

Quest for Margins:

Operational Cost Strategies for Mobile Operators in Europe

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1 Abstract

Mobile operators are facing challenging times and must contend with stagnating revenue growth resulting from reduced consumer spending. To improve profit margins in this environment, companies must find ways to simplify their operations and refocus scarce resources on activities that offer the best returns. Value realization, by driving EBITDA¹ improvements, offers immediate scope for refining cost structures. We analyzed various cost reduction measures across three key areas: network operating expenditure (OPEX), subscriber acquisition (SAC) and retention costs (SRC) and the costs of servicing customers. Reduction in network OPEX presents the most substantial opportunity for cost reduction. Operators can gain significant savings by increasing their ownership on backhaul networks, thereby saving on recurring payments to carriers for leased connectivity, as well as by sharing access and core networks. Subscriber acquisition costs for most operators are a major constituent of OPEX, with a large proportion contributed by handset subsidies. While competitive pressures are unlikely to allow operators to remove subsidies, operators can cut subsidy-related costs by encouraging longer contract durations and increasing the handset replacement cycle. There is also some scope to reduce the costs related to customer service by adopting paperless billing, and reducing call center usage by encouraging customer self-service.

We modeled the potential savings that could accrue from adoption of these measures, and our analysis shows that a typical mobile operator in Europe is positioned to improve EBITDA margins by up to four percentage points within four years by the judicious implementation of these measures. However, there exists significant challenges in doing so. Operators will need to evolve a roadmap for adoption of these initiatives based on their size, cost structures, and ability to manage complex cost reduction measures.

¹ Earnings Before Interest, Taxes, Depreciation and Amortization.

2 Introduction

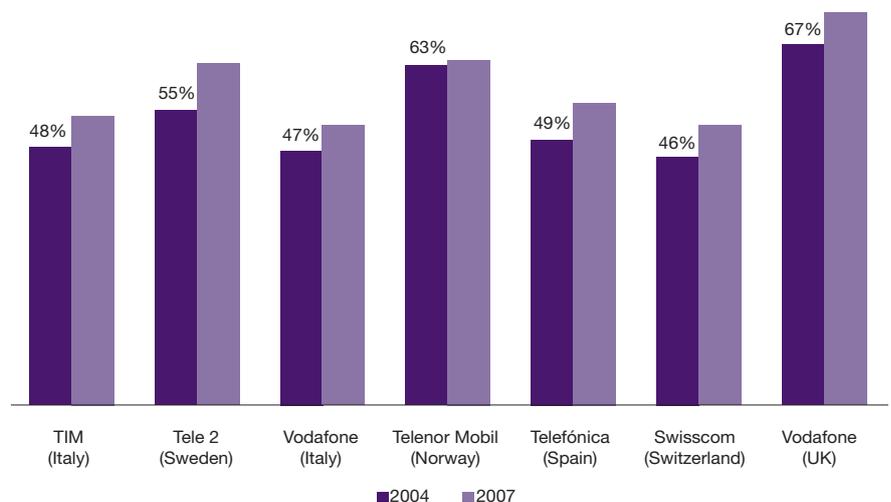
Telecom operators in Europe are facing some of their toughest times in recent months. After a period of high growth, mobile telcos are now faced with a credit crunch that is impacting their growth plans and an economic slowdown that is affecting consumer spending.

For some time, strong growth in mobile revenues had diverted the focus of operators from driving down costs. In a growing and competitive market, operators had focused on launching a wide portfolio of voice and data products, technology upgrades and ramping up their customer service functions, resulting in complex structures and systems.

In light of the current revenue challenge, mobile operators now have to shift their focus from growth strategies to simplifying their businesses and driving down costs to sustain healthy margins. Particularly since operating costs for most operators have been gradually rising over the past few years (see Figure 1), and it seems there is scope for targeted OPEX improvement measures.

In this paper, we identify a number of cost saving initiatives that can help operators realize operating margin improvement and calculate the estimated savings that a typical European mobile operator could derive through the implementation of such measures.

Figure 1: Operating Costs as % of Revenues for Mobile Operations, Selected European Operators, 2004-2007

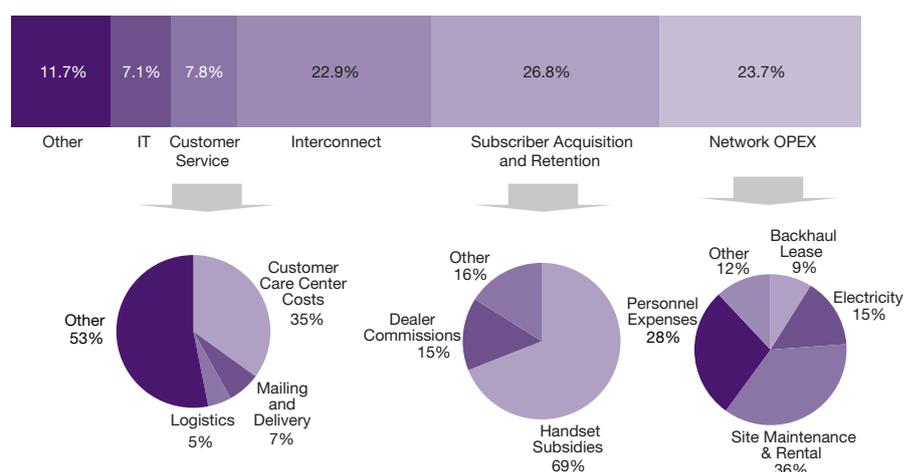


Source: Capgemini TME Lab Analysis, Merrill Lynch, *Global Wireless Matrix*, April 2008

3 Evaluation of Cost Cutting Strategies

We have focused our analysis around specific measures targeted at reducing OPEX in each of the three major focus segments of network operating costs, subscriber acquisition and retention costs, and expenditures related to customer service which together constitute about 60% of a typical mobile operator's OPEX. Each of these segments is made up of multiple underlying cost elements that can be targeted for cost savings (see Figure 2).

Figure 2: Typical OPEX Breakdown for a European Mobile Operator² (% of Total OPEX)



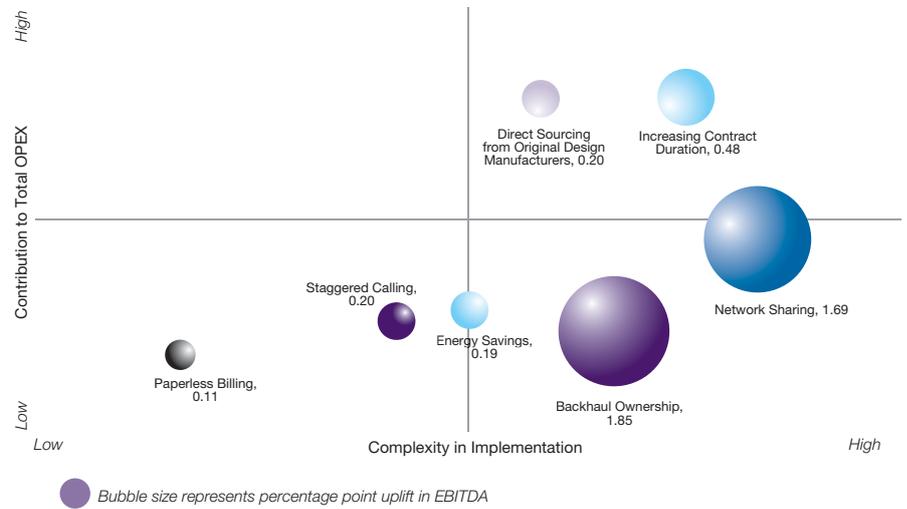
Source: Capgemini TME Lab Analysis based on operator annual reports and industry reports

Within these sub-areas, we have identified immediate, tactical and strategic measures that operators can be adopted to reduce costs (see Figure 3). We believe that through the implementation of these initiatives, the cumulative EBITDA improvement for a typical mobile operator in Europe can be up to 4.0 percentage points (in a bull case) and up to 2.8 percentage points (in a bear case) by year four of deployment.

In the ensuing subsections, we look at these three categories of costs and delve into details of the specific cost cutting measures within each area.

² Key assumptions of the business model: operator is from Western Europe with nationwide coverage; annual CAPEX (Capital Expenditure) spend of €500 million of which 30% is for transmission/backhaul; 60% backhaul capacity is assumed to be on microwave; Urban:Rural cell site split has been assumed to be 60:40; and all measures have been assumed to be mutually exclusive to one another.

Figure 3: Overview of Savings through Suggested Cost Savings Measures (Bull Case), Percentage Points, and End of Year 4 of Implementation

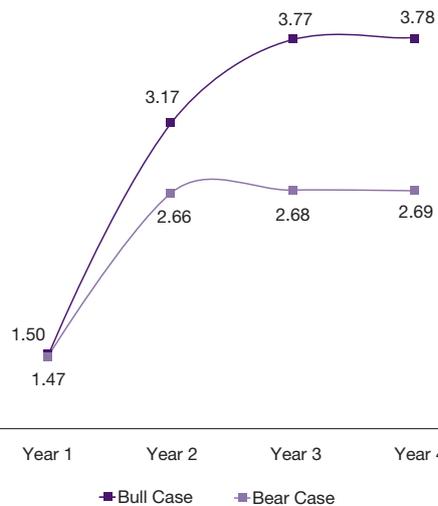


Source: Capgemini TME Lab Analysis

Network OPEX

For the mobile operator that we have modeled, network OPEX accounts for over 26% of OPEX. We have identified three key areas of network expenses that operators can focus on in their drive to cut costs. We estimate cost savings initiatives focused on network OPEX are likely to result in a 2.7-3.8 percentage points rise in EBITDA margins, based on the extent of measures that are deployed (see Figure 4). EBITDA uplift is loaded towards the end of the four year period due to the progressive deployment schedule that the measures entail.

Figure 4: Overall EBITDA Margin Improvement from Network Initiatives (Percentage Points), Year 4



Source: Capgemini TME Lab Analysis

Operators witnessing a strong upswing in network traffic will greatly benefit by taking ownership of their backhaul

Backhaul Ownership

Across Europe, most operators typically lease a significant amount of their backhaul requirements from third-party providers. It is estimated that while microwave backhaul, which usually comprises 65% of overall backhaul capacity, is self-owned, the remaining 35% of leased capacities contribute to over 65% of the transmission OPEX³. With rapid increases in backhaul capacity driven by network upgrades, most operators are caught in a situation where their increasing share of payouts to backhaul owners are driving down their current margins. This has prompted some operators to venture out into building their own transmission networks.

For instance, Vodafone Germany has embarked on an initiative to build its own backhaul and estimates that it could save up to €60 million⁴ annually in OPEX due to this shift. In Italy, the company has already migrated over 80% of its backhaul to their self-owned links. Measures such as owning backhaul also help operators in reducing the complexity of their business operations by removing the multiple transactional layers that interacting with third-party providers necessitates.

However, savings through backhaul ownership are closely tied to the traffic requirements of the operator. We have modeled our analysis on the assumption that base stations would require a backhaul capacity of up to 6 E1 lines⁵, as opposed to the current average of 2⁶. As such, we believe operators that are seeing a strong upswing in traffic or those that are already operating at high capacity utilization rates are likely to benefit most by taking ownership of their backhaul. Our analysis reveals a potential upside between 1-1.85 percentage points in EBITDA margins by implementing this measure. In bringing backhaul in-house, operators will need to follow a phased approach where they first identify the sites, prioritize them based on capacity utilization forecasts and finally select the appropriate technology between microwave and fiber.

Energy Savings

Operator energy costs are currently driven largely by the costs of maintaining mast sites, with cooling accounting for the bulk. Our analysis suggests that by deploying focused initiatives (see Figure 5) around improving cooling efficiencies and reducing energy consumption, operators stand to realize a tangible savings potential. These measures also ensure that operators make a meaningful contribution towards the environment and benefit from the corresponding goodwill generated.

Integrating these measures into our cost savings model, we believe that a savings of up to 4.5% can be obtained on the electricity OPEX costs of an operator. These savings translate into a direct uplift of EBITDA margins by 0.16-0.19 percentage points. We have modeled these savings as a one-time measure for implementation on existing sites.

Vodafone has implemented measures aimed at reducing energy usage and its associated costs in its operations in multiple locations. The company has, for example, deployed measures to improve cooling, modernize its network equipment and reduce diesel usage⁷.

³ Analysys Mason, *Outsourcing and network sharing: Key considerations to solve the backhaul challenge*.

⁴ Vodafone Annual Reports.

⁵ E1 is a protocol used in transmission lines that enables 32 channels of 64Kbps capacity, thereby offering a capacity of 2Mbps per line.

⁶ Assumption based on traffic increasing two to four fold in the next five years.

⁷ Vodafone website.

Figure 5: Measures for Reduction of Energy Consumption of Base Stations

	Cost Cutting Strategy	Energy Consumption Share (%)	Trigger for Savings	Cascaded Energy Savings (%)
Energy Consumption Reduction	Radio standby mode	62.5%	Ensuring transmit function is on standby during low traffic periods	~6.4%
	Passive cooling	25%	Environment-friendly cooling strategies like free ventilation and use of heat exchangers	~11.4%
	Use of advanced climate control		Dynamic temperature adjustment for the air conditioner	~6.5%
Cooling Efficiencies	Increasing DC system efficiency	11.3%	Ensuring use of rectifiers with higher efficiency (typically 94%)	~9.7%
	Remote radio units	1.2%	Moving radio unit closer to antenna to lower losses through the long feeder cable	~36.5%

Source: Capgemini TME Lab Analysis based on Vodafone estimates, Emerson Network Power, *Energy Logic for Telecom-Reducing Energy Use*, 2008

The benefits of network sharing are yet to be completely exploited by operators in Europe

Network Sharing

Network sharing offers a compelling case for cost savings among operators of various sizes. For larger operators, the key advantage is the opportunity to monetize assets that have already significantly depreciated, thereby offering them a steady revenue stream. For smaller operators, the case for network sharing appears even more attractive as these operators can convert significant parts of their CAPEX into OPEX and in the process also achieve a faster rollout. Operators in Europe have recently started to recognize the savings potential of network sharing and consequently, are entering into partnerships. For instance, Vodafone and Telefonica have recently agreed to share their networks across four countries in Europe⁸ in an effort to cut costs.

An analysis of the potential savings that can accrue through sharing of network elements, including the Radio Access Network, reveals that operators with moderate coverage can achieve EBITDA upsides of around 1.0 percentage point while operators with nationwide coverage can achieve an EBITDA improvement of over 1.4 percentage points (see Figure 6).

Subscriber Acquisition and Retention Costs

Subscriber acquisition and retention costs (SAC/SRC) form the single largest OPEX element for most mobile operators. Handset subsidies account for the bulk of these costs with a 69% share while dealer commissions account for almost 15%¹⁰. Evaluation of multiple measures for reducing SAC/SRC for an operator reveals that lengthening the duration of the contract with consumers and direct sourcing from Original Design Manufacturers (ODM) are likely to offer most savings. Our analysis indicates EBITDA uplift of up to 0.56-0.68 percentage points at the end of year four on implementing these measures (see Figure 7). EBITDA uplift appears cyclical due to the varying impact of the loyalty program and subscriber uptake patterns.

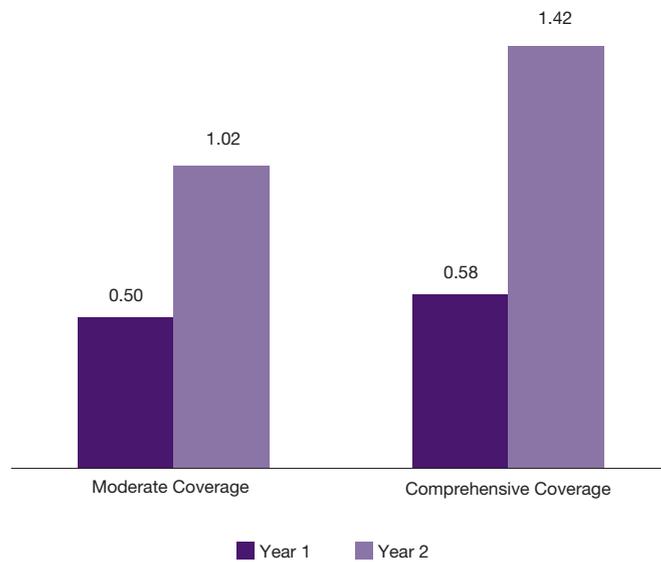
⁸ Reuters, *Vodafone and Telefónica to share Europe network sites*, March 2009.

⁹ Network OPEX and EBITDA improvement without considering backhaul sharing.

¹⁰ Various analyst reports.

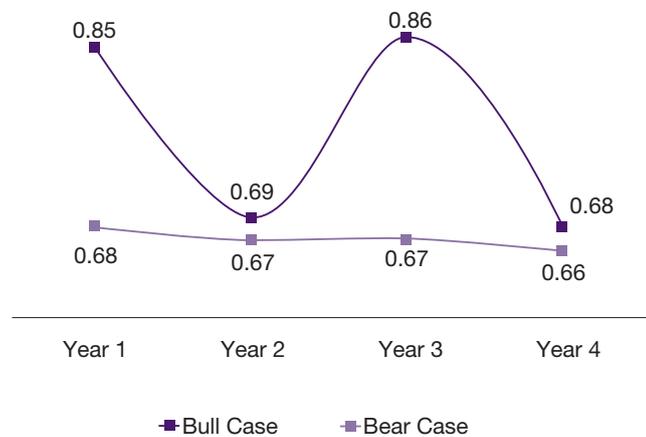
Operators can significantly reduce handset sourcing costs by directly procuring handsets from ODMs

Figure 6: EBITDA Improvement⁹ (Percentage Points) through Network Sharing, Year 1 – Year 2



Source: Capgemini TME Lab Analysis

Figure 7: EBITDA Improvement from SAC/SRC Initiatives (Percentage Points), Year 1 – Year 4, Bull & Bear Case



Source: Capgemini TME Lab Analysis

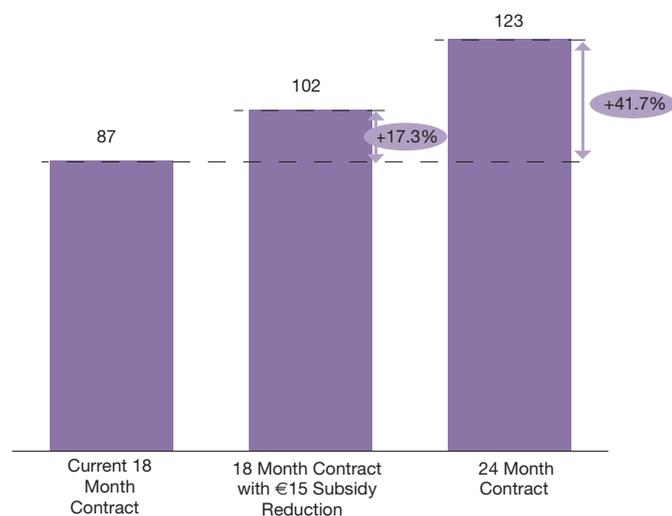
Increasing Contract Duration

Operators are increasingly realizing the significant impact that handset subsidies are having on their bottomline. However, operator attempts at reducing these subsidies have met with strong resistance from customers. The duration of contracts offered by operators is closely tied to the amount of handset subsidy that the operator incurs. Consequently operators are experimenting in varying the duration of the contract to reduce the impact of high subsidies for feature and smart phones. For instance, in Japan, NTT DoCoMo increased the length of its contracts from 30 to 36 months. This resulted in a drop in churn by almost 40% and SACs decreased from the earlier range of ¥30-40,000 to ¥20,000 while the

overall cost of handset procurement reduced by over ¥100 billion¹¹. The company also passed on some of the benefits realized by its cost savings back to the consumer in the form of lowered monthly rentals, thereby limiting the downside of consumer backlash.

In the European context, we have modeled a scenario where the current average of 18 month contracts is extended to 24 months. Our analysis reveals that an increase of over 40% in the customer lifetime value can be achieved by extending the duration of the contract (see Figure 8). However, consumers are likely to resist any extension of contract durations. In order to drive uptake of extended contracts, operators will need to create loyalty benefit plans that encourage customer stickiness. Like in the case of NTT DoCoMo in Japan, these plans will need to reward consumers for their loyalty to an operator using various incentives.

Figure 8: Customer Value¹² during Contract Period (€), Current Scenario vs. Subsidy Reduction & Contract Period Extension



Source: Capgemini TME Lab Analysis

Our analysis shows that by extending contracts and implementing progressive loyalty benefits, operators can realize EBITDA uplift between 0.44-0.48 percentage points at end of the fourth year. Examples of operators that are experimenting with 24 month contracts are beginning to emerge. For instance, in the UK, Orange has begun a conscious push in its stores towards encouraging customers to sign up for 24 month contracts, highlighting the reduced monthly bills¹³.

However, operators will likely face significant challenges in upgrading consumers to 24 month contracts. Challenges arise around managing revenues, customer expectations, and in the distribution of subsidies. Nevertheless, the challenges are not insurmountable and the measure, in itself, offers scope for operators to embark on a new low-cost subsidy path.

Direct Sourcing of Handsets

Operators typically source handsets from major Original Equipment Manufacturers (OEM) such as Nokia, Motorola, among others. The cost of handset procurement significantly impacts the SACs that operators have to incur. Our analysis shows

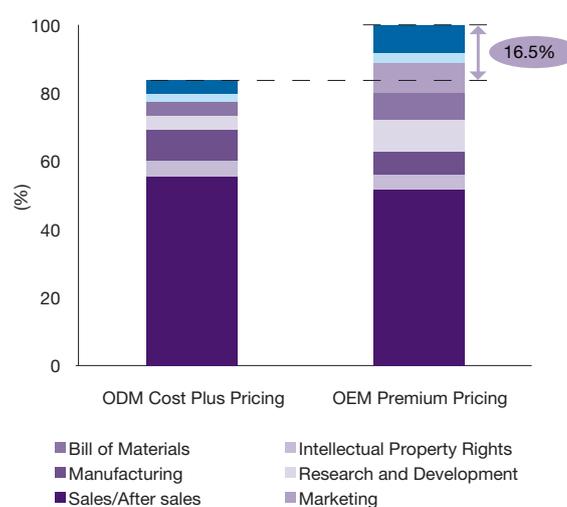
¹¹ NTT DoCoMo Annual Report 2008; Various analyst reports.

¹² Customer value is defined as the difference between the ARPU generated over the contract period of a subscriber minus the sum of the average OPEX/subscriber incurred over the contract and cash costs incurred in servicing a subscriber.

¹³ Mobile Today, *Orange pushes 24 month contracts in store to reduce churn*, April 2009.

that large operators that have significant purchasing power can reduce costs involved in handset sourcing by procuring handsets directly from ODMs. ODMs have in-house design and manufacturing facilities and offer a significantly faster turnaround time, in comparison to traditional OEMs. Moreover, the lack of a strong brand for the ODMs, and relative scale of the operator gives the latter significant bargaining power in negotiating procurement of handsets. Indeed, operators such as Vodafone have experienced a price differential of over 16% between an OEM and an ODM for sourcing comparable budget handsets (see Figure 9).

Figure 9: Procurement Cost Comparison (%), ODMs vs OEMs



Source: Vodafone, Vodafone's ULCH Strategy for Emerging Markets, September 2007

Sourcing handsets from ODMs has also been successfully deployed by Indian operator Reliance Communications. Long-term contracts coupled with low-cost handset procurement ensured stable margins, despite a rise in low value customers. Direct sourcing of handsets can additionally enable operators to reduce procurement timelines and simplify sourcing processes.

We have modeled a progressive rise in sourcing low cost handsets from ODMs, with the upper limit capped at 35% of budget handsets at end of year four. Our analysis reveals a potential upside of 0.12-0.2 percentage points to EBITDA margins at end of year four. Sourcing higher volumes and feature rich handsets from ODMs are likely to result in significantly higher savings for operators. However, a key challenge for operators will be to ensure sustained after sales support from the ODM.

Customer Service Costs

Customer service costs are largely dominated by the cost of handling customer requests and complaints. Our analysis of cost cutting measures focused on customer service reveals three initiatives that have not been implemented by operators in Europe extensively and have potential for margin uplift: paperless billing, Unstructured Supplementary Service Data (USSD)-based self-care and adoption of a slot approach to customer care.

Operators need to assess their competitive positioning, existing cost bases and risk appetite before finalizing their cost reduction roadmap

Paperless Billing

Paperless billing presents an effective low cost option for operators and also provides enhanced functionality to customers. It has the potential to significantly alter the billing landscape by removing the complexity and costs involved in paper billing. However, uptake has been limited. For instance, at the end of 2007, only around one million subscribers out of Telecom Italia's mobile subscriber base of over 36 million were estimated to be using e-bills¹⁴. Research on the cost differential between paper and e-bills shows a differential of up to 59%¹⁵. Building these savings into our analysis shows scope for EBITDA margin uplift of 0.1 percentage points for operators at the end of year four, assuming a rise of 3% in number of subscribers opting for an e-bill. Operators could strive to increase uptake through focused promotions and providing enhanced functionality in e-bills to drive up savings.

Hutchison ("3") Austria initiated a drive to migrate its customers to e-bills in mid 2007. At that point in time, 3 was sending out over 480,000 paper invoices per month, each having between 5 to 100 pages. Having seen limited success with opt-in strategies, 3 opted for aggressive opt-out measures resulting in strong success. They achieved a conversion rate of over 85% as opposed to their conversion target of 65%¹⁶.

Unstructured Supplementary Service Data (USSD) based Self-Care

Encouraging consumer self-care has been a strategy that has been adopted by multiple operators successfully across emerging markets. USSD is a real-time messaging service that functions on all GSM (Global System for Mobile communications) phones and has seen multiple deployments across emerging markets. Operators could build mobile portals that could be accessed through USSD, and benefit from the lower costs and faster query resolution that the service offers. By offloading some of the most common customer service queries such as those around bill payments, balance and validity checks, and status of service requests, operators can reduce the burden on their contact centers, and consequently, the cost involved in servicing each consumer. However, lack of regulation and limited interoperability among operators for consumers who are roaming have resulted in the service seeing limited traction in Europe. Operators will need to collaborate among themselves to ensure uptake of USSD services.

Bharti, the leading operator in India offers a good case study on the benefits of implementing USSD-driven services. Since the launch of its USSD service, query volumes through the channel grew by 66% in the first five months, while query response time decreased significantly by 77% to 13 seconds. The impact of these measures has been cost savings to the tune of US\$7 million annually for the company¹⁷, with savings rising along with increased usage of the service.

A Time Slot Approach to Customer Calls

Customer services costs are driven by the number of resources that are required to be deployed during peak hours. Consequently, it is worthwhile to look at a solution that tackles the challenge of resource deployment being driven by peak hour requirements. While Mobile Virtual Network Operators (MVNOs) such as Tesco Mobile in the UK have succeeded in implementing systems where customers are charged for calls to contact centers¹⁸, implementing a similar system for operators is likely to be fraught with a significant risk of customer backlash.

Bearing this in mind, our measure envisages a scenario where customers are assigned specific time slots during which they can contact customer service, with

¹⁴ Telecom Italia Newsletter, August 2008.

¹⁵ SAP, *The End of Paper Invoices*, September 2004.

¹⁶ 3 Austria Presentation at Billing & Information Management Systems Conference, June 2008.

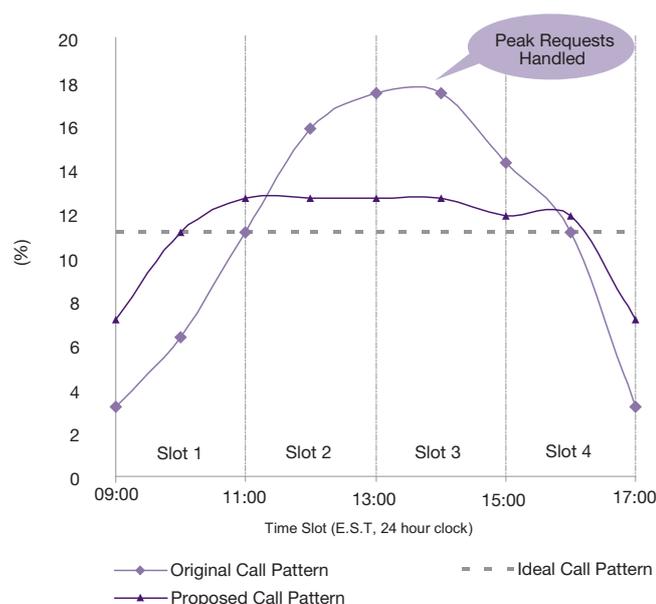
¹⁷ Bharti Telesoft, *Right Channeling Customer Care*, 2008.

¹⁸ Tesco Mobile Website.

In aggregation, the different cost rationalization measures can generate an EBITDA uplift of up to 4.0% points

calls outside the time slot being treated as regular charged calls. However, such a measure will have to be tempered by a minimum Quality of Service (QoS) guarantee, and offset by incentives (such as free minutes) for a drop in QoS. Effectively, this measure dissuades customers from calling outside the allocated slot, and in doing so, offers some scope for operators to rationalize their peak resource requirement (see Figure 10).

Figure 10: Effect of Allocating Time Slots For Customer Calls, % of Total Calls Handled During Business Hours



Source: Capgemini TME Lab Analysis; based on industry inputs

By utilizing the time slot approach to customer calls, we believe that operators could achieve a reduction in the number of resources deployed by over 37%. However, the implementation of this measure is likely to be challenging, given the complex analytics¹⁹ that drive the slot designs and managing the apprehension of customers. Nevertheless, we believe that sound implementation of this measure will result in EBITDA margin uplift by 0.2 percentage points by end of year four. Going further down this road, implementing multiple tiers of customer service, and accordingly reworking the pricing model for various QoS levels, will help operators gain further savings.

As our analysis reveals, there are a number of approaches that operators can adopt and improve their profit margins. However, there is no 'one-size-fits-all' strategy and operators will need to assess their competitive positioning, existing cost bases and appetite for risk before finalizing on a suitable roadmap for implementation of cost-reduction measures.

Conclusion

In conclusion, telcos will need to concentrate on gaining tactical benefits from cost reduction initiatives in the near-term and create sustainable cost advantages, with an emphasis on operating margins, before they can look at creating long term value through growth strategies. Operators will have to identify complexities in their systems, processes and cost structures and develop a roadmap to systematically mitigate them. Mobile operators will also need to identify activities that offer the maximum value realization and redirect financial and operational resources on these activities to create lean and efficient businesses.

¹⁹ Analytics based on historical calls will need to be used to identify peak usage time periods as well as accordingly slot customers based on their customer care usage patterns.

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