

Mobile Service Portfolio to Attract SMEs

A Study of the Swiss SME Market

Wallisellen, 26th of April 2005

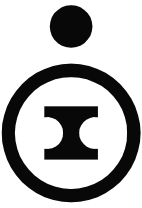
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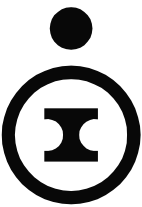
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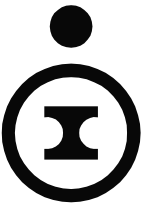


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1. Motivation and Scope of the Document

1.1. Motivation

Intercai has been motivated to undertake this study because of observations regarding the Swiss Mobile Market, which will be explained in the following paragraphs.

Mobile Network Operators in Switzerland in the past years have neglected Small and Medium Enterprises (SME) and have concentrated their effort on the consumer market and on large firms. Mobile offers for SMEs are not really designed to fulfil all their telecommunication needs, and therefore SMEs are not motivated to increase their mobile usage.

SMEs, however, represent the biggest portion of the Swiss business market in terms of revenue potential. Additionally, it has to be noted that, if the consumer market will stagnate in the next years, the business one is forecasted to steadily grow.

The fact that the SME market has not been fully exploited yet, and the fact that it represents a big potential, have been the primary motivators for this study.

1.2. Scope

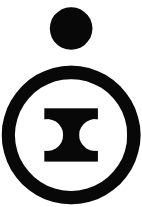
The scope of this document is to identify possible drivers and recommend concrete offers that would motivate Small and Medium Enterprises (SME) to change their communication habits. This document is meant for Mobile Network Operators (MNO) and Service Providers. Therefore it will be focused on how to increase mobile usage, and on how to move from fix to mobile usage.

2. Summary

The present mobile market for the consumer segment is quite mature. In fact there are many mobile products targeted to this segment and no further growth in term of revenue and customer numbers is foreseen. On the other hand, the business market is expected to further grow in the following years. Although the SME segment is an important growing market (expecting yearly revenues of ca. 2-3 billion CHF in 2007, (Source: Mobile Market Switzerland 2004, Intercai (Schweiz) AG 2004)), few offers are really tailored and interesting to SMEs. Additionally, although the SME market is notoriously difficult to acquire and maintain, it offers several advantages: SMEs have limited purchasing power; they adopt standard solutions; they are more service oriented; they are sometimes more innovative than larger firms; and they are more prone to perform word-of-mouth advertising. For these reasons, this document tries to identify possible mobile products that would motivate SMEs to change their communication habits.

Five different SME profiles will be identified in this document: the "Stationary Systems" (which mainly use fix phones and rarely mobile phones), the "Basic Business – Internal Calls" (which mainly use the mobile phone to call mobile numbers of the same company), "Basic Business – External Calls" (which use the mobile phone to call in and outside the office), the "Always Available – International Usage" (which additionally to the previous profile use the mobile phone extensively abroad) and the "Always Available – Data Usage" (which use the mobile phone in Switzerland for both voice and data transmissions).

Although SMEs show different profiles in respect to the service usage rate, their needs and the needs of their employees are quite similar. The firm requires simplicity, flexibility and above all



low price. The user requires simplicity, unlimited service and a complete integration of the different devices (handy-laptop) and networks (mobile-fix-PWLAN). This paper identifies some drivers that would motivate an SME to change its communication habits and some barriers that prevent it from doing that. Drivers for change are cost control, reduction of complexity and increase of flexibility. Barriers are security and quality concerns, image and practicality problems and cost issues.

Mobile Network Operators (MNOs) are facing increased challenges: the market is stagnating and competition has become more intense because new firms, which were not traditional operators, have entered the telecom market (e.g. power companies, cable-TV firms, etc). Additionally, new technologies, such as VoIP are putting additional pressure on the telecom market. MNOs must, however, increase the customer basis and increase the ARPU; the SME service portfolio suggested in this paper should help MNOs to reach these goals.

By analysing the needs of the various SME segments, this paper recommends then a specific product with a specific price scheme.

This document argues that MNOs should create offers which motivate SMEs to substitute their fix voice infrastructure rather than offers that integrate fix with mobile infrastructure. By doing that, the mobile service portfolio should offer more advantages and comfort than a fix infrastructure.

A correct charging scheme is paramount in order to motivate SMEs to switch from the fix to the mobile network, or to increase the usage of mobile services. This document argues that for light business users a classical usage-dependent charging scheme is appropriate, but an innovative flat rate should be introduced for normal and heavy users.

A flat rate should offer unlimited service whenever possible. Otherwise, it is recommended to offer an adaptive shared flat rate. A shared flat rate is a flat rate which is distributed among all members of the customer's group (in this case the SME's employees). An adaptive rate adapts itself automatically to the best rate and therefore guarantees the best price.

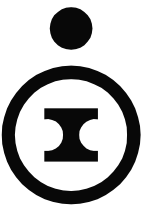
For simplicity reasons this paper recommends offering only one subscription type. This basic subscription would allow unlimited calls to the fix network and unlimited calls to the user group. Following features would be included in this basic subscription: possibility to block specific services; possibility to split bills between employees and the firm; possibility to connect ongoing calls to other phones; and unlimited mailbox calls.

Only following options would be available: office zone option (reduction of the subscription fee but limitation to perform free calls in the office zone), Swiss mobile calls option (adaptive shared flat rate for calls to Swiss mobile phones), international calls option (adaptive shared flat rate for roaming usage), data calls option (adaptive shared flat rate for data services independent from the network), multimedia option (unlimited usage of multimedia services), mobile office synchronisation option (synchronisation of the mobile/smart phone data with laptop/PC) and fix number option (possibility to be reached on the mobile phone via a fix number; this is done mainly for image reasons).

Examples of possible prices for the basic subscription and the options are presented.

Intercai recommends to promptly evaluate the possibility to introduce such an offer, because it is convinced that this would be beneficial to SMEs, and would increase the customer base of MNOs and increase the ARPU of the SME segment.

This document concludes with a concrete example of an SME, which would be motivated by such an offer to change its telecommunications habits and perform a Fix to Mobile Substitution (FMS).



3. The Telecom Market

3.1. Market Segmentation

The mobile market in Switzerland can be segmented according to two parameters. The first parameter segments the market according to the **customer type** (consumer or professional) and **size** (SOHO, SME or large firms). The second parameter segments the market according to the **customer's behaviour**. The chosen classification for this document is the one defined by the marketing intelligence report "Mobile Market Switzerland 2004" [1], which divides the market into following segments: Always Available (AA) and Basic Business (BB) for the business market, Fun&Free (FF), Communicative Consumers (CC), Midrange Midis (MM), Normal Narrowbanders (NN) and Emergency Only (EO) for the consumer market. The AA customer is a frequent user at the top segment of the market; he travels often within the country and abroad and needs always to be connected; integration of PC and mobile is natural for this user. The BB customer is also a frequent user; he travels often, mainly within the country and the main usage is for calls in and outside the office. A more detailed description of these business customers and the consumer ones can be found in "Mobile Market Switzerland 2004" [1]. The above-mentioned segmentation is depicted in the following figure.

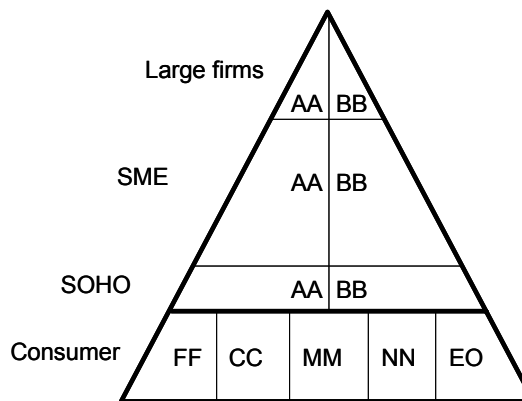
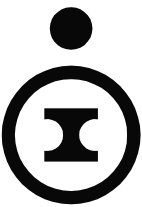


Figure 1 Market segmentation

3.2. Market Situation and Trends

3.2.1. Present Offers

At the present time offers for the consumer market are fairly exhaustive and mature, with a plethora of products to satisfy almost every requirement. Large companies are targeted individually, with tailored offers to satisfy their needs. Because of their purchasing power and financial means, large companies are able to receive the desired services with the appropriate costs.



SMEs are partially neglected in Switzerland, with only limited offers tailored to them. Additionally, these offers seem to be adaptations of consumer offers more than specific offers to boost the usage of mobile services and satisfy the needs of SMEs.

3.2.2. Market Trend

According to [1, p.15-18] the consumer market has reached a saturation level and the forecast for the next two years foresees a stabilization or even a slight reduction in the number of customers and revenue.

According to the same marketing intelligence source [1, p. 15-18], the business market is expected to grow, in both customer number and revenue.

The above-mentioned forecast is depicted in the following figure.

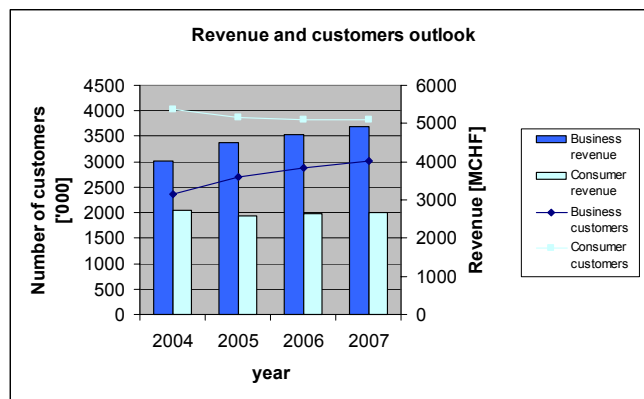


Figure 2 Mobile market outlook

3.2.3. Behavioural Trend

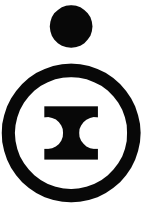
The “Mobile Market Switzerland 2004” marketing intelligence report [1, p.13] foresees that in Switzerland in the following years there will be an increase in bandwidth and speed demand. Additionally, wireless data connectivity and mobility will be requested more, especially by business users. This trend is in fact confirmed and supported by the success of smart phones, such as Blackberry and SPV, and the popularity of WLAN laptops. Business users will also expect a better integration of their pocket phone into their companies’ data and voice (PBX) services.

3.3. Conclusion

As shown before, the business market is foreseen to steadily grow in the next years, with their customers becoming more demanding.

Business offers for large firms are already tailored to their needs. However, offers for SMEs are fairly limited and in any case not enough to satisfy their needs; there is therefore a clear room for improvement in this segment.

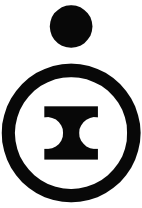
Operators in the past have preferred to target large companies because of their prestige and reference, because of their huge volume of acquired telecom services, and because of the relatively easy acquisition and maintenance effort due to limited interfaces. However, the purchasing power of large firms and the fierce competition with



other MNOs, which have the same interests in acquiring such companies, have eroded the prices and therefore also the profit margins. Large firms are therefore not as much interesting as they used to be.

On the other hand SMEs have been relatively neglected because they are notoriously difficult and expensive to acquire and maintain. However, SMEs reserve also nice surprises: because of their limited purchasing power they are willing or obliged to pay a higher price; they use standard and not customized solutions; they are more service oriented than large firms; in some cases they are more innovative; they are more prone to perform word-of-mouth advertising with other SMEs when satisfied; moreover they represent an important and growing part of the business market. Because they are still underserved and partially neglected, they therefore represent a lucrative potential market.

For the above-mentioned reasons, this paper will therefore focus on the SME market. We will firstly define some SME typical profiles, and then identify their needs and drivers that would motivate SMEs to change their telecommunications habits, and at the end suggest possible SME offers that would reach this goal.



4. The SMEs

4.1. Definition and Size

The Swiss Federal Statistical Office (Bundesamt für Statistik) defines SME as companies with less than 249 employees. This comprises Micro companies (1-9 employees), Small companies (10-49 employees) and Medium companies (50-249 employees). 99.7% of the Swiss firms are SMEs and they employ 66.8% of the Swiss workforce. Excluding Micro companies, 11.7% of the Swiss firms are SMEs and they employ 40.3% of the workforce.

4.2. Market Potential

Assuming that SMEs are generating 66.8% (based on the workforce percentage - including Micro firms) respectively 40.3% (based on the workforce percentage - excluding Micro firms) of the business revenues (as defined in section 3.2.2), it is clear that they represent an important part of the business market which cannot be neglected. In fact the SME revenue outlook for the year 2007, as depicted in the following figure, varies between two and three billion CHF.

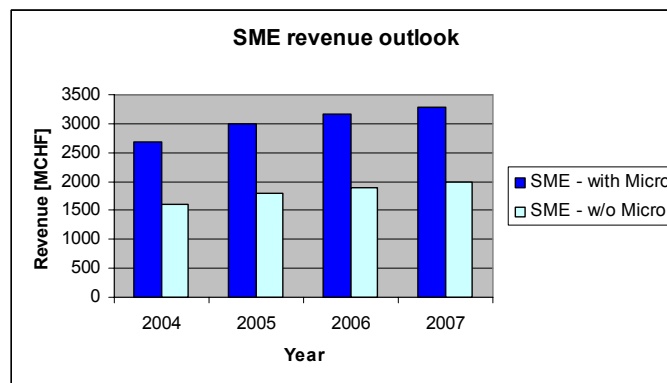


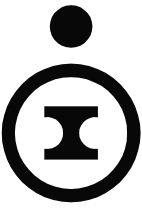
Figure 3 SME revenue outlook

4.3. Typical Profiles of SMEs

In order to better analyse the communication usage of SMEs, it is necessary to segment the SME market according to the different requested services and their usage rate. This segmentation, which is introduced in the following sections, is based on the one introduced in section 3.1, but, in order to be more complete, additional subgroups have been added, e.g. the Stationary System.

4.3.1. Stationary Systems (SS)

Stationary System is the segmentation for SMEs which mainly use their fix phone infrastructure or very rarely the few available mobile phones. The main reason to use the fix network is its cost. Additionally, there could be reasons of convenience (it is not necessary to charge batteries), quality (better quality especially to perform conference calls) and health (no harmful radiations).



The employees of companies in this segment are almost always in their office locations.

4.3.2. Basic Business – Internal Calls (BB-IC)

As mentioned in section 3.1, the Basic Business user is a frequent user and he travels often, mainly within the country. The BB-IC user uses his mobile phone mainly to place a call to the office to get in touch with work colleagues, but rarely with customers or suppliers.

A fix phone infrastructure is available in the office because of its cheapness and convenience.

Business users in the BB-IC segment show different usage patterns which are defined as following: light business user, normal business user, heavy business user and fanatic business user. An estimation of these patterns is depicted in the following figure. The normal business user represents the average user for this segment; in fact, his generated revenue corresponds approximately to the average ARPU (Average Revenue Per User) of the BB segment.

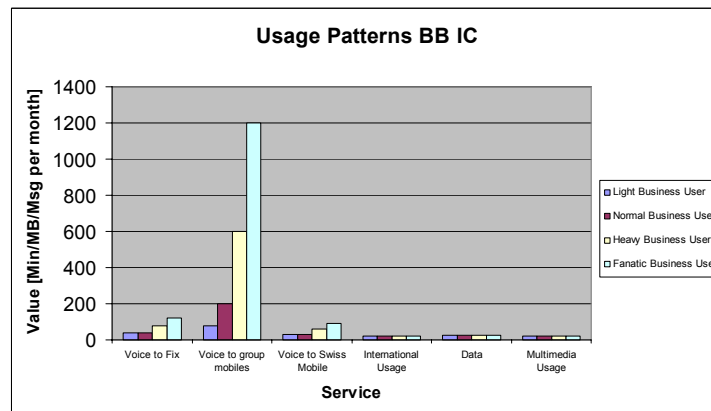


Figure 4 Usage patterns for the BB-IC segment

4.3.3. Basic Business – External Calls (BB-EC)

Opposite to the BB-IC user, the BB-EC user uses his mobile phone for calls in and outside the office to get in touch with work colleagues, customers and suppliers. A fix phone infrastructure is available in the office because of its cheapness and convenience.

Also, business users in the BB-EC segment show different usage patterns (as defined in the previous segment). Also in this case, the generated revenue of the normal user corresponds approximately to the average ARPU of the BB segment. The different usage pattern estimations are shown in the following picture.

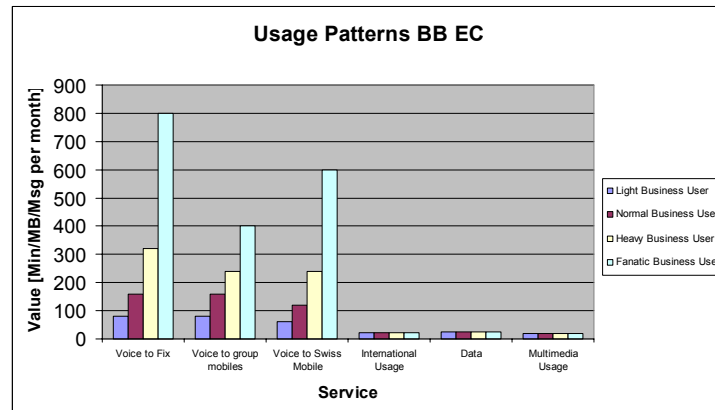
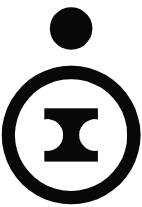


Figure 5 Usage patterns for the BB-EC segment

4.3.4. Always Available – International Usage (AA-I)

As already seen in section 3.1, the AA customer is a frequent user at the top segment of the market; he travels often within the country and abroad and needs always to be connected; integration of PC and mobile is natural for this user. The peculiarity of the AA-I user is that he heavily uses the mobile services abroad. A fix phone infrastructure is available in the office because of its cheapness and convenience.

Similarly to the previous segment, the AA-I users too show different usage patterns; the estimation is depicted in the following picture. Also in this case, the generated revenue of the normal user corresponds approximately to the average ARPU of the AA segment.

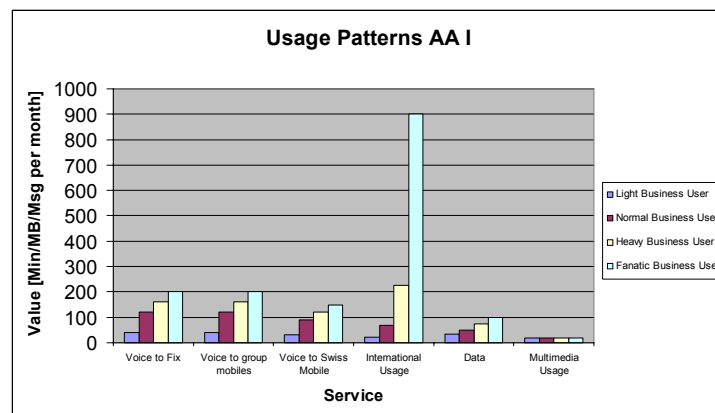
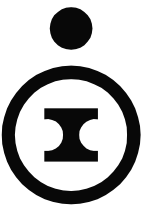


Figure 6 Usage patterns for the AA-I segment

4.3.5. Always Available – Data Usage (AA-D)

Opposite to the AA-I user, the AA-D is a heavy user of data services (GPRS, WLAN). A fix phone infrastructure is available in the office because of its cheapness and convenience.



Similarly to the previous segmentation, also this group shows different kinds of usage behaviour, the estimations of which are depicted in the following picture. The generated revenue of the normal user corresponds approximately to the average ARPU of the AA segment.

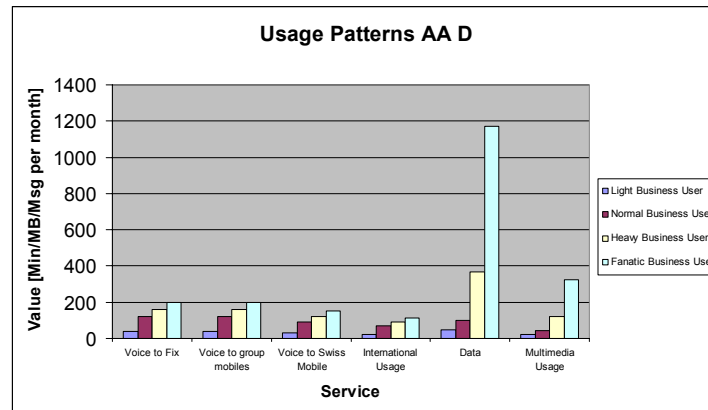


Figure 7 Usage patterns of AA-D segment

4.4. Needs of SMEs

SMEs have different usage profiles with partially different telecommunication needs. However, the majority of their needs coincide; these common needs can be divided between the needs of the users and the ones of the firm itself. In fact users require mainly usability and availability of the services, whereas firms require cheap and transparent costs of their subscriptions and infrastructures.

4.4.1. Specific Needs of the SME Profiles

Hereafter the specific needs of the SME profiles are shown. Common needs are discussed in the next section.

Stationary Systems (SS)

This profile requires first of all cheap calls towards fix, mobile and international networks. Free calls among members of the company are also requested, as this function is supported by the PBX.

Firms in this profile (but also in others) require other functionalities as well that are presently supported by the PBX, such as the possibility to connect ongoing calls to other users or forward calls to mailboxes.

Basic Business – Internal Calls (BB-IC)

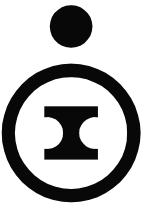
Besides the needs of the previous profile group, firms in this segment require to perform cheap calls, possibly unlimited, among the company's employees overall in Switzerland. Keeping a cost control over internal calls is therefore fundamental.

Basic Business – External Calls (BB-EC)

Additionally to the needs of the previous segments, this profile also requires to have clear cost controls over calls performed to the fix and mobile Swiss networks.

Always Available – International Usage (AA-I)

Similarly to the previous groups, this profile requires to have the same cost control over services performed and received abroad. Users in this profile need also to re-



ceive the same services with the same quality independent of the country they are visiting and of the network they are using.

Always Available – Data Usage (AA-D)

Users in this segment are more demanding compared to the previous profiles. Not only they require clear cost control and the possibility to use data services as much as possible, but they have supplementary needs.

AA-D users need simplicity of the services they are using. This means that they want simple configuration procedures (e.g. to configure the laptop for GPRS services) and they want to use the services independent of the network (GPRS, EDGE, UMTS, WLAN): they don't want the trouble to check which network is available, how the charging is performed and therefore which network they should use.

Moreover, users in this segment require a full integration of mobile and PC/laptop data. They don't want to duplicate data or miss important pieces of information when away from the office (e.g. e-mails, contact information, intranet information)

For this segment it is also fundamental to be assured about the absolute security of data transfer services because of confidentiality reasons.

4.4.2. Common Needs of the SME Profiles

As already discussed, common needs of SMEs can be divided between the needs of the users and the needs of the firm itself, as shown in the next paragraphs.

Users' Needs

The business user is in general quite demanding in terms of availability, quality and simplicity of service, as following examples show.

The business user does not want to be or feel limited in performing his business due to cost, quality or availability issues, but he wants to be free to use his mobile services whenever and as much as needed. For instance, he doesn't want to feel the pressure of the costs. He also doesn't want to be limited due to a slow service (e.g. GPRS) or unavailable service (e.g. PWLAN on trains).

The business user on the other hand requires simplicity in the services. As an example, he doesn't want to spend time configuring his mobile phone or laptop to use special services (e.g. MMS or GPRS for the laptop), otherwise he probably will renounce them. Additionally, the professional user is interested in receiving a specific service independent from the technology which is used; for example, if he wants to transfer data, he is not really interested in knowing whether the used technology is GPRS, HSCSD, UMTS or WLAN.

As previously mentioned the user also expects a better integration of his pocket phone with his computer and his company's data and voice services. Because of the growing usage of data services, he also needs to be reassured regarding the security and confidentiality of these services.

It is also worth to mention that the business user expects a high standard of quality of all the services he uses. High quality is expected from the network (coverage, speech quality, transfer data rate, etc.) and from the pre-sale and after-sale services. A business user expects a personal and special treatment compared to a consumer one.

Following picture shows the telecom interfaces of an SME user.

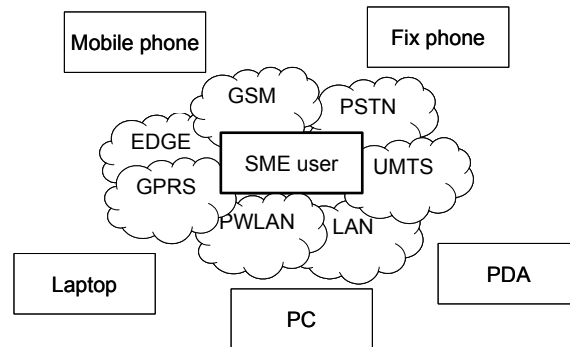
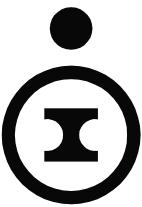


Figure 8 Telecom interfaces of an SME user

Firm's Needs

The perspective of SMEs regarding the services differs from the one of the users. In fact firms require low price, flexibility but also simplicity, as shown hereafter.

SMEs want primarily to control their costs and to have therefore cheap services. Small firms want to be certain that they have the lowest possible fee and that they are therefore not wasting money because of a wrong subscription. Moreover, in order to control costs, SMEs want to have the possibility to block specific services which are not needed for business purposes (e.g. SMS, MMS, video streaming, 0900-numbers) and charge employees for private calls (e.g. outside business hours). Additionally, companies would be glad to reduce their interfaces (see Figure 9) if this would decrease their total telecommunication costs.

The mobility and flexibility of SMEs has increased and firms are therefore requesting more flexible services. This is due for instance to the fact that SMEs tend to change office locations more often than in the past, employees tend to work from home, more and more customers' visits are performed in Switzerland and abroad, etc. Mobility has increased in the recent years and will steadily grow in the next ones, especially for data services. This is due to the widespread usage of WLAN laptops, smart phones and wireless standards such as Bluetooth which allow an easy and fast synchronisation of the mobile with the laptop.

Small firms expect also simplicity of their services. This goes behind the simplicity of use, and considers also the simplicity of the subscription administration and control of the costs. Moreover, as already mentioned, SMEs would be glad to reduce their interfaces and therefore increase the flexibility and decrease the complexity.

Similarly to their users, also for SMEs security is an important concern. It is absolutely necessary that users be able to create secure connections and therefore that confidentiality when transferring files be guaranteed. Additionally, SMEs request to shield their data and infrastructure from harmful attacks, such as the ones caused by viruses or hackers.

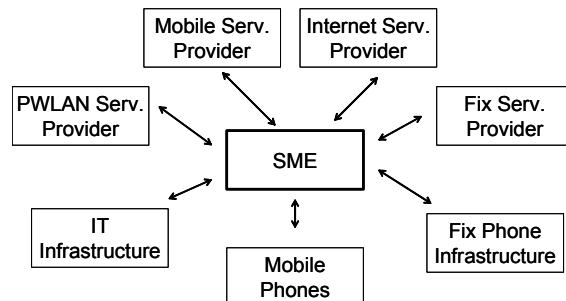
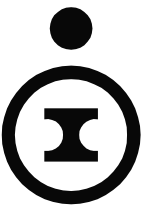


Figure 9 Telecom interfaces of an SME



4.5. Drivers for Change

An SME is motivated to change its present communication systems whenever the situation regarding its communication needs and the ones of its users, as seen in the previous sections, improves.

There are some needs which can still largely be improved, and these would therefore motivate SMEs to change their telecommunications habits, e.g. to change from a fix to a mobile solution or to increase the mobile usage. These needs have been defined as drivers for change and are listed hereafter:

- **Reduction of total cost** is paramount. An SME desires to have fair prices and clear cost controls over all telecom systems. According to Nokia [10] tariffs, subscriptions and simple pricing and invoicing are also key drivers for a Fixed to Mobile Substitution (FMS).
- **Reduction of complexity** for users and SMEs regarding technologies, infrastructures, interfaces, services and price plans. This means either that some systems are reduced or that there is a better integration of the different systems. This is required by both, SMEs and their users.
- **Increase in flexibility** and freedom in using services. This means no limitation in using services due to costs, availability or technical limitations. In fact the need for mobility, availability and flexibility are key drivers not only for a general change in telecom habits, but also for a specific FMS, as mentioned in [7] and [11].

However, there are other needs which cannot necessarily be improved, but that need to be further guaranteed. A possible change in telecom behaviour has therefore not to be detrimental to already acquired privileges and habits. These needs have been defined as barriers for change, and are listed hereafter:

- **Security.** For some SMEs security issues play a fundamental role. It is therefore absolutely necessary that all the used services (e.g. connecting to the VPN over a WLAN) guarantee a total security and confidentiality. In fact security concerns are important barriers which prevent SMEs to adopt a more extensive use of data services.
- **Quality.** Users do not want to experience a reduction in quality. This is true for all the services they are presently using, especially if they should be convinced to change from a fix to a mere mobile infrastructure.
- **Image.** Image has also an important role for an SME. For instance SMEs see the necessity to have a fix number for reception and fax (firms with only mobile numbers are usually not considered as being very professional).
- **Practicality.** E.g. when replacing a fix infrastructure with a mobile one, the users do not want to lose the present practicality, for instance the possibility to perform internal calls or to connect and forward ongoing calls (functions presently done by the PBX).
- **Costs.** Although cost is a driver for change, at the present time it is also a barrier for change. In fact if a lower price would motivate an SME to change its telecom habits, the present prices prevent it from doing that.

A study performed by Finpro [11] has also identified that security, cost and bandwidth/speed aspects have deterred companies from performing an FMS.

The above-mentioned drivers and the barriers for change are graphically represented in the following picture:

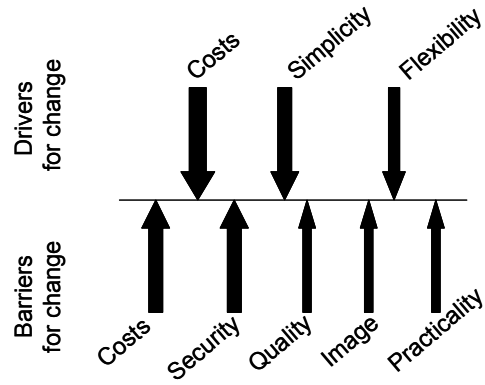
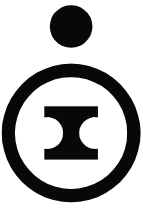
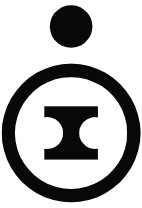


Figure 10 Drivers and barriers for change

Following wishful thinking, an SME would desire to improve every single need. However, every firm is well aware that in some cases compromises (e.g. regarding costs) are necessary and it is ready to do that whenever the overall situation would improve.



5. The MNOs

5.1. The Challenges

Mobile Network Operators (MNOs) are nowadays facing increased challenges. Not only is the market stagnating, especially the consumer one, but also the competition has become more intense. New traditional MNOs and Virtual MNOs (MVNOs) have entered the market. Additionally, new sources of competition, such as cable-TV operators, power companies and PWLAN operators have entered the telecommunication market, thus putting additional pressure on prices and also stealing customers from the traditional operators. Moreover, VoIP is flourishing and will therefore soon become a very serious threat to fix operators and in a medium term perspective also to mobile operators (when combined VoIP/GSM/UMTS phones will be available).

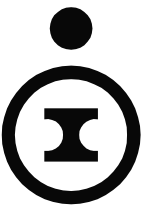
5.2. The Needs of MNOs

MNOs, in order to stay competitive, need to reduce their expenses but also to increase their revenues. In order to reach the latter, it is therefore necessary to follow two different goals: increase the customer basis and increase the ARPU.

The first goal can be reached by stealing customers from the fix network or from competitor MNOs and by concentrating on the segment with the better growth potential which is, as seen in section 3.2.2, the business one (with a particular attention to the SMEs).

The second goal can be reached by boosting the usage of mobile voice and data services. This could be done for instance by introducing new innovative services, by simplifying the usage of the present ones or by reducing the present prices.

The following chapter will therefore suggest a service portfolio that would allow MNOs to increase their customer basis and the ARPU of the SME segment.



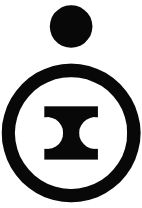
6. The Solution

6.1. How to Fulfil the SMEs' Needs

A new product that would motivate all the different SME profiles to change their telecommunication habits should therefore satisfy all the drivers for change but also take into consideration the barriers for change and therefore find a solution to overcome them.

In order to define the specifications for such a product, Table 1 has been created. This table lists and summarizes all the different drivers and barriers for change for every SME profile as discussed in the previous chapters. For every need a possible solution, i.e. a feature that the new product should have, is then suggested.

Drivers/ Barriers	Needs			Solution
	Profile	Description	Nr	Description
Drivers for change				
Costs	BB-IC	Costs – Cost control for calls among employees	S1	Free calls within the firm
	BB-EC	Costs – Cost control for calls among employees		See S1
	BB-EC	Costs – Cost control for calls towards fix and Swiss mobile numbers	S2	Attractive price for calls within Switzerland
	AA-I	Costs – Cost control for international calls	S3	Attractive price for roaming calls
	AA-D	Costs – Cost control for data calls	S4	Attractive price for data calls
	Common	Cost control – control of total telecom costs		See S1-S4
	Common	Cost control – blocking of services and bill splitting	S5	Offer blocking of service and bill splitting by default
Simplicity	AA-D	Simplicity – Transfer of data independent of network (GPRS, EDGE, UMTS, WLAN)	S6	Data services independent of network used
	AA-D	Simplicity – Integration of PC and mobile data	S7	Offer synchronisation of data between smart phone/mobile phone, laptop and enterprise network (e.g. Outlook synchronisation)
	Common	Simplicity – easy services usage and configuration	S8	Offer support to manually or automatically configure mobile phone, smart phone and laptop
	Common	Simplicity – network independence	S9	Network independence for data and voice calls (see S6)
	Common	Simplicity – integration of voice fix and mobile services	S10	Either full integration of mobile and fix service or substitution of fix with mobile
	Common	Simplicity – reduction of interfaces		See S10
	Common	Simplicity – subscription administration	S11	Only one fee with automatic subscription adaptation, i.e. best-buy guarantee. See also S10
Flexibility	Common	Flexibility – no limitation to use different services where and when needed		See S6, S9 and S10
Barriers for change				
Costs	SS	Costs – Free calls among employees' mobile phones		See S1
	SS	Costs – Cheap calls in general		See S1-S3
Security	AA-D	Security – Secure data transfer	S12	Offer SMS/MMS firewall and reassure SME about security of wireless data transfer.
	Common	Security – guarantee of security (no viruses via SMS/MMS and data transfer confidentiality)		See S12
Quality	Common	Quality – network quality	S13	Guarantee a mobile quality similar to fix and further improve mobile coverage (i.e. EDGE, UMTS, WLAN)
	Common	Quality – pre- and after-sale services	S14	Further guarantee good and special pre-



Drivers/ Barriers	Needs		Solution	
	Profile	Description	Nr	Description
				and after-sale services
Image	Common	Image - fix number for prestige	S15	Offer fix number to mobile phones
Practicality	SS	Practicality – PBX functionality	S16	Possibility to connect and forward incoming ongoing calls to other users
	SS	Practicality – PBX functionality – free calls		See S1
	Common	Practicality – PBX functionality when in office. Possibly same functionality with mobile phones		See S16

Table 1 Possible solutions for the drivers and barriers for change

In section 6.2 the product’s features will be discussed. In section 6.3 price issues will then be discussed in details.

6.2. The Product

6.2.1. Convergence vs. Substitution

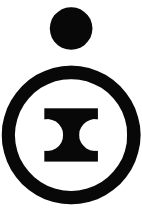
The first basic question is whether MNOs desire to offer a product that is able to integrate fix and mobile platforms or whether they desire to motivate the customer to switch from the fix to the mobile platform (see S10 in Table 1).

Nowadays, considering the existence of fix and mobile infrastructure, a perfect convergence is probably the most desired solution. However, fix-mobile convergence is quite expensive. First of all, this integration forces the MNO to design platform-independent services which are not easily and cheaply implemented. Moreover, it has to be noted that not all operators have fix and mobile networks; for these it is therefore difficult, if not impossible, to offer fully converged products. It has also to be noted that a true convergence of services will not occur before the end of the decade [2]. Additionally, fix and mobile integrated products cause costs for the end-users too, because different systems have to be acquired and maintained.

The alternative to a convergent solution is a substitution of the fix network with the mobile network. This means that the SME should be motivated to completely replace its fix infrastructure with only mobile systems. The advantages would be a reduction in complexity and an increase in flexibility, availability and mobility of the SME and its employees. Relatively surprising is also a rise in the productivity shown by firms after a FMS (Fixed to Mobile Substitution), as demonstrated by independent studies (such as [7] and [11]); a recent Finnish study¹ mentioned in [7] has for instance shown an increase of 25% of the employees’ productivity and of 6% of the overall company productivity after a FMS, and this irrespective of industry.

For the above-mentioned reasons we believe that the business market is now mature for a partial substitution of the fix network with the mobile one. In fact, FMS is already an irreversible global trend, particularly notable in some European countries (see for instance [7] and [8]). Analysys [9 in 8] foresees for instance that around 65 billion minutes of voice worldwide could migrate from landline to mobile networks by 2007. According to Nokia [10] the business segment has already a FMS rate of about 3%, which is expected to further rise in the coming years.

¹ A study made by the Research Institute of the Finnish Economy (ETLA) 2004 for the OECD (Organisation for Economic Co-operation and Development)



Of course, FMS would cannibalize the market for certain operators. However, we must not forget that some important MNOs do not have a fix network and they are therefore not biased in their decisions. For that reason, operators do not have to act considering obsolete internal protectionist practices or considering sentimental exit barriers, but only considering market requirements and first mover advantages.

It has been mentioned that the market is now mature for a partial substitution of the fix network. Only partial, because a distinction between the voice and data worlds is necessary.

We believe that a substitution of the fix voice infrastructure, under some conditions which will be explained in the following sections, is already possible now and should therefore be carried out. However, the market is not mature yet for a complete substitution of the fix data infrastructure, for mainly two reasons: the first is insufficient rate and coverage and the most important reason is insufficient security or at least the perception of security of the mobile data networks.

Following picture shows the reduced telecom interfaces of an SME after a substitution of the fix voice network with the mobile one.

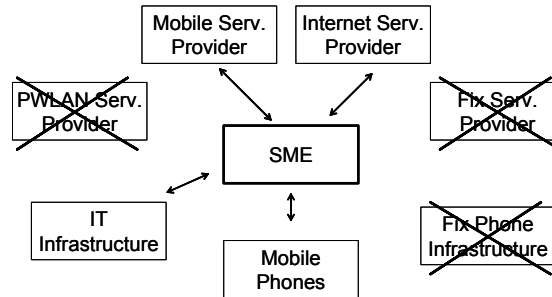


Figure 11 Reduced telecom interfaces of an SME

Future Outlook

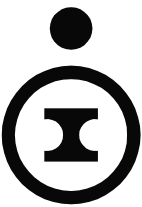
It is however imaginable in the near future that also data services will converge, whenever the problems of security and transfer rate and coverage would be solved, or at least SMEs reassured regarding them.

In this scenario MNOs would have standard offers for WLAN coverage in the SMEs offices, thus further reducing the needed infrastructures and interfaces. However, this option would be relatively expensive because it would require ad hoc installations on customer's site, which would therefore cause an increase in the capital and operative expenses of the MNOs.

At this stage it would also be imaginable that SMEs would completely outsource their storage equipment (Data Harbour), thus reducing the overall ICT equipment to mobile/smart phones and computers (desktop or laptop) which would all be connected with wireless systems.

6.2.2. Features

A substitution of the fix voice services with the mobile ones would certainly improve, but not completely resolve, the situation of SMEs regarding their needs of simplicity and flexibility. However, as seen in Table 1, there are other suggested solutions that



would improve the drivers for change and reduce or eliminate the barriers for change. These solutions are listed hereafter.

A product designed for SMEs should therefore show following peculiarities to reduce the costs:

- S5: The product should offer the possibility to block specific unwanted services (e.g. SMS, MMS, video streaming) and to split the bill between the firm and the employee (e.g. depending on office hours, numbers called, etc).

Following ones to increase the simplicity:

- S6, S9: Every service should be offered independent of the network and should therefore be charged in the same way. This is true for both voice (GSM/UMTS) and data services (GPRS, HSCSD, EDGE, UMTS, PWLAN). At the end the user should therefore be faced towards only two networks, i.e. his office LAN and the mobile voice and data network as depicted in Figure 12.
- S7: Duplication of information should be avoided. This means that MNOs should offer synchronisation possibilities between the mobile/smart phone and the PC/laptop (e.g. mobile office applications which allow synchronizing Outlook™ data with the mobile/smart phone).
- S8: For every single service an automatic or manual configuration of the needed device (e.g. automatic configuration of mobile phone for MMS and mobile phone/laptop for GPRS/EDGE data transfer) should be offered.
- S11: Only one subscription with best-buy guarantee should be offered. This would avoid that the firm checks every single invoice against better subscriptions.

Following ones to solve the problem of security:

- S12: Implement SMS and MMS virus firewalls. Additionally, reassure SMEs about the absolute security of voice and data transfer via traditional 2G and 3G mobile networks (GSM, GPRS, EDGE, UMTS) and offer secure connections via PWLAN.

Following ones to assure the quality standard:

- S13: further guarantee a mobile quality similar to fix network (regarding voice) and further improve coverage and speed for data applications (e.g. over EDGE, UMTS and WLAN)
- S14: Further guarantee good and special pre- and after-sale services to SMEs.

And following ones to solve the problems of practicality and image:

- S1: Calls among members of the same SME should be performed in the same way they are performed today with the PBX (Private Branch Exchange). This means that calls within the firm should be free.
- S16: It should be possible to connect and forward incoming ongoing calls to other users, a function which is supported by the majority of the PBX.
- S15: SMEs are reluctant to renounce their fix numbers for reception and fax mainly because of image matters. As already mentioned, firms with only mobile phones are not considered being very professional. However, having a fix line for the secretary only would complicate the interfaces again and would not allow connecting incoming calls to other employees. To solve this issue, MNOs should therefore offer one the following two solutions for both voice and fax:
 - Fix number portability to mobile phones or
 - Fix number portability to VoIP systems

All the above-mentioned features should be in the standard offer package for SMEs. The main reason for that is because this would simplify the choice for SMEs but also motivate them to use more mobile services, which would then turn out to be beneficial to MNOs.

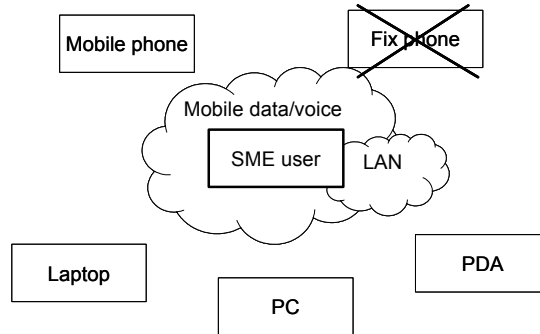
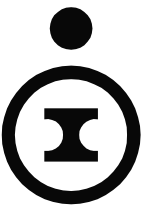


Figure 12 Reduced telecom interfaces of an SME user

The partial substitution of the fix with the mobile network and the above-mentioned features would basically satisfy two of the three drivers for changes of the SMEs (i.e. the increase in flexibility and the reduction of complexity) and reduce or eliminate the barriers for change (Security, Quality, Image and Practicality). However, this would still not improve the situation regarding the cost structure which is a fundamental issue for SMEs; for that reason, this topic is discussed in the next section.

6.3. The Price

As seen in section 6.1 SMEs desire (similarly to the consumer market) to have clear and attractive cost structures (S1-S4) with few subscription choices (S11) in order to reduce the overall complexity and costs. Additionally, especially heavy users desire to have unlimited or quasi-unlimited services.

In our opinion the best way to satisfy the above-mentioned criteria is to offer a pay-per-use rate for light users, and a flat rate for normal and heavy users, with quasi-unlimited or unlimited services. Offering quasi-unlimited service means that specific usage thresholds would be defined; however, the number of these thresholds should be limited and its range broad enough to allow easy cost controls and forecasts.

The suggested pricing concept is depicted in Figure 13 and further explained in the following sections.

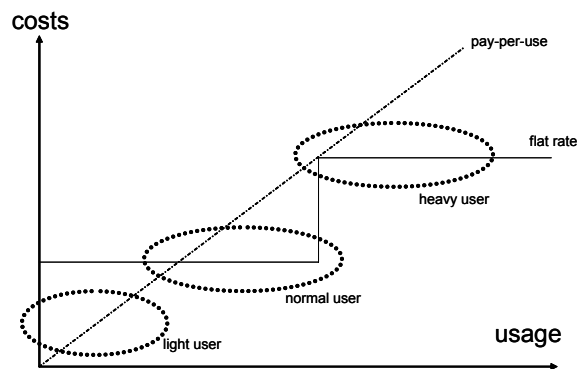
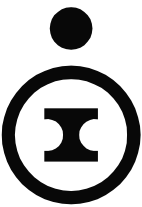


Figure 13 Flat rate concept



6.3.1. The Flat Rate

The flat rate idea, as almost every arguable topic, has several supporters (such as [3] and [4]) and detractors (such as [5] and [6]). One group demonstrates that the introduction of flat rates boosts usage of services and revenues and the other group exactly the contrary. Other parties, such as [12], argue that flat rate is an inevitable trend which can reduce the ARPU but retains present customers and attracts new ones. We also believe that flat rate will inevitable become standard in telecom because there is a growing tendency to consider telecom bearer services as commodities. The trend will therefore be, especially in an All-IP scenario, to move from bearer-based to value-based charging models [13].

We are aware that the flat rate is not a panacea for SMEs and MNOs, but we are convinced that its advantages for normal and heavy users overwhelm the disadvantages. For light users we still believe that a pay-per-use charging scheme is the best solution.

A flat rate has several advantages for both, the SMEs and the MNOs. For the customer it allows having a clear cost control and should therefore finally result in cheaper costs. It also gives him a greater freedom in using all the different services and therefore it gives him more flexibility and mobility (especially with an unlimited flat rate).

A flat rate offers several advantages to MNOs as well. It gives for instance a constant revenue flow independent of seasonal or economical variations. It also increases total revenue considering that customers are boosted to use more existing services and to use new services. A flat rate also increases the customer loyalty and attracts new customers. Last but not least, innovative pricing packages, such as flat rates, are necessary cost motivators for the SMEs to switch from fix to mobile networks [12]. Even considering the introduction of an unlimited flat rate, the risks that operators face are limited; in fact the usage of a service most probably will not increase unlimitedly, especially considering mature services like voice in a professional environment.

The Shared Flat Rate

An innovative type of flat rate, which is only offered in a very marginal way in the Swiss market, but which is very interesting to SMEs, is the shared flat rate. With a shared flat rate SMEs do not have usage thresholds for every single subscription, but these single user thresholds are cumulated for the whole company. This means that a single heavy user can be compensated by other normal users, thus resulting in obvious advantages for the SMEs, as depicted in the following picture:

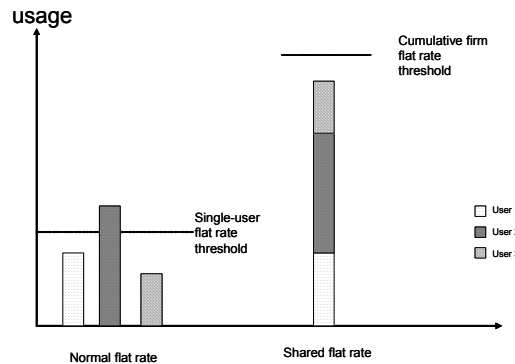
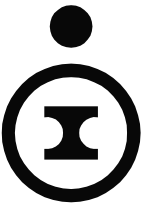


Figure 14 Shared flat rate



The Adaptive Shared Flat Rate

As discussed in section 6.1, SMEs desire to have the guarantee of the best buy, whatever charging scheme is applied (pay-per-use, limited or unlimited flat rate).

In case of a flat rate (or shared flat rate) this goal can be reached by offering an adaptive flat rate (or adaptive shared flat rate) which automatically chooses the most convenient flat rate to the customer. In this way, the customer has the certainty that he is always getting the best offer. A successful example in the Swiss market is the introduction of Orange Optima for the consumer market.

Flat Rate in Practice in Switzerland and Europe

In Switzerland only Orange offers unlimited flat rates for calls within the user group. Otherwise, for other voice services and for the other operators, only bulk discounts and special fares are available.

On the other hand flat rates are offered for data services. Subscriptions with inclusive Mbytes for the GPRS network are available. Recently, Swisscom has launched a quasi-unlimited flat rate for EDGE. Some operators offer unlimited WLAN access with a flat rate.

In the rest of Europe the situation is different. In fact most of the MNOs offer flat rates to business customers with minutes or Mbytes included.

Few operators offer even unlimited or almost unlimited calls under specific conditions. For instance, Wind Italy and O2 Germany offer unlimited calls to the user group for a monthly subscription. Wind Italy customers can also benefit from free calls to other users in the same network. Business customers of Bouygues Telecom in France can even perform unlimited calls to the fix network or to the Bouygues network during office hours (6h-20h).

Only few operators offer shared flat rates to business users for voice and data services, and most of these are concentrated in the United Kingdom (i.e. Vodafone UK, T-Mobile UK and O2 UK).

6.3.2. Charging Schemes for Different SME Profiles

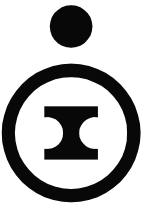
The purpose of this section is to suggest concrete SME charging schemes for the different SME profiles, as defined in section 4.3. The most commonly used services have been grouped into following categories:

- Calls to fix network
- Calls to group mobile phones (i.e. calls to mobiles within the same firm)
- Calls to other Swiss mobile phones (same or other operators)
- Roaming usage (i.e. usage of the mobile phone abroad)
- Data calls

Following possible charging options, which have been justified in the previous section, have been used:

- Usage-dependent rate for light usage of a specific service
- Flat rate for heavy usage of a specific service, which is
 - Unlimited when possible or
 - Adaptive shared flat rate, when unlimited usage is not possible. In this case, if possible, only two flat rate thresholds have been chosen. In order to facilitate cost control, the first threshold should largely include the normal users and the second one the heavy/fanatic users.

The resulting charging schemes for the different SME profiles are summarized in Table 2 and further described in the following paragraphs.



	Stationary Systems	Basic Business – Internal calls	Basic Business – External calls	Always Available – International calls	Always Available – Data calls
Calls to fix network	Unlimited/ Usage-dependent (1)	Unlimited	Unlimited	Unlimited	Unlimited
Calls to group mobile phones	Unlimited/ Usage-dependent (1)	Unlimited	Unlimited	Unlimited	Unlimited
Calls to other Swiss mobile phones	Usage-dependent / adaptive share flat rate	Usage-dependent	Adaptive shared flat rate	Adaptive shared flat rate	Adaptive shared flat rate
Roaming usage	Usage-dependent	Usage-dependent	Usage-dependent	Adaptive shared flat rate	Usage-dependent
Data calls	Usage-dependent	Usage-dependent	Usage-dependent	Usage-dependent	Adaptive shared flat rate

(1): Unlimited in the office zone. Usage-dependent outside the office zone.

Table 2 Possible charging options for the different segments

It is suggested that calls to group mobile phones be unlimited. This is because such calls are virtually free of charge to MNOs and because this would reduce or even eliminate one of the barriers for change (see S1 in Table 1).

It is also suggested that calls to the fix network be unlimited. This would anticipate a trend which is inevitable and in fact it is already partially available to the fix network consumer market. An additional pressure to an unlimited flat rate for calls to the fix network is coming from the fast growing number of VoIP operators (which already offer unlimited flat rates under specific circumstances) and from the future launch of VoIP-compatible mobile phones. We are convinced that such a foresighted move would attract new customers from other mobile operators and from fix operators.

Stationary Systems

In order to attract “Stationary Systems” users (and therefore to switch from a fix network to a mobile network) a subscription fee competitive with the fix network should be introduced (see S1-S3 in Table 1). Calls to the fix network and to group mobile phones should be unlimited only in the office area. Outside the office area and for other services a usage-dependent rate should be applied.

Because in some cases such SMEs would also perform several calls to other Swiss mobile users, an adaptive share flat rate option should be offered for such calls.

Basic Business – Internal Calls

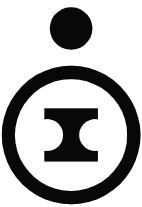
This profile uses the mobile phones mainly to perform calls within the company. Therefore, calls to these mobile phones should be unlimited (see S1 in Table 1). Additionally, calls to the fix network should also be unlimited (S2).

Opposite to the previous segment, calls are not limited to the office area. Under this circumstances a higher subscription fee can therefore be requested.

Other service would be charged depending on usage.

Basic Business – External Calls

Unlike the previous profile, the “Basic Business – External Calls” user performs several calls to other Swiss mobile phones. For that reason an adaptive shared flat rate option for calls to Swiss mobile phones should be offered (see S2 in Table 1). It is recommended that the first threshold be at 200 minutes (to largely cover normal users, see Figure 5) and the second at 400 minutes (to largely cover heavy users). Unfortunately, due to high interconnection fees, it is not possible to limit the number of thresholds to two. Therefore, following thresholds should have a distance of 200 minutes.



Always Available – International User

Additional to the needs of the previous profile, the “Always Available – International User” extensively uses the mobile phone abroad. For that reason, an adaptive shared flat rate option for roaming usage should be offered (see S3 in Table 1). This should cover all the calls which are originated and terminated abroad (further investigations on usage abroad should be done in order to exactly define which calls should be included in this flat rate: local or international calls originated abroad, calls terminated abroad or even international calls originated in Switzerland). The first threshold should be set at 200 minutes (to largely cover normal users, see Figure 6) and the second at 400 minutes (to largely cover heavy users). Following thresholds should have a distance of 200 minutes.

Due to high and complicated roaming fees, this option could for instance be limited to the usage on partners’ networks.

Always Available – Data User

Opposite to the AA-I user, the AA-D is a heavy user of data services. For that reason an adaptive shared flat rate option should be available, and this should be independent of the used technology (GPRS, HSCSD, WLAN, UMTS) as shown in Table 1 (S4 and S6). This would also bind the customer to the MNO and therefore avoid that he received data services (e.g. PWLAN) from other operators.

The adaptive shared flat rate thresholds should be set at 500 Mbytes (to largely cover normal users, see Figure 7) and 1 Gbyte (to largely cover heavy users). Above this threshold usage should be unlimited.

6.4. Product & Price: Summary

In order to keep a simple charging scheme it is therefore recommended to offer only one subscription with a limited number of options. This basic subscription and the available options include all the needed features as discussed in section 6.2, and cover all the different SME profiles as shown in section 6.3. This charging scheme is described hereafter and is represented in Table 3.

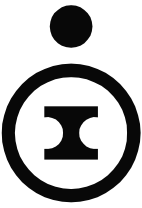
The “**SME Business**” basic subscription would include following features:

- Calls to the fix network and to group mobile phones are unlimited
- Bill splitting between firm and employee available
- Blocking of specific services available
- Every service is offered and charged independently from the network
- Automatic or semi-automatic device configuration for every service is available
- Every employee is able to connect ongoing calls to other mobile phones within the firm
- Voice mailbox usage is unlimited

A possible very competitive price for such a subscription could be around 50.- CHF.

All the other services are charged on usage unless one of the following non-exclusive options is chosen:

- “**Office-zone Option**”: with this option calls to the fix network and to the user group would be unlimited only within the office area. Outside this area, calls would be charged on usage. This option would cause a reduction of the basic subscription fee, which could for instance amount to 40%.
- “**Swiss Mobile Option**”: Adaptive shared flat rate for calls to Swiss mobile phones excluding the user group. The adaptive shared flat rate thresholds should be set every 200 minutes (200m, 400m, 600m, etc). Possible price for

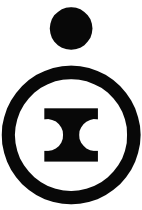


such an option could be 50.- CHF for every block of 200 minutes (this corresponds to 0.25 CHF/min in case all 200 min are used).

- **“International Option”**: Adaptive shared flat rate for roaming usage. The adaptive shared flat rate thresholds should be set every 200 minutes (200m, 400m, 600m, etc). Due to high roaming fees this option could be limited to the partners’ networks. Possible price for such an option could be 100.- CHF for every block of 200 minutes (this corresponds to 0.50 CHF/min in case all 200 min are used).
- **“Data Option”**: Adaptive shared flat rate independent of the used technology (GPRS, HSCSD, WLAN, UMTS). Thresholds would be set at 500 Mbytes and 1 Gbyte. Possible price for such an option could be 50.- CHF for up to 500 Mbytes (this corresponds to 0.10 CHF/min when all 500 Mbytes are used), 100.- CHF for up to 1 Gbyte and 150.- CHF above.
- **“Multimedia Option”**: unlimited usage of Multimedia services (SMS, MMS). This has not been discussed in the previous chapter because at the moment it is not diffused among business users. However, it is not excluded that in the future this would be an interesting option for some specific SMEs. For that reason this possibility should be further considered.
- **“Mobile office Synchronization Option”**: As discussed in section 6.2.2, an SME should be offered the possibility to synchronise the mobile phone data with the PC/laptop data. A price of 5-10.- CHF per mobile phone would be considered competitive.
- **“Fix Number Option”**: This option should allow a mobile phone to be reached via a fix number. As previously discussed, this option is necessary for a matter of image and would be used for the fax and for secretarial functions. Further studies should be performed to check whether this is a feasible option or if it should be realized by other means, like VoIP systems.

The above-mentioned options do not necessarily exclude others. However, these should be limited to special cases, such as multi-card or only-data-card options.

		Basic Subscription	Available options						
			Office-zone Option	Swiss mobile calls option	International calls option	Data calls option	Multimedia option	Mobile office sync option	Fix number option
Charging scheme	Calls to fix network	Unlimited	Unlimited in office zone / usage-dependent otherwise						
	Calls to group mobile phones	Unlimited	Unlimited in office zone / usage-dependent otherwise						
	Calls to other Swiss mobile phones	Usage-dependent		Adaptive Shared Flat rate - 200 min - 400 min - 600min - etc					
	Roaming usage	Usage-dependent		Adaptive Shared Flat rate - 200 min - 400 min,					



	Basic Subscription	Available options						
		Office-zone Option	Swiss mobile calls option	International calls option	Data calls option	Multimedia option	Mobile office sync option	Fix number option
				- 600 min - etc.				
	Data calls	Usage-dependent			Adaptive Shared Flat rate - 500 MB - 1 GB			
	Multimedia	Usage-dependent				Unlimited		
Targeted Profile	BB-IC	SS	BB-EC	AA-I	AA-D			

Table 3 Possible subscriptions' combinations

6.5. Conclusion

Intercai recommends MNOs therefore to urgently check the possibility to introduce the mobile offer as defined in section 6.4, and in case of a positive response, to promptly introduce it. We recommend to do it immediately because, as it will be shown in the following paragraphs, a first mover advantage is fundamental, and because there are already signs that operators are moving towards this direction (i.e. quasi-flat rate for data calls, flat rate for voice calls among mobiles of the same user group).

As already discussed, such an offer would be beneficial to SMEs for several reasons. First, it would give SMEs clear cost controls over their telecom expenditures. Secondly, because of the cost scheme and features, such an offer would motivate SMEs to perform an FMS, thus allowing them to reduce total costs (possibility to eliminate fix phone infrastructure), to reduce the complexity (less systems and interfaces) and to increase the flexibility and mobility. As a result, this would increase the overall productivity of the firm but without increasing the total expenditures for telecom services.

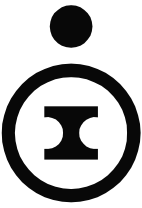
We are convinced that such an offer would also bring several advantages to MNOs. Because of the attractive package, this offer would attract new customers from other MNOs and from mere fix line users; however, in order to benefit from that, first mover advantage is fundamental and the MNO has therefore to be the first one to offer such a package.

Assuming that such an offer would conservatively attract only 1% of the SMEs (and therefore 1% of the SME workforce) and conservatively assuming that they would purchase only the basic subscription, this would create an additional revenue of about 1 million CHF.

We also believe that this offer would increase customer loyalty, thus reducing business churn rates and all the associated costs in acquiring or re-acquiring business customers.

We are also sure that such a product would increase the ARPU of present customers as shown in the following paragraphs.

Users of basic services (SS, BB-IC) would only purchase the basic subscription (50.- CHF). However, this would still represent a higher amount from what they are presently ready to pay for every single employee. Additionally, especially for firms which



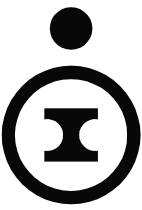
have performed a voice FMS, this would motivate them to use other mobile services which otherwise they wouldn't have used.

Users of domestic voice services (BB-EC) would purchase the Swiss mobile option (total of 100-150.- CHF), thus bringing them to a similar or higher level of the present ARPU for the BB segment (110-120.- CHF). Additionally, such a segment, because of flat rates, would also be motivated to use other services, such as data ones, thus potentially increasing their ARPU.

International users and data users (AA-I and AA-D) with the purchase of the different options (total of 150-250.- CHF) would come to a level similar or higher than the present ARPU of the AA segment (180-190.- CHF). Additionally, this would motivate international users to buy data options and vice versa. A flat rate or quasi-flat rate of data services would educate the user not to think about data limitations; as a consequence, he would be more prone to use other data services (e.g. mobile video) which would then be charged based on their content, thus increasing the ARPU.

It is therefore realistic to calculate that such an offer would increase the ARPU for the SME segment of ca 30.- CHF.

To conclude, Intercal thinks that such an offer would be beneficial for both, SMEs and MNOs, and would give a positive stimulation to the Swiss telecom market. This would create a solid basis and culture for future innovative services which would then be charged based on their content.



7. A Business Case for a Specific SME

Hereafter, a business case for a concrete SME will be presented. This business case is based on a Swiss leading ICT consulting firm. In this case the employees are fairly mobile within the country. The mobile phone is extensively used also abroad by some employees. Data usage is limited at the present time because of the high costs and security concerns; however, there is a clear trend in using more and more such services. The profile of this company could therefore be AA-I with a tendency to become AA-I/AA-D.

7.1. Present situation

Every employee of this company owns a mobile phone, which is his or her main means of communication. A PBX is available mainly for a reason of image (to perform connection of ongoing calls and to be able to show a fix number for reception and fax).

The total costs for 8 months of mobile and fix network are shown in Figure 15 respectively Figure 16. The shown costs are calculated per user; these corresponds to the number of users with a principal SIM card (i.e. secondary SIM cards are not computed as users) for the mobile network and to the number of average users for the fix network.

From this data it follows that the costs for the mobile network are quite stable (with the exception of a few months). Subscription fees, national and international calls cause the majority of the costs.

Also the total costs for the fix network are quite stable. Subscription fees, PBX fees and national calls cause the majority of the costs.

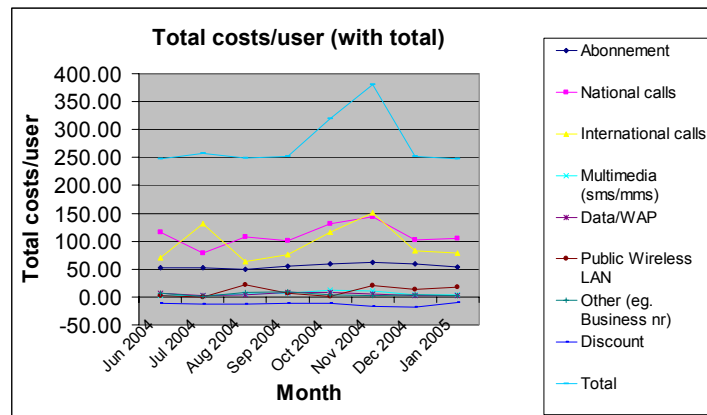


Figure 15 Total costs of mobile services per user

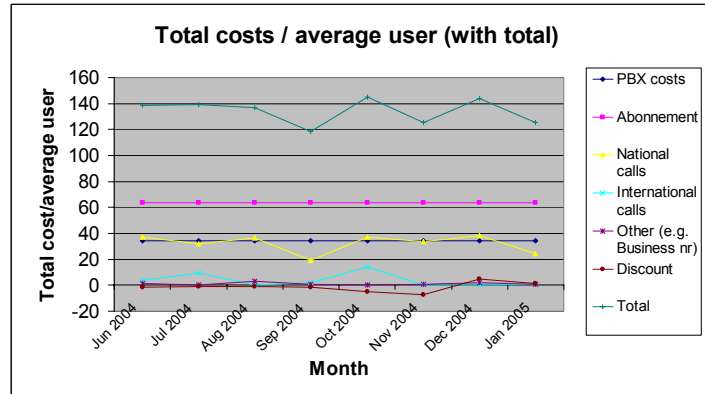
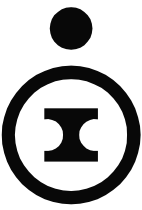


Figure 16 Total costs of fix services per user

7.2. Desired Situation

The majority of the fix network costs are due to fixed costs, i.e. the subscription fees and the PBX costs. Only a small part is due to actual services, i.e. national or international calls. In this case the firm would welcome the elimination of any fix infrastructure if this wouldn't be detrimental to its image and if it wouldn't increase the total costs excessively.

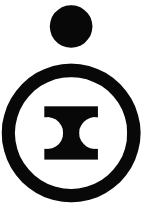
Assuming the validity of the features and price schemes presented in chapter 6, this company would therefore be interested in subscribing to following options for its mobile phones:

Subscription/option	Price	Subtotal / total	Note
Business Subscription	50.-		
Swiss Mobile Option	50.- or 100.-		This should correspond to the maximum paid adaptive shared flat rate per user, even with an important increment in performed calls
		100.- or 150.-	110.- to 120.- CHF corresponds to the ARPU of the BB segment [1]
International Option	100.-		This should correspond to the maximum paid adaptive shared flat rate per user, even with an important increment in performed calls
		200.- or 250.-	
Data Option	50.- or 100.-		
		250.- or 350.-	The ARPU for a AA user (top segment) is 180.- to 190.- CHF
Fix Number Option			This option would be used only once or twice for the reception and the fax

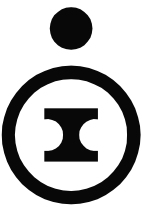
Table 4 Desired price plan

With the above-mentioned options, this firm would therefore pay between CHF 250.- (considering a similar use of mobile phones) and 350.- (considering an increase in the usage of mobile phones) per user.

This price scheme would be interesting to the firm because the lower total corresponds to the presently average costs. Even considering a strong increase in the usage and therefore in the costs (ca max. 350.-), this price scheme would still be interesting to the firm because it would have eliminated the costs of the fix infrastructure and it would still keep a clear cost control.



This price scheme would also be interesting to the MNO. Because it would create a constant revenue flow, it would increase the ARPU (from ca 250.- to max 350.-) and it would bind the customer in a deeper way.

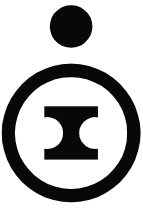


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9. Glossary of Abbreviations

AA	Always Available
AA-D	Always Available – Data usage
AA-I	Always Available – International usage
ARPU	Average Revenue Per User
BB	Basic Business
BB-EC	Basic Business – External Calls
BB-IC	Basic Business – Internal Calls
CC	Communicative Consumers
EDGE	Enhanced Data for GSM Evolution
EO	Emergency Only
FF	Fun&Free
FMS	Fixed to Mobile Substitution
GPRS	General Packed Radio Service
GSM	Global System for Mobile communication
HSCSD	High Speed Circuit Switched Data
ICT	Information and Communication Technology
LAN	Local Area Network
MM	Midrange Midis
MMS	Multimedia Messaging Service
MNO	Mobile Network Operator
MVNO	Mobile Virtual Network Operator
NN	Normal Narrowbanders
PBX	Private Branch Exchange



PDA Personal Digital Assistant
PWLAN Public Wireless Local Area Network
SME Small and Medium Enterprise
SMS Short Message Service
SOHO Small Office / Home Office
SS Stationary Service
UMTS Universal Mobile Telecommunication Standard
VoIP Voice over Internet Protocol
VPN Virtual Private Network
WLAN Wireless Local Area Network