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Mitigating Risk in the New Economy

Addressing changing user needs and market trends

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The telecommunications landscape is in transformation, as new technologies change the habits of increasingly demanding end users. In the process, a growing number of opportunities – and risks – are being created. As this new generation of consumers and professionals express its needs and desires, new players are coming and going, causing value chains and business models to rapidly emerge, evolve or go bust.

Companies like Google, Skype, Yahoo! and others are taking advantage of free Internet resources and the widespread availability of broadband access to compete against traditional players by offering new services – often using an incumbent carrier's own infrastructure. At the same time, digital media is decoupling content from classic distribution methods, placing formerly independent players into the same marketplace. Examples include online video-on-demand services vs. brick-and-mortar video rental shops or VoIP providers vs. fixed telephony companies.

In response to these trends, telecommunications service providers are striving to adapt and take advantage of the opportunities in this new global landscape. They are harnessing numerous assets to deliver new offerings of their own. For instance, network operators can:

- Expand their revenue sources with enhanced TV services to compete with traditional broadcast media.
- Differentiate themselves from other competitors by offering blended services; and/or
- Bring in new revenues through different business models. For instance, a service may be free to subscribers, yet collect revenues from advertisers via targeted, personalized campaigns that are based on intimate end-user knowledge.

To succeed in this new environment, service providers must focus on knowing their end users much better than ever before. At the same time, they need to embed flexibility into their service delivery capabilities to take advantage of user needs, new trends and developments. Naturally, risk is inherent in almost every possible move, but these risks can be mitigated if they are properly understood and addressed.

Managing Risk

Understanding market dynamics and properly interpreting current trends is a prerequisite to charting a course of action. To successfully execute this new course, a number of elements are crucial to avoiding operational pitfalls. Some of the risks – and the keys to mitigating them – revolve around:

- **Internal barriers to innovation:** These can stem from inflexible processes and systems that can lengthen time-to-market and contribute to high production costs for new services. They also include organizational issues. However, as operators move away from service stovepipes by incorporating innovative service delivery capabilities, they can find ways out of this potential trap.
- **Misunderstanding end-user needs and their evolution:** Intimate knowledge of the subscriber base is critical to providing the proper service mix and experience, and therefore to avoiding user dissatisfaction and churn. However, by employing the right techniques and tools to identify and follow end-user preferences and changing behaviors, service providers can develop compelling offers and generate additional revenue.

Improperly managed risk can result in lost opportunities, spoiled investments, offended shareholders and lost customers. Yet, doing nothing is not an alternative. New and innovative services are needed to serve new end-user needs. Apart from the services themselves, offering the right user experience is a cornerstone for success in today's environment. From a business perspective, it is critical to have the lowest possible cost structure because the new competitive reality involves players with nimbler infrastructures and simpler operational systems.

Service providers must be able to launch new services flexibly, while reducing the significant costs associated with service creation, deployment, operation and billing. This same flexibility and cost efficiency must also be brought to bear when retiring unsuccessful services. Service providers will need to experiment with different mixes of telephony, web, video and other offers. New market conditions also put pressure on service providers to find non-traditional revenue sources by implementing creative and innovative new business models.

Winning companies will take advantage of the new Web 2.0 and content capabilities that new competitors are using and combine them with their own assets – both tangible and intangible – to develop new revenue streams.

Breaking Barriers to Innovation

In order to do so, service providers must break down barriers between internal service "silos" in order to provide a single, rich, end-user experience. The ability to readily and seamlessly access the assets within each silo becomes critical in responding to end user behavioral trends. Alcatel-Lucent research shows that end users are, in fact, willing to pay more for services that seamlessly blend content and multiple capabilities than for mere connectivity, such as the ability to access all services and content via any device, using a single network-based address book.

Alcatel-Lucent studies demonstrate that more than twice as many enterprises and consumers would be willing to pay more for blended services, as compared to bundles that simply package voice, data and video. What's more, about 60% of enterprises and consumers are willing to switch providers to get access to personalized and blended services.

The key to successfully creating user-centric services lies in effective collaboration among internal service provider departments, as well as with content providers and other service partners.

For instance, since service expectations are no longer bound to dedicated infrastructures, it is important to create and manage services independently. It is important to break down infrastructure silos in order to effectively blend legacy telephony, web, Internet Protocol Multimedia Subsystems (IMS), IPTV, TV and mobile services.

To move away from service stovepipes, a new common frame-work is required. Specifically, service providers must be able to:

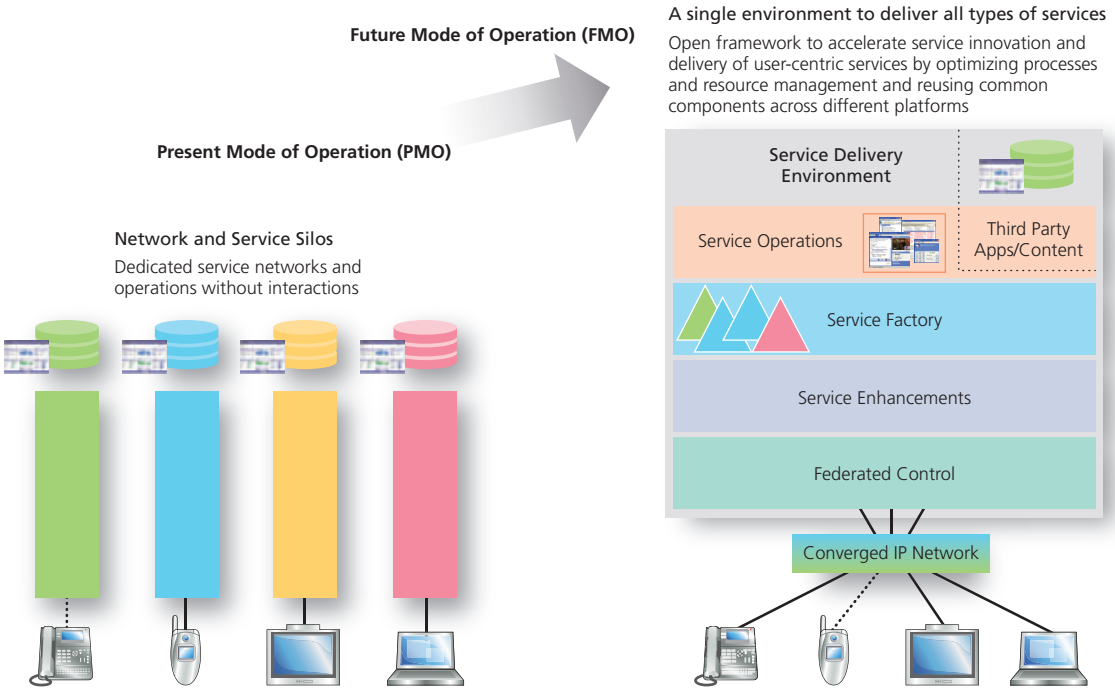
- Create blended, personalized and context-aware services that leverage web, IPTV, IMS, mobile video and legacy infrastructure capabilities independent of each technology-specific Service Delivery Platform (SDP).
- Allow new services to be created by communities of third-party developers and end users. This will be done via Session Initiation Protocol (SIP) and Parlay/Parlay X, or other exposed web services.
- Enable flexible business models and promotions, such as pay-per-feature, multi-screen advertising and others.

- Reduce costs by establishing and re-using common processes (such as automatic provisioning, partner and end user self-care portals) through capabilities and assets in a Service Oriented Architecture (SOA) framework.
- Leverage tangible and intangible assets across technologies. This access includes presence, location and convergent payment capabilities, subscriber data and profiling.

It is important to foster service creation and delivery capabilities that take advantage of current and future assets as well as new players in the value chain. It is also necessary to move away from the current practice of developing each indi-vidual service as a stovepipe (Figure 1).

When each and every service is created in isolation – as is typically the case today – it hinders competitiveness at the network and service levels. It duplicates functionalities (raising operating expenditures) and prevents timely creation of services that blend capabilities from multiple domains.

Figure 1: **Future Mode of Operation (FMO) will break barriers to innovation**



Successful players in the FMO environment will have capabilities built on a vision and framework that enable them to quickly take advantage of new trends, technologies and service requirement opportunities. They will find ways to generate new revenue rapidly and will have the flexibility to adapt to new business models and user demands. In the process, they will be positioned to tap into communities of users and developers to roll out offerings that monetize user sessions, while reducing time-to-market, operational complexity and costs over time.

The Alcatel-Lucent Service Delivery Environment (SDE) provides a blueprint for ensuring that service operations, service enhancements and federated control can be leveraged across different SDPs. This can result in the development of a Service Factory, where personalized and blended services can be created.

Employing the SDE will assure the flexible and cost-effective creation and delivery of services. Using this framework, service providers can quickly satisfy the evolving expectations of consumers and enterprises, while taking on the new breed of competitors enabled by the rise of IP networks.

The SDE effectively coordinates multiple SDPs that share common functions within a converged IP infrastructure. Each time a new service is created, the SDE uses common resources and processes in an SOA. This reduces the risks and costs of service creation and life cycle management.

Understanding the End User

To embrace new opportunities, service providers must intimately understand the end user so they can offer services that deliver compelling end-user experiences. More than defining the proper service mix, end-user intelligence opens up new ways to generate revenue.

For instance, in the United States, operator Virgin Mobile is offering free minutes to users in exchange for the opportunity to show them targeted advertisements. Instead of paying money, end users are offering personal information in exchange for services. Virgin is then using its subscriber reach to generate revenues from brand managers and marketers.

To effectively monetize their subscriber relationships, it is crucial for service providers to do more than simply provide advertisers with access to users. Service providers must first organize their data with a subscriber data management (SDM) solution to ensure consolidation at the network and service layers and perfect their understanding of user preferences and behavior patterns or profiles.

Simply analyzing market segments and trends using traditional methods is no longer sufficient to make a competitive difference. In order to differentiate service and deliver value to end users, specialized approaches are required to bring deeper and more precise insight. For instance, Deutsche Telekom interviews 2,000 consumers and 500 enterprises each year to better determine their needs. Alcatel-Lucent also supports service providers with specialized end-user research to deliver appropriate user-centric solutions.

A Word About Confidentiality and Privacy

Capturing and maintaining information from individuals is a very sensitive undertaking from a privacy perspective. User profiling and profile data management systems must comply with applicable international and national privacy policies. User acceptance and acknowledgment of data collection activity is imperative. Indeed, each end user balances the desire for privacy protection against the benefits of new, personalized services.

Alcatel-Lucent Bell Labs proposes an approach based on high-level policy settings that allow end users to determine their own privacy parameters based on their confidence and trust in the service provider. For example, an end user can specify the types of service (IPTV, mobile video, web browsing and so on) and traces (watching, interactivity, zapping) that can or cannot be used for profiling. Individuals can also opt out of allowing access to profile data for targeted ads based on specific interests.

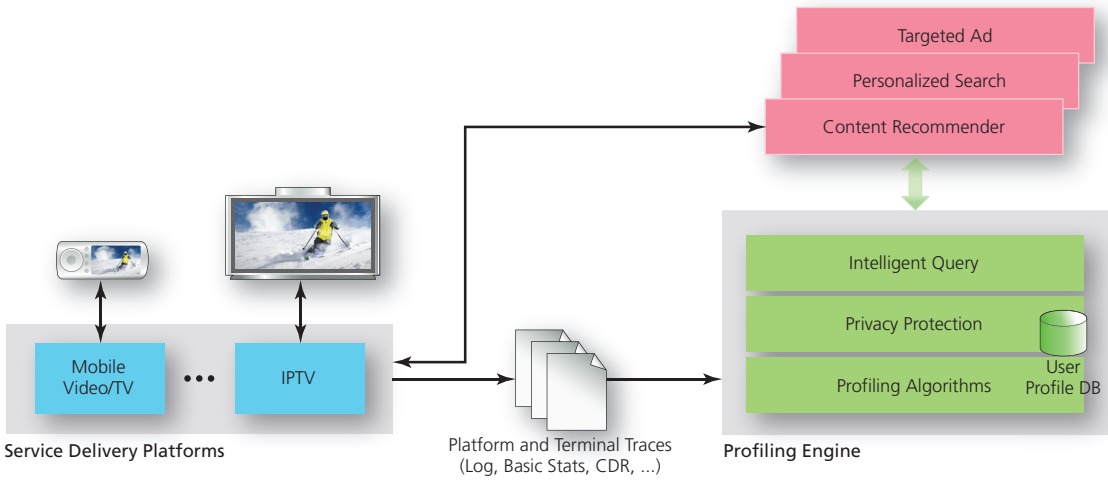
New user profiling techniques take this analysis to the next level. They capture knowledge about the end user on a much more frequent basis. Service providers can leverage their existing one-to-one relationships with customers by using profiling techniques to analyze and interpret day-to-day user behavior and data. In this process, providers come to know their customers not just as segments or demographic groups, but also as unique individuals.

Service providers already have data on end-user service consumption trends and are well positioned to accurately infer user preferences, interest domains and behavior patterns. To leverage this information and deliver value-added services, service providers need to employ an efficient profiling tool.

In response to this need, Alcatel-Lucent's Bell Labs has developed a research prototype "profiling engine" that enables service providers to accurately and automatically learn about end-user preferences and understand consumer behaviors in real time. With this profiling engine, service providers can:

- Measure all end-user usage traces (such as logs, call detail records and user interactivity traces) collected from the various SDPs;
- Define user models representing the viewer's interests, consumption habits and behaviors according to the user's context;
- Implement profiling algorithms that aggregate all the usage traces to follow the real-life evolution of the user's profile;
- Integrate preferences explicitly declared by the end user;
- Offer intelligent interfaces to the user-profile data in order to easily and efficiently personalize diverse applications, such as content recommenders, targeted ads and social networking; and
- Implement individual user – and comply with statutory – privacy requirements.

Figure 2: **Profiling engine allows personalization of various applications**



With the profiling engine (Figure 2), operators will dynamically learn and update the user profile in a rich multimedia service environment. It accurately represents the real-life evolution of the user's interests and behavior. The profiling approach is fundamentally different from efforts currently based on web and e-commerce technologies. For example, solutions like Google AdWords, AdSense and Amazon Recommender are dedicated to a particular web-based, personalized application. With Alcatel-Lucent's profiling engine, service providers can differentiate from web and IT actors by conducting profile analysis of multiple personalized applications. It accomplishes this by leveraging diverse usage data collected from different SDPs, such as mobile video/TV, mobile portals, IPTV, IMS and others.

Turning Risk into Opportunity

End user demands and technologies will continue to evolve, allowing new players to enter the market and inspiring new business models. Service providers must adapt to this new market reality and develop strategies that facilitate the quicker development, launch and retirement of services flexibly, while re-using existing infrastructure and investments.

Successful players in this new environment will build service delivery strategies based on a framework that takes advantage of new trends, new service requirements and new ways to earn revenue, while minimizing operational risk.

An important element in the Alcatel-Lucent approach to risk mitigation is the Service Delivery Environment. It gives service providers the flexibility to adapt to new business models and user demands, while reducing time to market, operational complexity and costs. It is part of the end-to-end Alcatel-Lucent Transformation Advantage™ Framework for network, services and business transformation. It starts with an architecture blueprint and includes solutions, products and services available today that can be deployed in a modular way according to business priorities. These capabilities are effectively augmented by the Bell Labs Profiling engine, which offers an efficient tool for leveraging subscriber information into new value-added services.

The transforming telecommunications market offers plenty of opportunities. Alcatel-Lucent can help service providers exploit these opportunities, while minimizing operational risk. Indeed, the greatest risk today lies in ignoring the need for transformation, while the competitive landscape changes with increasing speed. ▸▸

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