Enabling ease-of-use for increased take-up of data services

White paper

NOKIA
Connecting People

Contents

Most mobile operators and service providers consider content and services to be their most important form of differentiation. Market research predicts highly attractive growth rates, especially for mobile data services. However for end-users, ease-of-use is the key factor for deciding to activate and continue use of those services.

The challenge facing operators and service providers is to make the service take-up effortless and the service experience enjoyable. Meeting this challenge requires creating simple end-user interfaces and focusing all internal processes on delivering end-to-end Quality of Experience.

The market opportunity for data services

Market growth predictions provide one motivation for network operators and service providers to improve the data service experience. For example, some research predicts a 270% increase in average monthly ARPS (average revenue per subscriber) for data services in Europe from 2005 to 2020, as indicated in Figure 1.

Nokia predicts a CAGR (compound annual growth rate) of 9% for the mobile services market during the years 2004–2009 (see Figure 2). This growth will be due largely to growth in data services (CAGR 23%), with CAGR at 6% for voice and other calls. Data is particularly a growth driver in emerging markets and Asia.

Some researchers provide more conservative figures, but all the research indicates that definite growth opportunities exist for mobile data services. The question is, who will capture the market growth and how is it enabled?

Business fact
Significant marketing and improved usability are required to stimulate demand for many of today's nascent data applications.
(Source: European High-ARPU and Youth Customers Are Most Likely to Churn, Yankee Group).

Today, the true "killer" data application is still text messaging, a typical example of person-to-person communication. Other end-user services, however, have not taken off as expected in recent years. The primary reason for this slow take-up is that most of these services do not fulfill the expectations of users. Although ring tones are one example of successful person-to-content services, progress must be made for market take-up of other mobile data services such as:

- Messaging (e.g., MMS and e-mail)
- Entertainment (e.g., graphics, logos, games)
- Information (e.g., directory services, news)

Average monthly data ARPS by region, 2000–2020					
Monthly data ARPS	**2000**	**2005**	**2010**	**2015**	**2020**
Asia Pasific	$2.05	$3,57	$3.96	$4.74	$5.74
Africa Middle East	$0.10	$0.84	$1.48	$1.98	$2.43
Latin America	$0.11	$0.94	$1.65	$2.20	$2.69
North America	$0.15	$2.09	$6.50	$11.17	$14.02
Europe	$1.59	$5.03	$7.77	$10.71	$13.66

Figure 1. Researchers project tremendous growth for data services revenues in all world markets. Source: 2020 Vision for Nokia, Pyramid Research.

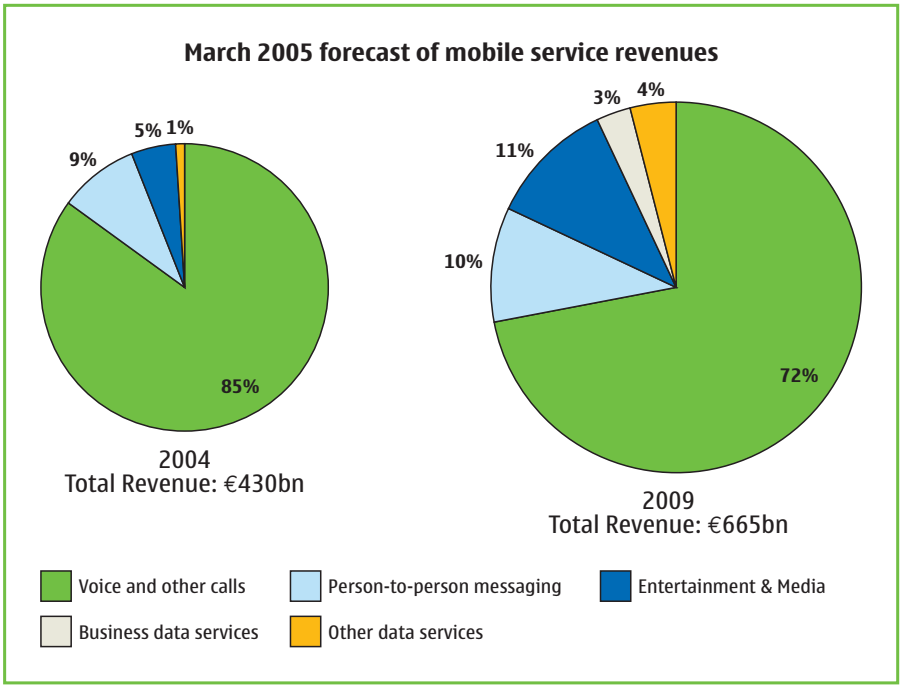

Figure 2. Mobile revenues will continue to experience attractive growth rates through 2009, especially in data services. Source: Nokia March 2005.

There are two main barriers to increased usage of data services. First is the lack of relevant service propositions, where the price does not correlate with the perceived value of the service. Second is the complexity of service adoption and usage, where users perceive that data services require too much effort compared to other solutions.

User needs and market growth are clearly present, as illustrated in Figure 3. However, mass-market adoption will happen only when the service providers have identified the relevant service propositions and ease-of-use factors.

Delivering ease-of-use is within the reach of any service provider, regardless of whether it operates its own network. However, the challenge is to understand the underlying reasoning for end-user behavior and usage patterns and to organize the service offering accordingly. Visibility into the end-user service experience can be obtained from resources such as sophisticated end-user quality monitoring systems, continuous end-user behavior studies and end-to-end performance field measurements. Moreover, it is of great importance to analyze internal customer processes and readjust them according to customer needs. Eventually, the need to be attuned to the customer experience might lead to a new, customer-centric organizational structure with clear responsibilities for end-to-end Quality of Experience (QoE). Who will have the overriding responsibility for end-user experience will vary depending on the operator's business model and organizational structure. In order to prepare the organization for differentiation, the research firm Forrester proposes that the marketing department should be made responsible for the total customer experience. [1]

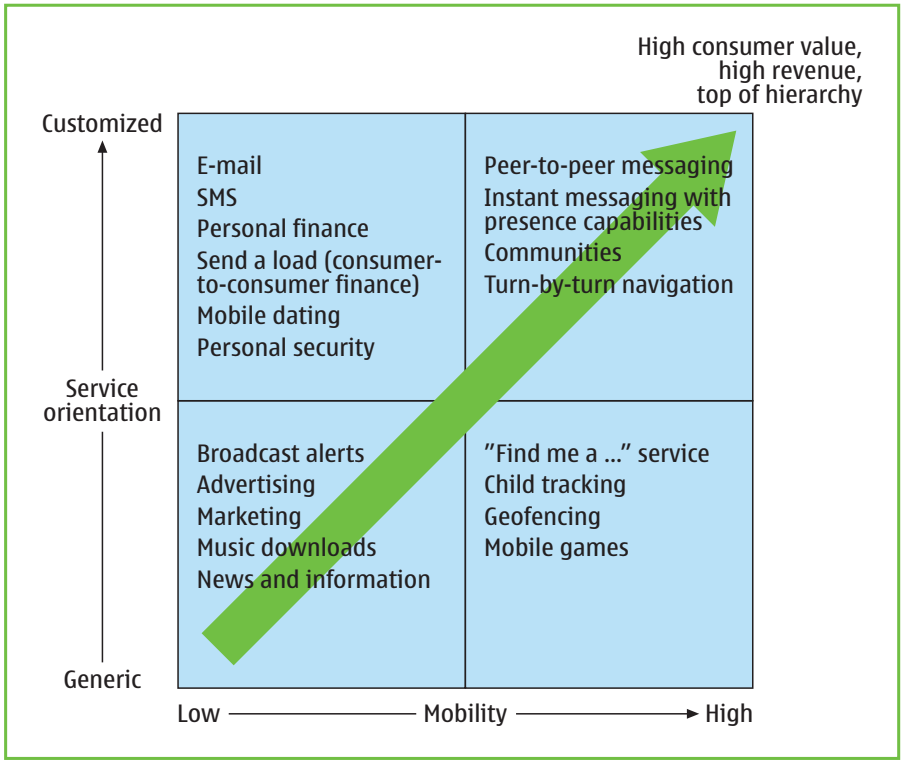

Figure 3. A variety of user needs will drive market growth for mobile data services, but only if they deliver an easy-to-use experience. Source: Search Continues for Mobile Data Revenue Drivers (Gartner, 2005).

Today, service providers offer data services that appeal to a very small proportion of mobile users: the young and technology-savvy. This group is also one that is most prone to churn. Yet today's high ARPU (average return per subscriber) users are arguably the customers to retain, as they will likely remain at high ARPU levels for some years to come.

Business fact

Churn – and the threat of churn – is highest among high-ARPU (average revenue per user), younger customers who will represent the most valuable customer segments in the next five years. 16% of customers who currently spend more than €75 per month expressed a likelihood of switching service providers, compared with only 7% of those who spend less than €25 per month.

(Source: European High-ARPU and Youth Customers Are Most Likely to Churn, Yankee Group).

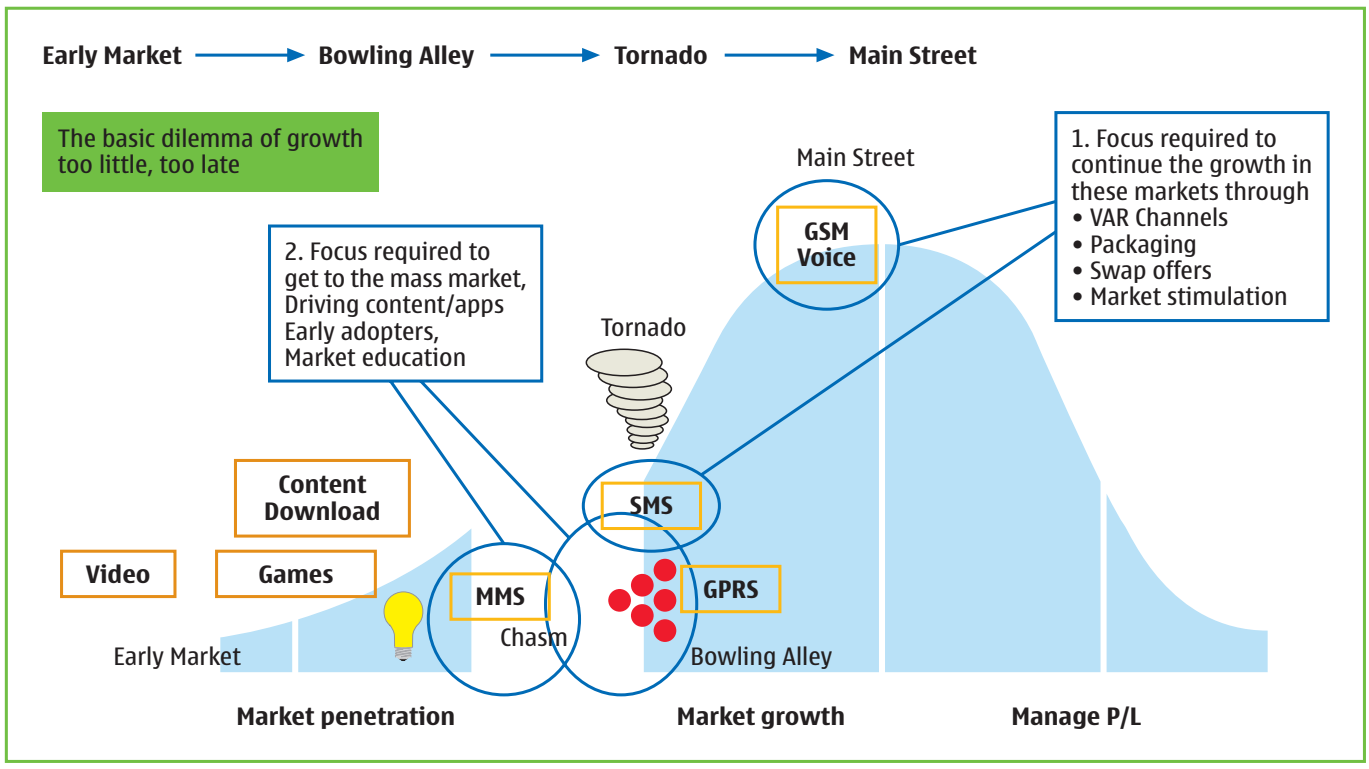

Figure 4. Ease-of-use is important for accelerating mass-market adoption of new mobile services. Source: Nokia and Geoffrey A. Moore: Inside the Tornado.

However, a large untapped potential exists among the present base of non-users: the 10% of existing customers who use services infrequently or do not use services at all, even though they have the right mobile handset. In general, these mainstream users are more loyal to their existing service provider, making them a group to reward for their loyalty. Ease-of-use is one of the key factors when increasing customer loyalty, which, in turn, will lower churn and eventually lead to a decrease in marketing expenditures. Differentiation by ease-of-use experience will also have an effect on increasing ARPU, because it speeds up the adoption of new services. [2]

The more mainstream the target users, the more they value ease-of-use and customer intimacy and seek practical uses for new services. The fact that ease-of-use is particularly relevant to mainstream users makes it such an important consideration. Making a service successful in the mainstream market has been the challenge for most existing services. Creating ease-of-use in services will help a service provider to "cross the chasm" from the early market of innovators and trendsetters to the mainstream market of average users (see Figure 4).

Business fact
Easy-to-use and integrated service experience is the "killer application" in the fragmenting end-user markets (e.g., handset, usability).
(Source: Yankee Group)

Creating and implementing a business strategy that focuses on ease-of-use will enable the service provider to increase service revenues. Naturally, strategies across geographical regions and operators differ and it is not possible to copy exactly from the experiences of others. Service uptake and usage differ vastly depending on the stage of the overall society and service culture, main technologies chosen, competitive market situation, maturity level of networks, and other network lifecycle variables.

What is ease-of-use for end-users?

The main reason why data services have not yet achieved mass-market adoption is due to the complexity perceived and experienced by end-users. The poor reputation of data services increases the threshold of willingness for non-users to experiment with data. Bad user experiences also inhibit existing users from adopting new services. [3]

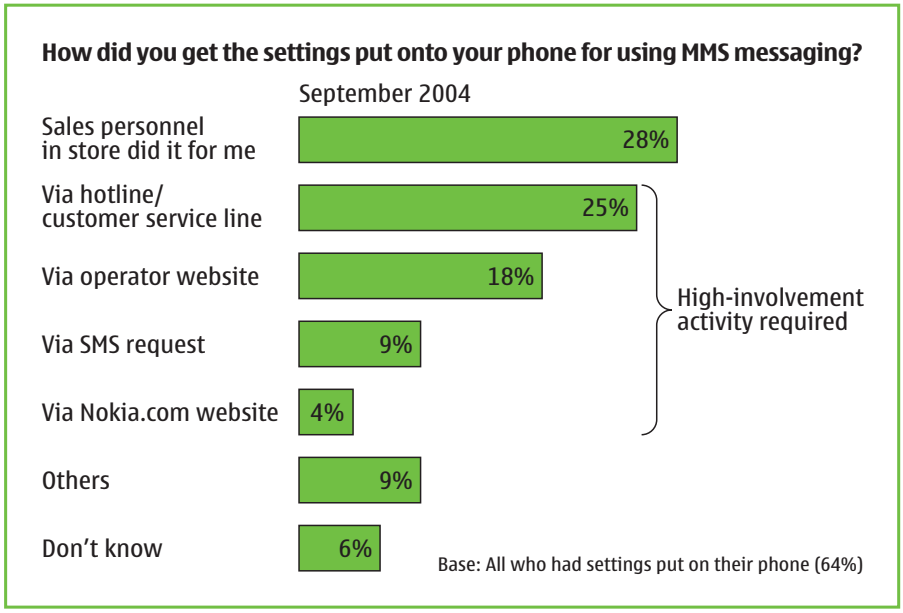

Figure 5. For a complex data service such as messaging, most users seek setup assistance from a person, whether by phone or in-store. Source: Nokia End-User Research.

Simplified service setup

Mass-market service usage can occur only if the technical barriers for end-users have been overcome. Improving the initial phase of service delivery is a sure way to increase the use of a mobile service, which will lead to an improved end-user experience; higher revenues for service providers, operators and developers; decreased customer care costs; and decreased churn rates.

Finding and subscribing to a service are the first hurdles for a potential user. End-users expect the same effortless and easy access to services via a mobile phone as they are accustomed to with other channels (e.g., Internet, TV). However, easy access to a service is dependant on the user's frame of reference. Some users consider access via a branded Internet portal easy, while some users prefer a browser menu on the device. Knowing your customers is the key to identifying the most appropriate access channels and improving the efficiency of marketing.

Business fact
Experience has shown that the fear of users toward complex handset configuration often results in a large percentage of handsets that are never actually configured.
(Source: Nokia and external sources)

Service set-up and configuration is the crucial stage in the service adoption process. Users often consider setting-up and configuring services the most tedious part of service take-up. Studies suggest that users will abandon the service after two or three failed setup attempts. As the number of functions on mobile sets continues to grow, users find it increasingly difficult to configure and maintain services and applications on their devices (see Figure 5). Focusing on delivering ease-of-use in set-up and configuration is paramount in order to promote service adoption and improve revenues from services.

Business fact
42% of all sold mobile handsets were MMS-enabled in 2004. In Western Europe, 62% of all handsets sold will be MMS-enabled in 2004, reaching 92% by 2009.
(Source: Strategy Analytics 2004)

Simplified user interface

For an easy-to-use experience, service content must be undemanding and plain. Ease-of-use comes from effortless navigation, with a simple structure that does not require reading a user manual to be understood. Understandable terminology used throughout the service session enhances the experience even further. The user interface should have flexible content behind it, in the sense that the content adapts seamlessly to different terminals. Ease-of-use is also created by minimizing the user's exposure to the underlying technology when using the service.

A simple and practical user interface, coupled with relevant content, is a prerequisite for a successful service concept. Any device offered as part of a service must be carefully matched with the requirements of intended users. An easy-to-use experience stems from a service concept that successfully combines relevant content with a matching device.

Handset functionality already includes email, various types of messaging, and access to Internet and entertainment functions. However, end-users experience the increasing functionality of handsets as too complicated and are hesitant to use them. As such, complex handsets do not by themselves promote increased service usage.

From the perspective of service management, ease-of-use means integrated systems that feed service information into reporting systems that enable the service provider to monitor and assess service usage online, in real-time.

Application developers must consider the scalability of applications in order to deliver adaptability for different interfaces in devices and in the network.

Clear payment methods

The ease-of-use experience is also reflected in payment options and processes, which should be as effortless as possible. These processes include payments and associated transactions, such as contracts required to access the service, as well as procedures to make and confirm transactions.

End-users favor suppliers that can minimize the risks involved and maximize the user's level of comfort and confidence. The end-user should feel able to control spending and feel secure about the services used. For convenience, users prefer to pay for services with existing pre-paid or post-paid accounts.

Easy access to customer support

Offering customer care is an essential part of an ease-of-use service experience. The working customer care concept creates stickiness between the end-user and the service provider. Customer support can be offered via a call center, by providing automated self-service or through in-store support. The challenge is to choose the customer support combination that best matches the specific service proposition.

For call centers, ease-of-use manifests in quick response, least number of call transfers, transparent tariffs and knowledgeable personnel. The better the alignment in business processes, supporting infrastructure and related call center processes, the better the capabilities for delivering superior call center service.

Another contact point for users is often provided via a branded Internet portal. An Internet portal is an attractive option because it supports end-users 24/7 and is cost-effective for the service provider. Users can access the portal to manage and modify their own account. Connection stability and logical navigation with a minimal number of clicks determines the ease-of-use experience in an Internet portal.

Nokia 6680

Business fact
Providing easy access to information about services and technical assistance is one way to appeal to a wider audience for services.
(Source: End-User Motivations for Mobile Services, Nokia)

The third contact point for users is in-store support. This support is difficult to organize and manage for quality as it is often outside of a service provider's own business realm. End-users often perceive in-store support as inadequate and not fulfilling their needs. Many end-users complain about the service they have been given while visiting an outlet.

Simplified service termination

Termination of the service should be as simple as possible in order to lower the threshold for a user's willingness to test the service. A simple SMS or MMS message should be adequate to terminate the service.

How to enable ease-of-use?

Enabling ease-of-use means assessing the service provider's operations throughout all processes and supporting infrastructure.

The challenge is to create and sustain these processes while the market for new services and commonly agreed procedures are still developing. Simultaneously, some traditional telecom operators might be struggling with legacy systems that do not support today's business requirements. All operations are affected in one way or another, but the starting point should be to create an environment that enables end-to-end service monitoring. [4]

Ease-of-use cannot be realized without information throughout all of a user's experience with a service. Customer interface management, customer care, service development and maintenance, and service delivery are the functions and operations that are most influenced by this need for end-to-end monitoring (see Figure 6).

Processes for customer interface management and customer care should be revisited to ensure ease-of-use throughout service usage. A service provider can adopt several strategies to tackle these service and operational issues. Options range from independent service and content development, delivery, maintenance and charging; to outsourcing; to combinations of these methods.

One option to solve the operations issue is to choose a third party to operate and maintain all or part of the network and/or applications. This option reduces the complexity of operations and provides improved quality, while reducing a service provider's risks, time-to-market and complexity.

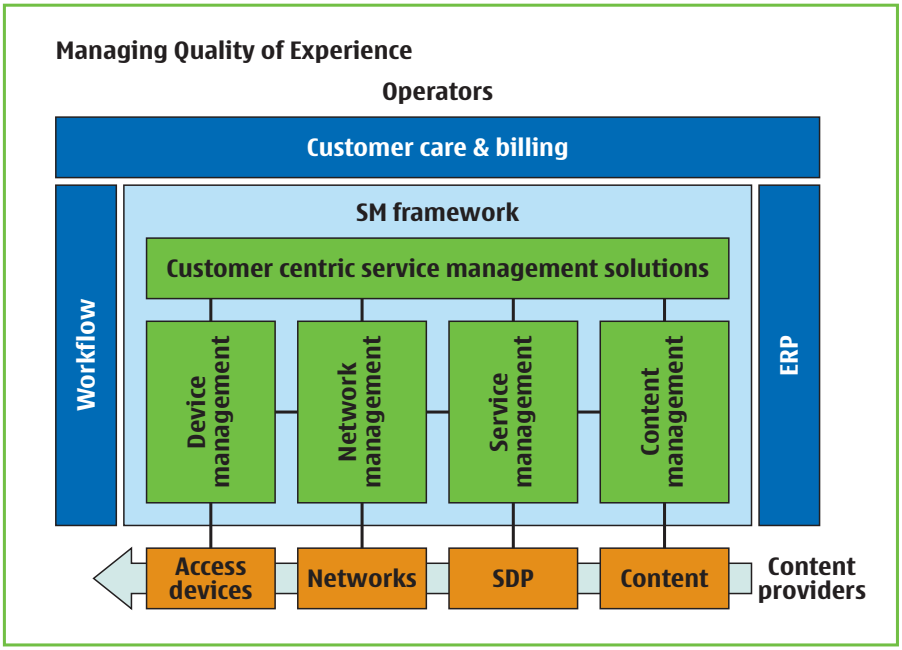

Figure 6. End-to-end monitoring of the complete user experience provides the insight necessary to improve all processes involved in service delivery. Source: Nokia.

Harness the service information

Developing the capability to monitor services end-to-end is essential to creating a top-quality service experience. Service control is the "heartbeat monitor" of network availability as well as for end-to-end service monitoring and quality. Different digital media mechanisms (e.g., SMS, MMS, streaming) – combined with user and service information visible in the network (e.g., location) – can offer valuable reporting for business processes such as marketing, charging, authentication and delivery assurance.

Harnessing the service information has several benefits that will increase the usability of services and help to break the barrier to reaching mass-market service take-up.

Create an integrated information database

Analyzing the existing service usage helps to target and develop relevant services, with relevant service propositions, for different user groups. Comparing this information and creating an integrated database for usage information provides a great advantage to service providers in creating relevant value propositions for different segments. This relevance naturally boosts service usage and leads to increased customer satisfaction and reduced churn.

Ensure ease-of-use across all access points

Whether a customer contacts the service provider by a Web site, by phone or in-store, all forms of contact should reflect the same ease-of-use. Customer care programs should support and match the service proposition. For example, if the brand promise is to deliver ease-of-use, a service provider should consider how to address different contact points throughout the service usage cycle and harmonize the user's experience across all of them.

Collect user feedback

Ease-of-use requires working feedback loops for users. This feedback is essential in order to continuously improve the ease-of-use experience. Harnessing the customer contact points to actively gather and deliver information on user experiences is by far the most effective way to gather feedback.

Well-trained customer support personnel, equipped with access to a robust customer database, will create the preconditions for successfully delivering ease-of-use in customer support. Service usage data provides the customer contact personnel with additional and powerful tools to serve customers for maximum effect while also reducing call times for improved efficiency.

User feedback, when utilized effectively and inserted into service development and delivery processes, helps to further improve the user's service experience. Inbound contacts are a premium opportunity to offer assistance and guidance on service usage, make recommendations, offer rewards, and ask for feedback on service availability, value propositions and other issues. Comparing the feedback with service data in order to expand customer knowledge even further will help service providers make choices about relevant services and improve service ROI (return on investment). Coupled with actions taken to improve the service experience, effective feedback channels decrease churn. Feedback also helps to avoid the case where a service is rejected for reasons that are unknown to the operator.

Assure agility in service development and maintenance

Providing effortless usability should be the starting point for any service development project. The service development phase is the time to consider the delivery chain toward the end-user. Careful planning and assessment during the development of a service concept helps to solve bottlenecks identified in the delivery and support processes.

Improve user-centric service development

Customer-centric service development requires input from existing users and rigorous interaction with marketing to develop concepts that deliver true user value. Customer-centric service development integrates the user demand information and the capabilities of enabling technology into innovative service concepts. These concepts are then introduced to the network in a manner that avoids disruption and poor network performance during service testing, integration and launch.

Service development should reflect a clear understanding of the challenges of dynamic technology evolution and multiple service environments. Future trends will require mobile management between converged multi-access networks. They will require interconnectivity between domains and service control functions such as charging, subscription management and provisioning.
In addition, all of the service elements must interoperate smoothly with the underlying IP core network.

Manage the service lifecycle and portfolio

Delivering services that are easy-to-use requires rigorous lifecycle and portfolio management of services, based on sound planning. This planning will help the service provider to effectively deal with change, scale the solutions and optimize the service lifecycle.

Choose enabling technology based on business potential

Technology choices enable and support easy-to-use services. Some services and applications may require relatively large amounts of incremental investment. The magnitude of this investment depends on the complexity of the technology, the infrastructure and any support required from external service providers.

Benchmarking the expenditure against the best estimate of likely market demand and return on investment is a starting point for technology choice. Technology choices should reflect the benchmarked margin opportunity rather than focusing on revenue impact. Performing a limited market trial of the service to validate business assumptions is a wise precaution before full network rollout.

Prepare for future service launches

Technology choices should also reflect future expectations for new services and the network infrastructure. The challenge is to simultaneously:

- Build services and content-delivery infrastructures
- Support new business models, expanded value chains and related infrastructures
- Ensure the interoperability of new and existing network elements and functions

Involve third parties

Creating a win-win situation for all parties involved in service development and creation is a challenging but necessary step for providing relevant services and ease-of-use to customers.

Designing ease-of-use should also reflect the third parties involved in service development and delivery. Service development often involves third parties that must be managed, compensated and integrated into the service provider's operations. Management of third parties requires established practices and an established environment to test and create the services, delivery platform and revenue-sharing model.

Establish the ecosystem

Organizing the ecosystem for service development and third parties in a cost-effective manner can be done either by the service provider or outsourced. Outsourcing entails less investment and diminished risk for the service provider. It also improves time-to-market by reducing the required service development time, because the ecosystem is already established and the processes fine-tuned for maximum efficiency.

Share the investment burden

Attracting third-party investment is one way to possibly lower the financial, commercial and technical entry barriers to service developers and content and applications providers. This cooperation will improve interoperability, making it easier for end-users of other networks to access their own wireless content and services.

Distribute revenues

Models can show how to distribute revenues to third parties in a consolidated manner. Consideration may be given to whether:

- The service provider bills the customer for all services, then distributes the revenues to third parties
- The service provider allows third parties to bill some part of the service revenue from the customer via the service provider's billing platform
- Billing and revenue distribution are handled separately, perhaps by other parties

Create a robust and flexible service delivery mechanism

Ease-of-use is created in both the delivery and support phases. Service data helps to pinpoint and solve service delivery bottlenecks and improve the ease-of-use experience. Management of present services is all about improving the basics of service delivery and fine-tuning and optimizing the existing operations. Ease-of-use requires an end-to-end delivery capability with smooth transition from one delivery phase to another. Fine-tuning the basic network functions of provisioning (e.g., system audit, configuration, system update), delivery (e.g., service download and refresh) and support (e.g., troubleshooting, back-up and restoration, remote disenable) will help to create an ease-of-use experience.

Ensure smooth service take-up

One of the most critical bottlenecks in service delivery is take-up. Offering a simple process for the customer to subscribe, set-up and configure the service is best accomplished through maximum automation of service delivery. This automation will improve cost efficiency, reduce errors and enable error detection, contributing to ease-of-use. For the end-user, automation means convenience and simplicity, which lowers the threshold for a user's willingness to adopt a service.

Integrate the business infrastructure and support systems

Ensuring the interoperability between systems in a way that offers visibility of service usage should be the starting point for integration of the associated business infrastructure and support systems. Related business infrastructures provide the framework around the services, which allows follow-up to further develop the business and services. Delivering ease-of-use addresses a service provider's practices and supporting tools related to the market and customers (e.g., fulfillment, assurance and billing, strategy), services (e.g., infrastructure and product support for planning and lifecycle management), resources, suppliers and partners, and operations.

Organize for flexible pricing

Creating links between service management and billing systems to ensure fit-for-use pricing is an essential part of ease-of-use. A related issue is management of customers and subscriptions, where the aim should be collecting information about the customer's subscribed services and the accurate bill, then bringing this information together in a coherent and effective manner.

Ensure availability and speed across networks and devices

The availability of services anywhere, anytime is the key in ease-of-use. However, delivering this availability is highly challenging. Mass-market penetration can be accomplished only when the availability of services matches the user's expectations. To end-users, mobility means limitless access to services.

Maximize service performance

Maximizing service performance starts with ensuring the interoperability of the device, service and network. Creating this interoperability should be part of the initial service development. The goal is to provide users with a device that supports service usage rather than hinders it by being, for instance, too complex.

A network that is equipped with adequate intelligence can make the management of services and devices much easier and give required flexibility to service development. Optimized service control minimizes redundancy and contributes to reduced costs for service introduction and operation. These results are achieved by controlling functions such as provisioning, subscription management, and charging for both circuit-switched and packet-switched services.

Offer undisrupted service

Another important goal is to offer undisrupted service that flows at the agreed service level between the end-user and the network. Prioritization and different treatment for classes of traffic enable a service provider to differentiate among user types and offerings in an effective manner.

Use standardized network elements

The chosen technology should ease complexity, not create it. Using standardized network elements and devices enables increased coverage across networks and services by reducing network complexity. Technology investments must be focused on functionality and services the end-user wants, and is willing and able to purchase.

Conclusions

By focusing on ease-of-use in the end-user experience, mobile operators and service providers can accelerate the take-up of data services and enhance their differentiation from competitors. Ease-of-use also contributes to customer satisfaction, increased customer loyalty and decreased churn.

Delivering ease-of-use is made possible with visibility into end-user expectations and usage patterns, and an operator's willingness to organize the service offering accordingly. It is also important to analyze internal customer processes and readjust them according to a focus on Quality of Experience. Eventually, the need to be in tune with the customer experience may lead to a new, customer-centric organization structure that has clear responsibilities for the end-to-end customer experience.

A unique understanding of customer requirements, attitudes and behavior means Nokia is able to provide insight across the operator organization and consult on future service launches to maximize end-user adoption. Nokia has the technology, vision, innovation capability and expertise to help operators and service providers take full advantage of new market conditions-and realize greater profit and growth.

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