will lose dialtone, for instance. If a carrier on the other hand replaces a Class 5 switch and that goes down, then all the subscribers have suddenly lost dialtone and it is much more challenging to recover from that situation. Earlier this month when one of the US service providers tried to move over to the new version of their subscriber feature server, they took down all 65,000+ subscribers, and caused an outage for half the day. The service provider

had to back out from the software update and go back to the previous version of its feature server.

Class 4 replacement is perceived as a lower risk project. The other factor is that it offered immediate cost savings and a better arbitrage play in long distance telephony, bypassing the existing carriers. Legacy vendors were not quick enough to offer solutions here. So non-legacy vendors found it easier to find their way through this route.

A service provider that is looking to expand the network, or replace TDM switches, or looking to do IP Peering (which is starting to become a major issue for service providers because they now prefer to peer via IP), non-legacy vendors are doing extremely well as compared to legacy vendors. In the international long distance (ILD) segment over one-third of voice traffic is VoIP. So the carriers need to deploy VoIP and they need to peer via IP. This is the segment where switch replacement has been taking place at a fast pace. Veraz has been involved in several switch replacements in ILD networks, replacing previous switches from the likes of Alcatel and Nortel.

Looking at Sonus customers, the vendor has some of the largest greenfields and the largest incumbents as customers. Every incumbent and major greenfield carrier in Japan has standardized on Sonus gear. It is worth noting that vendors like Sonus and Veraz have had successes among incumbents as well as greenfields, while as the vast majority of the success of legacy vendors is in their own circuit switched incumbency accounts. In addition, the legacy vendors have had very little success penetrating circuit switched accounts of other legacy vendors.

Among the nextgen vendors, Sonus and Veraz have has had broad scale success. There are certain nextgen vendors that have had niche successes. For instance we have Cirpack that had been focused on France and are now spreading out in Europe. Mera has about 30 Tier 1 customers. About 10 of them are in Russia. The company has several deployments in Eastern Europe as well. Metaswitch focused on rural carriers in the US and they are trying to branch out only now. Tekelec with their acquisition of Santera in focusing on wireless space in certain regions. So there are examples of niche successes out there. There are very few like Sonus and Veraz that have had success among wide range of carriers.

Apart from Sonus and Veraz, Telica, Commworks and Santera also had some traction before their acquisitions. The whole driver behind Telica acquisition, for instance, was the Class 4 applications. Lucent saw not only the non-legacy vendors but also someone like Nortel getting some deployments there. So they realized that they needed some solution of their own. Along with a handful of success stories among the nextgen vendors, there are also plenty of startups who did not have much success. Some of the major names include IP Cell, Rapid5 Networks, Gluon Networks, Convergent Networks, Xybridge, Salix, Transmedia, Comgates, Oresis etc. Most of the platforms that these startups developed are not found in the market anymore.

It is seldom that we see a head to head competition among the nextgen vendors. Due to geographic focus and customer contacts, each one is living in its own eco-system. Sometimes Sonus or Veraz would come across Verso, but it is seldom the situation. Because of the size of non-legacy vendors it is impossible for them to be everywhere in the world in every single operator. So they focus where they are historically strong because of long term relationships.

Veraz for example is strong in replacement. Nuera is strong in cable space. Verso is strong wholesale and clearinghouse business.

It remains to be seen whether the nextgen vendors can repeat their Class 4 success in the area of Class 5 replacement/migration. With Class 5 replacement, however, we are talking about connecting millions of subscribers with SLAs. It is a totally different play. The larger sized non-legacy vendors we have in VoIP market include UTStarcom, Tekelec, and Sonus. Let us consider for a moment that a company such as Sonus bids for a large Class 5 migration/replacement project. The employee size of Sonus is about 700. The question arises whether an incumbent such as BT or AT&T would trust their Class 5 deployment to a 700 man company, unless the Class 5 VoIP offering is an experiment. If Sonus did ever sign such a project the incumbent would perhaps require a few hundred people on the job. So the whole crew of Sonus would be consumed with that one contract. There will not be many incumbents who would want to take such a risk.

Nevertheless, we see nextgen vendors competing with legacy vendors on the access side as well. Access deployments in VoIP owe itself to the timing of broadband proliferation, which has in turn speeded up the Class 5 migration projects of incumbents facing line reduction to Voice-over-Broadband offerings. A lot of VoIP deployments on the subscriber side over the last couple of years are largely due to the uptake of high speed Internet access. With that factor in mind, larger carriers are now taking seriously the Class 5 replacement. Here, one would say that the non-legacy vendors are much more challenged by the legacy vendors than they were in the Class 4 space.

Within the hosted VoIP deployments, there are some success stories among the nextgen vendors that mainly include the subscriber feature server vendors such as Broadsoft, Sylantro, and Netcentrex. However on replacement/migration side, there really are not that many nextgen vendors challenging the legacy vendors. Tekelec and Metaswitch are the two main competitors there from the nextgen non-legacy camp. Metaswitch focused on subscriber features from day one. Although it has been a tough going for them and they have had to find their niche in the market targeting rural ILECs, it is worth noting that those nextgen vendors who instead chose to focus on Class 4 world are now finding it difficult to transition over to the subscriber facing world. Legacy vendors obviously have an advantage in that they have an existing Class 5 installed base, as we discussed in the previous sections of this paper.

Strategy to Compete with Legacy Vendors

Non-legacy vendors did not have the installed base to leverage. Seen in that perspective, their achievement so far has been quite significant. If we look at the shipments outside China where Huawei reports a huge volume each quarter, non-legacy vendors are almost on par with the legacy vendors.

Product Capability

It remains a challenge to compete with legacy vendors since they have their foot in the door. However most of the time, non-legacy vendors have better technology. In most instances, new products are better built from scratch rather than building upon an existing old technology. One can achieve better cost-structure and stronger features by developing the new product from scratch. New technologies based on new components generally perform better. VoIP is one such example. An analogy could be choosing between renovating the existing large house or constructing/buying a new one. Conventional wisdom would favor the latter in most cases.

Succession/CS and SURPASS platforms are old legacy TDM core software running on proprietary computers with VoIP interface boards. Apart from nextgen features, true nextgen platforms can bring same density and performance with five times less hardware than legacy gear. So evolving the existing equipment to support IP is not competitive in terms of maintenance, price, and operational ease. Nextgen products on the other hand offer inherent flexibility.

Flexibility and Customization

Nextgen vendors, which are typically smaller equipment vendors, have important advantage compared to large vendors. Being small means being able to offer flexibility. With all major carrier deployments, no two projects are the same. Vendors always have to customize solutions for particular customers. Companies like Nortel are too slow in such cases. They have large and formalized internal management structure, and customer feedback can easily get lost along the way. At best it takes months for them to react. Small vendors can on the other hand be quick to react to customer demands.

Cirpack, for instance, is currently working with three GSM operators to deploy FMC services enabling convergence features such as dual ringing. The vendor has had to work with three different GSM infrastructures and do the necessary changes in its softswitch platform. Cirpack was up against the legacy vendors in these trials and none of the legacy vendors could provide the flexibility to deliver those features in a short time frame that was set by the service providers.

Long distance VoIP wholesaler Primus used Open Settlement Protocol (OSP) in its network. Veraz integrated its system with OSP clearinghouse network. Its switches were required to make the OSP request to (and deal with the responses from) OSP servers that are provided by Transnexus. A single number service about to be launched in the US based on Versatel platform goes significantly further in terms of the ability to not only connect the caller to several end points, but the solution can instantly conference in all the end points into one call.

Mera provides its customers an embedded margin control system combined with powerful intelligent routing, which can route based on margin the carriers get on various routes. Profitability and margin control is an important issue in the long distance wholesale business

right now, given the relentless prices pressures that this segment has experienced for the last several years.

These are some of the customizations carried out by nextgen vendors. Customization can be based around SS7, service creation, bridging hybrid applications, or migrating a customized TDM service on to a softswitch. Providing such customization requires a flexible and programmable platform.

VoIP service market is very competitive. Operators constantly offer features (to consumers as well as carrier customers) that help them drive new revenues. In a competitive environment features are very important and time to market with new features is even more important. If one operator introduces an application/feature others have to be quick to react and if they are stuck with a legacy vendor they are at a disadvantage.

Open Standards

While legacy vendors have had relative success hanging on to their legacy customers, what one can generally observe is the inability of one of them to penetrate another account i.e. Nortel penetrating a Lucent account or vice versa. IMS gives the legacy vendors a springboard to project their solution set as more open and converged. That brings about the possibility to penetrate other legacy vendor's accounts. Although we have not seen that yet, time will tell if that comes to fruition.

Nextgen vendors on the other hand are generally more focused on open standards than legacy vendors, and that gives them an edge. If we look at the Total Cost of Ownership (TCO), service providers are aware that legacy vendors have been squeezing at lot out of them in terms of the upgrades and maintenance. Some of that is driven by the fact that while legacy vendors may have standard interfaces, the larger aspects of their solutions are proprietary. And we see that even in their softswitch solutions where, for example, traditional remote switching architecture will have proprietary links between the host and the remote. So that means if the service provider has chosen a legacy vendor they are locked in. Nextgen vendors on the other hand very much focus on positioning themselves as an open platform where multiple vendors can be brought in to complete a deployment.

Pricing

In terms of Capex, our estimates suggest that on average, non-legacy vendors offer equipment that is twice as inexpensive as the Nortel or Siemens rates. On small projects i.e. projects involving 10,000 lines or less, an average sofswitch license from a non-legacy vendor is priced between $10 to $20 depending upon the vendor, with the average price being $13. For projects that are large, prices from non-legacy vendors can go down to $5 per license. That would be almost one-fourth of the prices Nortel charges in large projects. These prices exclude the cost of media gateway ports. For a trunking gateway within smaller projects, non-legacy vendor prices range from $30 to $50 per port. Legacy vendors would charge upto $80 per port for small to mid sized projects.

On average, a combined media gateway and softswitch would be priced at $45 per combined port for top end nextgen vendors. This is for a mid sized deployment with around 30,000 ports installation.

Softswitch is predominantly a software application even though there is some hardware that goes with it as well. Legacy vendors, on the other hand, still think of softswitch as shipping hardware out. The software orientation of non-legacy vendors gives flexibility in terms of pricing. Total Cost of Ownership in case on non-legacy vendors or total capex is several times less as compared to legacy vendors. In addition the software and hardware parts can be priced separately. Non-legacy vendor can also charge per subscriber basis in case of Class 5 deployments.

Nextgen vendors can often be in a bid where they quote under a million and Nortel/Siemens price is up around four times that. The gateway cost is where Nortel and Siemens are really hit. With their high end softswitches, which are very hardware intensive, they have a lot of switch fabric that has to be put in. So it becomes much harder for them to compete in terms of pricing.

Market Focus

From a marketing perspective, successful nextgen vendors have stayed focused on the markets they chose to serve. Nextgen vendors have in general been articulating that trunking will happen before access, and wireline before wireless. They have stayed focused on that vision. And their vision is to an extent coming to fruition. This laser focus is one of the reasons why some of the non-legacy nextgen vendors have been successful competing head to head with incumbent vendors.

Although some of the non-legacy vendors have made some inroads with the incumbents, but the main focus of non-legacy vendors in general continues to be the alternative carriers. And this happens to be the customer group that is growing the fastest among the service providers. In fact this has been the case for last several years following deregulation worldwide. Increased focus on alternative service provider market also stems from the fact that the solution set that the nextgen vendors have, are tailored towards the requirements of alternative service providers rather than the incumbents.

Some of the smaller players among the nextgen vendor segment also find niches within the incumbent service providers. For example, an incumbent may not want to migrate their TDM infrastructure today but might be willing to offer an international long distance service, or just PC-to-phone service – areas where a non-legacy vendor would be asked to come forward.

Working with Large IT Integrators

Certain large carriers, which could include some of the incumbents also, go for the best of the breed solutions. And within such projects, non-legacy vendors stand a better chance. Other large carriers may prefer not to be the system integrators themselves. They prefer a turnkey solution from a single source. To handle large-scale deployments, there are very few system integrators who can guarantee end-to-end system integration of the scale that an incumbent would want.

If we look at legacy vendor VoIP portfolio, many of the products are brought in either through OEM arrangement or through partnerships. So the large vendors are effectively carrying out system integration. The question is whether a service provider wants the legacy vendor to be the system integrator or whether they prefer the likes of Cap Gemini and IBM – who also work with non-legacy vendors – to be the system integrator. In an IMS world where products are IT oriented, it might make sense to use IT oriented system integrator to bring in a turnkey solution. We have not seen that yet, but it seems plausible to assume that the bigger IT houses will take on the system integration for large service providers. And that trend will obviously favor non-legacy vendor products.

Shipments of Non-Legacy VoIP Vendors in 2005

During 2005, over 27.8 million Class 4 VoIP sofswitch licenses were sold worldwide. If we consider sales of non-legacy vendors only, that number gets reduced to approximately 5.36 million. Most vendors and startups would regard just the latter figure as representing true nextgen VoIP deployments. Table 1 below gives iLocus estimates of Class 4 licenses sold by non-legacy vendors during 2005. Sonus leads the market with 60.4 percent share followed by Cirpack, UTStarcom, and Veraz.

Class 4 Softswitch Shipments of Non-Legacy Vendors (2005)

	Sonus	Cirpack	UTStarcom	Veraz	Tekelec	Netcentrex	Verso	Versatel	Mera	Metaswitch	Others	Total
In millions	3.24	0.61	0.38	0.29	0.26	0.16	0.1	0.05	0.04	0.04	0.19	5.36
Market share	60.4%	11.4%	7.1%	5.4%	4.9%	3.0%	1.9%	0.9%	0.7%	0.7%	3.5%	100%

Table 1: iLocus estimates of Class 4 licenses sold by non-legacy vendors during 2005

Out of the 5.36 million Class 4 licenses sold by non-legacy VoIP vendors in 2005, an estimated 791 thousand went towards international long distance (ILD) deployments. Although we have been providing information related to Table 1 above in our quarterlies, estimates of ILD Class 4 licenses have been provided for the first time by iLocus. Table 2 below gives the estimates of individual vendors' shipments. Sonus leads the market with 39.3 percent market share followed by Veraz with 25.3 percent and Cirpack with 10.2 percent share. It is worth mentioning here that most ILD Class 4 shipments worldwide are sourced from non-legacy VoIP vendors. Figure 1 below gives market share in ILD softswitch shipments.

ILD Class 4 Softswitch Shipments of Non-Legacy Vendors (2005)							
	Sonus	Veraz	Cirpack	Verso	Mera	Others	Total
In thousands	311	200	81	75	39	85	791
Market share	39.3%	25.3%	10.2%	9.5%	4.9%	10.7%	100%

Table 2: iLocus estimates of ILD Class 4 licenses sold by non-legacy vendors during 2005

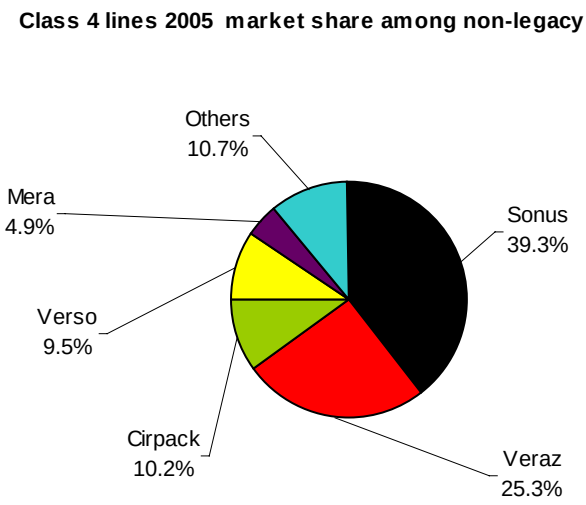

Figure 1: Market share of ILD Class 4 licenses sold by non-legacy vendors during 2005

Since most nextgen vendors highlight the openness and standards compliance of their softswitch platforms, it is worth analyzing who among the nextgen vendors really have independent softswitch platforms i.e. platforms that are commercially deployed along with media gateways of other vendors. If defined as such, we have to exclude a few nextgen vendors here that strictly, and almost invariably, sell their softswitch along with their own media gateways only. Exclusions would be Sonus, Cirpack, UTStarcom, Tekelec, Versatel and Metaswitch. Having excluded these vendors, we have a handful that offer true independent softswitch platforms in the market. Table 3 and Figure 2 below provide the results. The analysis is quite revealing. Veraz with a market share of 47.4 percent is perhaps the only major vendor in the market with an independent softswitch platform. As our 1Q06 quarterly report on Carrier VoIP Equipment reveals shortly, Veraz has significantly ramped up the deployments. In 1Q06, Veraz sold 263 thousand Class 4 softswitch licesnes. We expect vendors like Sonus and Veraz to show strong performance throughout 2006.

Class 4 Softswitch Shipments of Independent Softswitch Platform Vendors (2005)							
	Veraz	Netcentrex	Verso	Mera	TDSoft	Others	Total
In thousands	286	160	100	39	18	Neg	603
Market share	47.4%	26.5%	16.6%	6.5%	3.0%	0%	100%

Table 3: Market share of independent Class 4 softswitch vendors in 2005

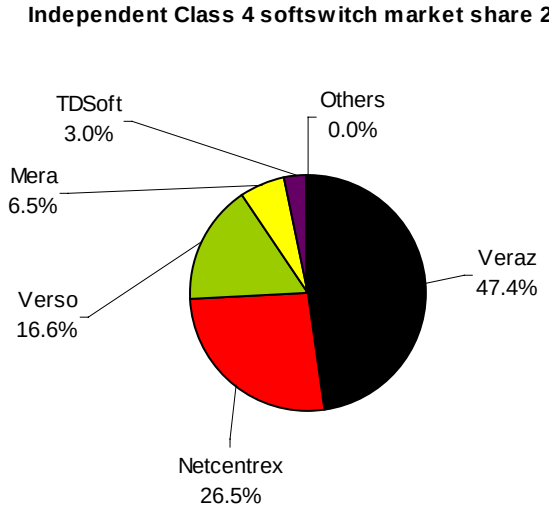

Figure 2: Market share of independent Class 4 softswitch vendors in 2005

Shipments alone do not provide a complete picture of the leadership. Utilization levels of the equipment should be consulted along with shipments to get a better overview of the competitive landscape of non-legacy equipment vendors. Table 4 below gives the estimates of ILD traffic handled during 2005 by various nextgen platforms. Over 37.3 billion ILD minutes of VoIP traffic were handled by Class 4 softswitch platforms of non-legacy vendors during 2005. Sonus leads the market having handled 53.7 percent of that traffic. This is followed by Veraz and Verso.

ILD Minutes Handled By Class 4 Softswitch of Non-Legacy Vendors (2005)

	Sonus	Veraz	Verso	Mera	Cirpack	UTStarcom	Others	Total
In thousands	20,013	4,600	3,088	2,953	2,530	1,725	2,386	37,295
Market share	53.7%	12.3%	8.3%	7.9%	6.8%	4.6%	6.4%	100%

Table 4: iLocus estimates of ILD Minutes handled by Class 4 softswitch platforms of non-legacy vendors (2005)

Appendix

Non-Legacy Vendors Studied
Sonus
Cisco
Cirpack
UTStarcom
Veraz
Tekelec
Netcentrex
Verso
Versatel
Mera
Metaswitch
Nuera
Sentito

Table 5

Table providing information on the number of customers and the number of countries where each non-legacy vendor has deployments.

Vendor	Number of Carrier Customers	Number of Incumbent Customers	Number of Alternative Carrier Customers (Main Challengers to the Incumbents)	Number of Countries Where the Vendor Has Deployments
Sonus	54	10	32	30
Veraz	45	10		50
Mera Systems	413	6	N.A	54
UTStarcom	7	N.A	N.A	N.A
Telekec	250**	N.A	N.A	N.A
Verso	300	15	N.A	80
Cirpack	80	5*	30	30
Versatel	N.A	N.A	N.A	6
Netcentrex	56	N.A	N.A	N.A
Metaswitch	105	45	40	9

*Affiliates of the incumbents
** Includes ATM customers