
Cover story: The Indian tiger

by Nathan Hegedus, page 10

► Sunil Mittal was raised in the heart of Indian politics, and built a telecom giant in an economy just opening after decades of relative isolation. Mittal is the fourth-richest man in India and the ninth-richest CEO in the world, with his family worth about USD 7.7 billion, according to Forbes magazine. His Bharti Airtel is now the largest mobile operator in India and the third largest national operator in the world. Today Indian companies are venturing off the subcontinent, regional powerhouses looking to make a global mark in emerging markets as well as in Europe and the US. Last year Mittal pursued a merger with pan-African operator MTN to create the largest telecom company in the world.

The deal fell through, but has since been revived.

“We have a business model that works in emerging countries and can be replicated, if you look at our pathbreaking models of outsourcing things like networks, IT, and call centers,” he says. “And we want to test it.”

Telecom is all about scale, says Mittal – big scale, scale on the order of tens of millions of customers.

Mittal’s big break came in 1992, when the government began issuing licenses for mobile phone services, and Mittal won the bid for the Delhi circle. Mittal credits his foreign partnerships, unusual for India back then, for his company’s success. Over the years, he has worked with Siemens, BT, AT&T, Telecom Italia, IBM, and Vivendi, among others.

Outsourcing allowed Bharti Airtel to “scale up very quickly,” Mittal says, and focus on distribution, brand, innovation in services, and collection. He emphasizes that the outsourcing was done for practical, not financial, reasons and

that all of the company’s networks remain “on the books.”

Within telecom, 3G is the game changer, but not the way most people might think, he says. In the US and Europe, 3G will be centered in urban areas. In India, Mittal believes 3G will make the most impact in rural villages, where India’s crushing poverty is at its worst and where Bharti Airtel has opened 20,000 service centers in recent months.

Mittal has launched a series of new “customer-facing businesses” in the same way he built his telecom empire, with foreign partnerships in long-insulated and massive domestic markets. These moves are highlighted by a partnership with the US retail giant Wal-Mart to open multibrand stores that Mittal hopes will redefine Indian retail. Mittal has also teamed up with AXA in life insurance and asset management, and with Del Monte Foods in agriculture.

Mittal says that, ultimately, he is a businessman, an entrepreneur, and an industry player, not a politician or spokesman for India. But he has also called Bharti Airtel “an Indian champion,” and he is clearly trying to build an Indian business giant, not an untethered multinational. This sense of national purpose and pride seems to drive much of his quest to export India to the world and import the world to India.

Yield management

by Sanjay Kaul, page 16

► Operators are utilizing on average only 35 to 40 percent of their network capacity. It takes some creativity to turn this huge dormant asset into profits. Yield management may hold some answers. It works well with industries that require a high initial investment and have perishable products such as airlines seats, time shares, and hotel rooms, which produce no value if not used. The telecom

industry faces similar challenges. Transmission costs per byte are low but network construction involves high fixed costs, and capacity is perishable in that unused bandwidth is lost.

Yield management principles would indicate that, as the costs of using network capacity are minimal, it makes sense to use as much of it as possible when it is available and maximize revenue from it when it is in shorter supply.

Increasing revenue, however, is not the only benefit of yield management. It can also reduce the need to increase capacity, resulting in savings in investment for providers, which can be passed on to consumers as lower costs. Reductions in costs will also enable users with lower disposable incomes to access more services than previously. Other consumers would benefit from a greater degree of choices as new services created to utilize spare network capacity become available.

This article presents a few concrete examples that have been commercially implemented and have proven to improved revenues and reduced tariffs significantly. For each service, several decision variables can be considered to maximize revenue from available capacity; for instance, pricing, capacity limits, and admission control. Incorporating all such decisions in a single model usually leads to complicated formulations. A framework that decouples the decisions from each other to obtain simpler, more insightful models is therefore immensely helpful.

If yield management initiatives are to succeed in the telecom industry, the problem that internet-type networks have in obtaining network information needs to be solved, as accurate collection of information on available capacity is crucial.

Telcos can learn a lot from other capital-intensive indus-

tries that have developed extremely sophisticated yield management systems: Commodity industries such as petroleum refining or time-based industries such as transport understand the principles, the link with transaction and product pricing, and how to use these factors to increase revenue.

Yield management strategies and tools will help to improve capital-asset utilization, ensuring quicker return on investment and much lower production cost of productions. The reality, however, is that the necessary yield management strategies and tools have yet to surface.

Multi-country operators: How to cash in on synergies

by Marcel Noordman, page 20

► Multi-country operators offer a number of services across multiple countries and sometimes use their brand name across their subsidiaries. They support this by group-wide brand management, advertising, and sponsorships that smaller national players find difficult to copy. Many of them team up with other multi-country players to co-brand and co-market their services. Having operations in multiple countries creates flexibility in financial management and scale benefits in procurement of handsets, content, and infrastructure.

Synergies in knowledge, operations, and networks are more difficult to create and therefore less common. They include substantial cost savings from common strategies, functions, operations, and platforms.

A number of operators have established technology and network expertise centers, either centralized at headquarters or virtual across their operating companies, to focus on technologies that can provide competitive advantages in the near future. Common technology road-

maps and collaborative R&D, alone or with technology partners, provide a competitive advantage on the local level with unique functionality, less technology risk, and optimization of the installed base. Commonality between networks opens the door to more centralized network support, operations, and optimization.

An obvious set of synergies, but difficult to implement, comes from consolidating parts of the networks into multi-country centers for testing, operations, service delivery, and assurance. Especially for new services with an unproven business case, operators have the option of creating multi-country service centers. Typical examples are multimedia messaging services, mobile push mail, pre-paid roaming, and IMS-based services. Most multi-country operators have consolidated their IT infrastructure into large data centers and outsourced their IT management and support, as well as other back-office activities, to lower-wage locations. They have an opportunity to improve effectiveness and efficiency by applying common methodologies, policies, and infrastructure.

Studies have looked into consolidation of other network nodes, such as circuit-switched and packet-switched core control and database functions. Although the savings potential is high, implementation is challenging.

There are many barriers to cashing in on potential synergies. In reality, only a few large operators have recently started to show some value for their size, some after years of mixed results and false starts. Legislation can spoil the party. Issues around transfer and storage of confidential customer data across borders, local legal intercept capabilities, and implementation of regulatory obligations become difficult. Local oper-

ators typically see more cost than benefit in cross-border group initiatives. Change-management skills are essential for the process and hard to acquire. Cultural differences can be a source of innovation, as well as an impediment to communication.

Data abundance – how to make intelligent use of it

by Vasile Nedelcu, page 24

► Over the past decade, many software vendors have touted their products as all-inclusive solutions to data warehousing and business intelligence (BI) problems. As a result, many organizations have sunk copious amounts of money into these panaceas, building specialized data warehouses, operational data stores, data marts, and business intelligence applications on top of these data stores or legacy systems, creating what might be called a “data mart anarchy.”

Most businesses don’t use information to their best advantage. In many cases, only static data is analyzed, because originally it was only thought necessary to create a data warehouse or a data mart for static data, such as the number of customers and orders, and what products have been sold and in what location.

However, new competitive pressures and government regulations like Sarbanes-Oxley are moving us toward a real-time environment. Information needs have changed from collecting only static data only to collecting business events. We must reduce the time between learning about a problem and acting on it. In marketing the trend seems to be one-to-one marketing – reaching each customer, creating a micro-market, in real time.

The solution to telecom’s problems is a Real-Time Intelligent Enterprise (RTIE),

which combines powerful database and data warehouse solutions with EAI or ETL technology, enterprise portals, and BI capabilities to deliver tremendous value in the form of a complete, customized desktop environment. The system includes access to integrated data, knowledge management systems, content and document management systems, learning systems, collaboration tools, and business process management systems – or, as we once called them, workflow systems. It enables organizations to solve business problems and delivers returns on investment.

BI engines and delivery methods – such as executive dashboards – play a major role in the RTIE by providing proactive alerts and insight into issues that must be investigated, analyzed, and researched. Meanwhile, data-mining engines can detect patterns of fraud, churn, or risk that activate the alerts.

Integration is the key. Today’s telcos are plagued by information and process “silos” – self-contained units of information or expertise with a narrow focus and little idea of what’s happening outside their unit. BI can break down those walls with a combination of business systems analysis and links between the various processes so there are no gaps between sales and provisioning, or between marketing and IT.

Telcos have come to see the data traversing their networks as a commodity. Each CDR has a value, and success lies in realizing the greatest return on the transmission of that commodity from one paying party to another. The BI approach does not negate this – rather, it adds a second layer of value to the data: the information contained within it. This shift in thinking allows telcos to realize the potential of a higher-order system that considers both

the information value and commodity value of their data.

Don’t worry – Mobile broadband is profitable

by Greger Blennerud, page 54

► Following more than two years of research in close cooperation with 18 operators, Ericsson has come to a clear conclusion: Mobile broadband business cases show high profit margins, even if the operator is only a pure bit-pipe provider catering to the needs of subscribers using computers.

One conclusion is that mobile broadband provides a great addition to any operator’s business, and can match and compete effectively with DSL. In a network where the operator already has sites available, from a 2G network, and in an urban area with higher utilization, the network cost per subscriber is below EUR 1.

At Ericsson, we have noticed that operators often struggle with their own calculations because of difficulties in identifying or allocating costs that are strictly related to mobile broadband.

Our analysis includes looking at how an increase of traffic per subscriber affects profitability, assuming all other things are equal. We conclude that, within limits, we can maintain strong profitability even if traffic increases drastically. We also have also seen that profitability drops unless enough subscribers are added. Many operators still have a long way to go before they have enough subscribers to be profitable. At the same time, we do see a few operators who, after two years, have reached a population penetration above what we use in this sensitivity analysis. What still has an effect on the end result for these operators is the amount of nodes that they have built out so far.

The most common argu-



»»»» ment is that heavy downloading through file sharing via peer-to-peer applications generates huge amounts of traffic. As a consequence, few operators dare adopt an unlimited flat rate. Even though this flat rate promotes subscriber uptake and is the easiest pricing for consumers to understand, operators still worry about uncontrolled costs from heavy increases in traffic.

This can be met by traffic-handling priority: giving the heavy user a lower priority in the network once the fair-use level is reached. Traffic-handling priority allows an operator to focus on dimensioning the network for normal usage while still allowing unlimited or “all you can eat” traffic.

The consumer gets better overall quality and the comfort of using an unlimited service that does not generate surprises on the bill.

In the long run, an unlimited flat rate with a fair-use clause is potentially cheaper and more profitable for the operator than bucket plans. Introducing intelligent management functions in the network allows the operator to handle all sorts of situations, such as separating application streams from each other, or varying traffic – and perhaps pricing – depending on time of day; or giving different priority to smartphone users over PC users; or giving paying mobile-TV viewers a higher priority than “best effort” internet.

Smart energy – How to become smart consumers

by Jens Erler, page 38

► Smart consumers can’t “save the planet” unless they interact with a smart electricity network. Therefore, a key element is the transformation of today’s static electricity networks into smart grids. The large-scale integration of electricity generation from renewable energy sources will change the operating condi-

tions for electricity networks fundamentally.

In a smart grid-perspective, electricity will be generated at different remote locations all over the electricity network, rather than at central power plants. Many renewable energy sources generate electricity in an unsteady manner; for instance, depending on weather conditions. Demand-side management does not only mean reducing peak demand, but also ensuring that demand follows generation to some extent. The consequence of these mechanisms is increasing electricity system volatility and therefore an increasing risk of blackouts.

In order to address these challenges, the electricity networks will have to become transformed into “internet-like” networks. The internet has been built as a robust network with distributed resources and intelligence, and different options for routing information from source to destination. The smart grid idea is to apply the same concepts also for electricity networks.

However, the best internet-like concepts and distributed intelligence does not help if network elements can’t communicate with each other and with control centers. Communication networks connecting all network elements playing an active role in smart grids concepts will be the nerve systems of our future electricity networks. But the demands on these communication networks are high. They have to take care of very different types of traffic, from control signals that have to travel very long distances in virtually no time (e.g., to isolate electricity line faults), to broadband connectivity providing video surveillance of mission-critical assets.

The smart meter will also be a key sensor for smart grids, collecting very valuable measurement data about the “health status” of the electric-

ity network (e.g., short interruptions, or over- or under-voltages), and thereby will help to enhance network operations substantially.

Experience from the telecommunication markets has shown that market liberalization fundamentally changes the game board. It creates substantial challenges for established market players but it also unlocks impressive creativity to find new business models, new ways of working, and new approaches to consumers. New active market participants, including consumers, will enter the markets, consumers among them. The situation creates as many uncertainties and threats, as it does opportunities – for existing players and for new players.

Getting paid: Convergent charging and billing

by Jaco Fourie, page 34

► The telecommunication industry can’t avoid being affected by the global financial crisis, and operators will need to cut costs in order to keep margins where they should be. Business support systems (BSS), an important part of the infrastructure, are vital to the operator, as they provide competitive advantage and enable customer satisfaction; hence, BSS in general, and convergent charging and billing in particular, is an investment area regardless of an operator’s maturity or the market it operates in.

Most incumbent operators have several service- or technology-specific charging and billing systems in operation, which makes their BSS environments inefficient and highly complex, resulting in high cost and poor market agility.

New operators implement a converged solution from the start, because their main objective is to gain a competitive advantage over the incumbent. But operators with existing BSS environments face a greater challenge – imple-

menting convergent solutions while keeping the business running. There have been a number of spectacular failures in recent years where operators undertook massive migrations to new systems.

To achieve convergence, an operator must of course have a plan, but that plan must be on the right level. As transforming the BSS environment takes several years, the plan should be broad, flexible, and include key objectives, such as whether all users will be charged in real-time, and why. The plan should identify the main functional layers and perhaps some detail, but anything more is a waste of time and money.

The next step is to look at the operator’s short-term business objectives and the offerings it needs to launch in order to remain competitive. Each new offering should be developed according to the highest level of the plan and not violate any key objectives.

In this way the operator can transform a legacy environment into an agile and modern convergent environment step by step. After each step, the long-term plan should be reviewed. A stepped plan (as opposed to a “big bang” migration) allows the operator to progress toward a defined strategic objective, while maintaining its agility in the market. A stepped plan also lets the operator adopt new technologies and methodologies as it goes.

A convergent charging and billing solution must be access independent and payment option independent, must combine the retail and wholesale flows, and must enable a combination of private and business use on the same phone.

Opinion: Pity the poor developer

by Allan MacKinnon, page 48

► Through device-specific or operator-specific mobile application stores, consumers

can now download a wide variety of entertainment, news, and productivity applications. Combined with ongoing mobile device innovation, these new “app stores” seem to indicate that mobile application development is becoming increasingly streamlined and efficient. Unfortunately, that is not the case, and mobile application developers struggle with “device fragmentation” or the inability to write once and run anywhere. Now their livelihood is being further complicated by new application storefronts. Each app store launched adds complexity because applications often need to be rewritten and repackaged for each store.

There are more than 1 billion feature phones across the globe, and this presents a tremendous opportunity for consumers. Operators’ on-deck downloads provide another way for consumers to access applications, but developers must navigate a complex landscape of approvals just to have their applications listed on these portals.

Device fragmentation among feature phones presents developers with their most expensive challenge, one that is unlikely to get better soon and may actually get worse. Fortunately, mobile fragmentation challenges can be addressed. Device differences can be “defragmented” with a platform that includes a new mobile programming model, supporting infrastructure services, and even a downloadable runtime client for some devices.

Device capabilities will vary, wireless networks aren’t always available, and bandwidth and battery life are precious. This drives the need for a “cloud” of mobile network services that supports the new mobile programming model. Developers need to move close to a truly “write once, run almost anywhere” solution with a rich graphic

and media presentation layer for delivering applications that look great on an array of devices.

Finally, the platform should support a cross-device and cross-operator application store or catalog that supports free, paid, advertising-based, and enterprise revenue models. The same notification and synchronization services used to update content can be used to guarantee that both the catalog and applications are always up to date. Developers must be able to manage rights and distribution of their applications, as well as receive detailed usage analytics, just like with web applications.

It is clear that today’s market fragmentation will not benefit any of the parties involved. With a more consistent system in place, more and better applications will be developed for consumers.

The battle of the platforms

by Mikael Timsäter, page 52

► The concept of “open source” is entering the mobile domain with initiatives such as Openmoko, Symbian Foundation, and Google Android. Open platforms mean outsourced innovation, as they allow third-party developers to add value to products. Open operating systems can also save costs for terminal vendors and minimize the entry barrier.

There is an ongoing race between telecom players, computer, and internet-companies to reduce barriers for developers and maximize reach in the mobile domain. The race for “owning user data” and data mining has just started, and only time will tell how the different stakeholders will exchange and trade information.

Which operating system will establish dominance? There are no clear winners in sight. Symbian Foundation, Apple osx, and Android are candidates but Palm webOS

and Microsoft Windows will challenge the mobile world as much as the PC world. It’s just a matter of time. In true convergence, a mobile operating system cannot stand on its own; it depends on what is on the server side. Mobile devices might take a similar path to that of the personal computer, from its introduction in 1981, with the IBM PC, to the modular concept we have today.

The PC and internet industries are challenging the telecom tradition with new priorities, claiming that user experience wins over a long list of technical features, and that fast application development is key. Introducing open platforms invites the innovation force of the internet world into the mobile domain. Vigorous internet brands will attract consumers to mobile services, and accelerate usage and data traffic.

These initiatives have spurred the mobile industry to open up its environments and execute changes. Telecom operators need to cooperate with internet companies – they should act now to secure a competitive position in the evolving value chains but also continue to build on their customer relationships to their customers. Operators need to encourage the diversity of consumer services and devices that enter the market. This transformation shares similarities with what has happened in other industries; for instance, retail.

There are many possibilities for telecom operators to evolve in this direction, such as by extending their role as reseller of third-party applications. By bundling devices and services they can create offerings targeted to each customer segment. Subsidized packages and graphically attractive home screens will speed up service adoption.

Operators own many assets that add value to mobile services. Therefore, they are in

excellent position to act as the gateway between independent service developers and telecoms.

Get down to business with mobile ads

by Nick Wiggin, page 42

► In reality, mobile advertising is beset with difficulties. There has been a lot of over-claiming and under-delivering of mobile services to the consumer, and advertising services have been affected by this.

There are strong arguments for continuing to invest in this area, despite the economic downturn, because the realities of advertising remain, even during difficult economic times.

The appeal of mobile advertising compared with other channels is its ability to put brand messages in the palm of a consumer’s hand, anytime and anywhere. Advertisers value the impact that of a brand message delivered to a mobile phone will have, and look for providers who can manage that process. A unique value-add for advertisers is the prospect of leveraging subscriber profile data to make targeting more effective.

A central issue at present is the openness of operators to allowing third-party access to data management. Not surprisingly, operators have been reluctant to allow small startups to integrate directly with their own systems. There has also been a significant amount of distrust and nervousness about allowing the major internet players access to subscriber profile information. Advertisers want to know what ad space they are buying and who views it, and they will pay a premium if the operator can provide them with generic information about the ad viewer, such as age, gender, or location.

Research by Ericsson Consumer Lab found that con-



»»»»» sumer reactions to mobile advertising were favorable when certain “best practice” requirements were met. The study makes clear that by adhering to industry guidelines on best practice and working together agencies and operators can overcome the barriers to mobile advertising and kick start real revenue generation. We now have the support of three global industry associations, the GSMA, the MMA, and the IAB, which have defined standards in the areas of metrics, formats, best practice, and cooperation.

The next step for operators need to agree on is whom they can work with to aggregate the entire mobile advertising industry for the benefit of the agency community. There is an obvious need for a new role in this market – a broker. At Ericsson we have stepped in and focused our attention on connecting relevant media buying and advertising applications in a managed service model, acting as the broker between advertising demand and supply.

Clearly, when advertisers can buy targeted advertising across networks, combined with a reliable optimization and reporting tool, they will increase the volume of spending.

O2 Ireland: The great network overhaul explained

by Rajya Sjunnesson Rao, page 46

► Telefónica O2 Ireland launched a radical transformation program in 2006 that swapped out its entire live network, including the packet and circuit core and 2500 2G and 3G base stations. Behind the decision to execute the dramatic swap-out, explains O2 Ireland’s Karim Benabdallah, was the recognition of the untapped opportunities presented by mobile broadband in a saturated mobile-voice market.

“We never believed the

384Kbps service had mass-market appeal for broadband services,” he says. “That’s why we kept a low profile on 3G at the time. Nevertheless, through these experiences, we shaped our vision and began to assess the potential higher speeds and mass-market devices.”

The decision was made somewhat easier by the fact that the network technology had moved up several levels. O2 Ireland could also quantify the financial benefits of this new technology in terms of lower costs and future revenue potential.

“Our network architecture is simpler to manage,” Benabdallah says. “It is greener to operate thanks to the reduction in electricity consumption and we have a leaner organization capable of sustainable leadership in the market.”

Despite having launched its mobile broadband as recently as mid-2007, O2 has quickly gained ground as a mobile broadband player.

As mobile broadband is most likely used in addition to a fixed broadband service (home or office), and as the pool of customers willing to tie themselves down to a long-term contract is bound to decrease over time, many telecom researchers predict that the next opportunity for mobile broadband in Western Europe lies in prepaid offerings.

Benabdallah says, “We are interested in finding ways to develop revenue-rich services rather than simply remaining a ‘pipe’ for the consumer. O2 sees considerable business potential in mobile broadband.”

“We are certain that customers will be consuming more and more data over the coming years. Usage will be driven by the availability of high-speed, ready-to-use broadband on the go, which in turn will facilitate internet browsing and video stream-

ing, for example. And as the quality of video streaming improves over time, so will usage,” Benabdallah says.

“Today,” he adds, “customers use over 1GB of data per month – next year this could be 3GB. And this increase will be fueled in great part by customer behavioral changes, illustrated by the increasing popularity of social networks such as Facebook, which make users want to be online nearly all the time wherever they are.”