



*Mobile Operator  
Business Game*

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Case Description – Terra Mobile

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### Business Game Introduction

#### Objective

A business game such as MOB (Mobile Operator Business Game) provides a holistic view on management challenges, enterprise functions, and their interdependencies. Participants get an opportunity to practice managerial analysis, planning and decision-making skills in a simulated virtual mobile market. Business game training also enhances team work skills under time pressure, promotes networking with peers, and helps to identify improvement items in managerial, economics and technology competences.

#### Leadership Challenges

The central management challenges that the participating teams (i.e. MOB teams, or briefly teams) in a business game session face include the creation and implementation of a strategy, customer-driven approach, management of growth and change, rapid technology evolution, competition, and continuously changing market conditions.

#### Implementation

The general process and phases of MOB training are shown in Figure 1. Participants typically first acquire the necessary basics of economics and technology (e.g. through studies or work experience), as well as the essentials of a MOB game session in form of this document (the virtual mobile market, the game objectives, and some operational aspects of the game session). The composition of the participating teams is also agreed well before the game session in order to allow enough time for the teams create their game strategy.

Each team (2-6 teams in total) becomes the management board of a mobile operator company and drafts their confidential game strategy based on a template of questions (written preliminary exercise, strategy planning exercise). All mobile operators are originally identical which makes the comparison of team performance easier. Each team may organize itself internally by delegating tasks (e.g. CEO, CFO, CTO ...) but typically each team member needs to handle multiple tasks (team size 2-4 persons). The purpose of the strategy planning exercise is to familiarize the teams with strategic thinking and the virtual mobile market. It is useful to compare multiple strategic options before focusing on one. Notably, even the brightest strategies often become worthless because of the actions of competition.

The teams implement their planned game strategy in the actual game session which typically takes one long day. A game session is a sequence of seasons (starting season is season 0). One season equals one year. The time of the virtual mobile market is stopped between the seasons for decision-making (this means roughly one hour of thinking time). For each season teams make decisions concerning e.g. pricing of services, sales and marketing, research and development, network maintenance, purchasing and human relationship management. These decisions are entered in a computer (a Excel application) and delivered to the game facilitator according to his/her advice. At the beginning of each season, the facilitator delivers the company-specific business results and new market information to the players. Teams get the new information to their computers and continue

the next season planning and decision-making. The number of seasons played in a day varies according to the progress of the teams and market.

The game session ends in the final part where each team presents the story of their company. This debriefing is an important learning tool and it is important that all teams discuss actively the performance of each company (i.e. MOB team).

The whole training loop is finally closed by collecting written self-evaluation and feedback from the participants.

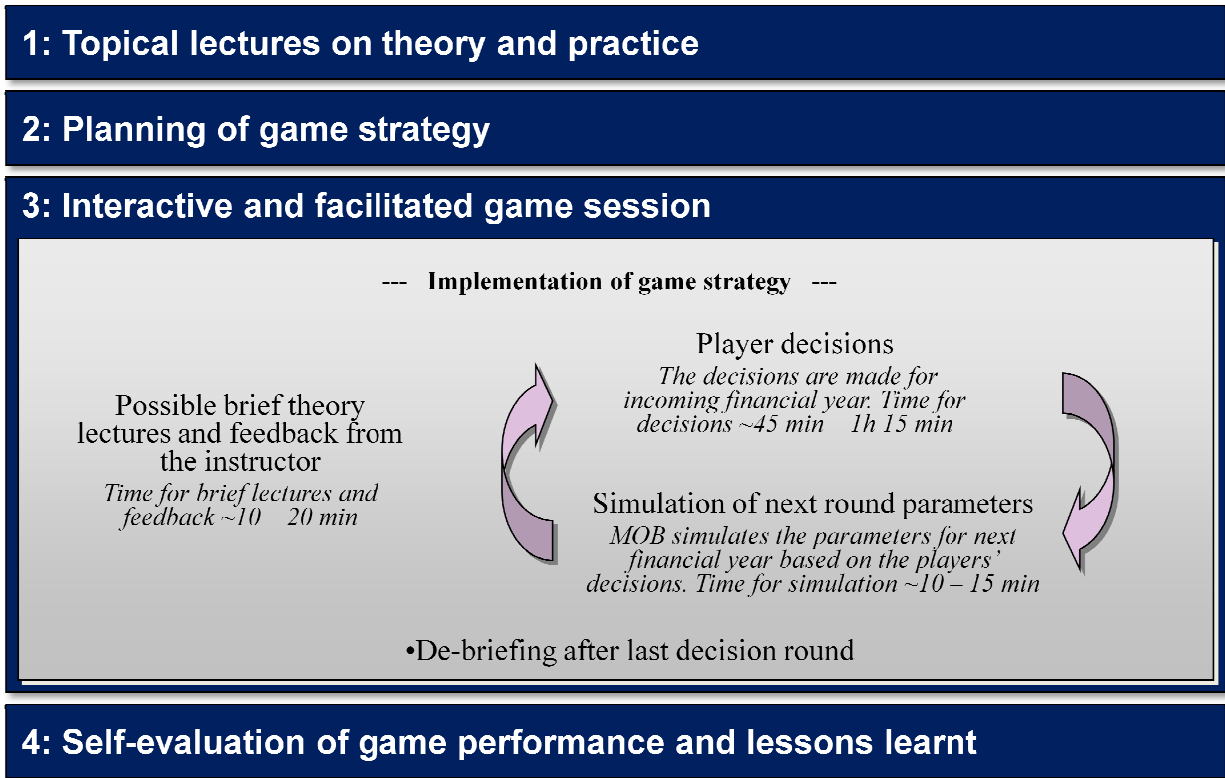


Figure 1. General process of the MOB business game.

### Roles of Facilitator

The facilitator is the person who manages the MOB game session. He/she has several roles and the teams should stay aware of which hat the facilitator is wearing at each time. As a coach the facilitator advises all teams in an open and fair manner. As a consultant the facilitator may sell information and services to teams (with consultant's responsibility). As a regulator the facilitator may allocate licences (e.g. spectrum) or restrict the provision of services. As a judge the facilitator resolves conflicts between teams and between a team and the regulator.

### Success Factors and Winning Criteria

In retrospective, the winners of MOB game sessions have used very different kinds of strategies, but they always have one. A strategy seems to work best if it is value/customer-driven, logical, and commonly understood by the team members. Adjusting the strategy continuously is also a sign of winner and sometimes it is necessary change the strategy radically but in a controlled way.

A well-organized team has an advantage because it can efficiently exploit the limited planning time for parallel tasks. A missing or non-logical strategy easily leads to conflicting decisions and mistakes under time pressure. Clear focus helps in managing time. Another typical mistake is to forget the customer and trust too much the “unbeatable engineer services”. The winning criteria depend on several things. The most important is of course for the team/company to be profitable. Other metrics can be different market shares and growth figures. But as a whole, as in any business, you need to outperform your competition. How this is done is entirely dependent on the teams' actions and strategy. The winner of the game will be announced in the end on each game session, e.g. by voting or by announcement by the facilitator.

## Virtual World – Terra Mobile

### Market Environment

Mobile operators are living interesting times in Terra Mobile, a small European EU-member country (see Figure 2). Terra Mobile is a democratic country and promotes the development of the information society in the country. The market development is based on actions made by the private companies which must follow the prevailing law of communications market and the competition. For instance cartels and price agreements are not allowed between companies. If this would happen, the companies involved would be punished by the authorities.

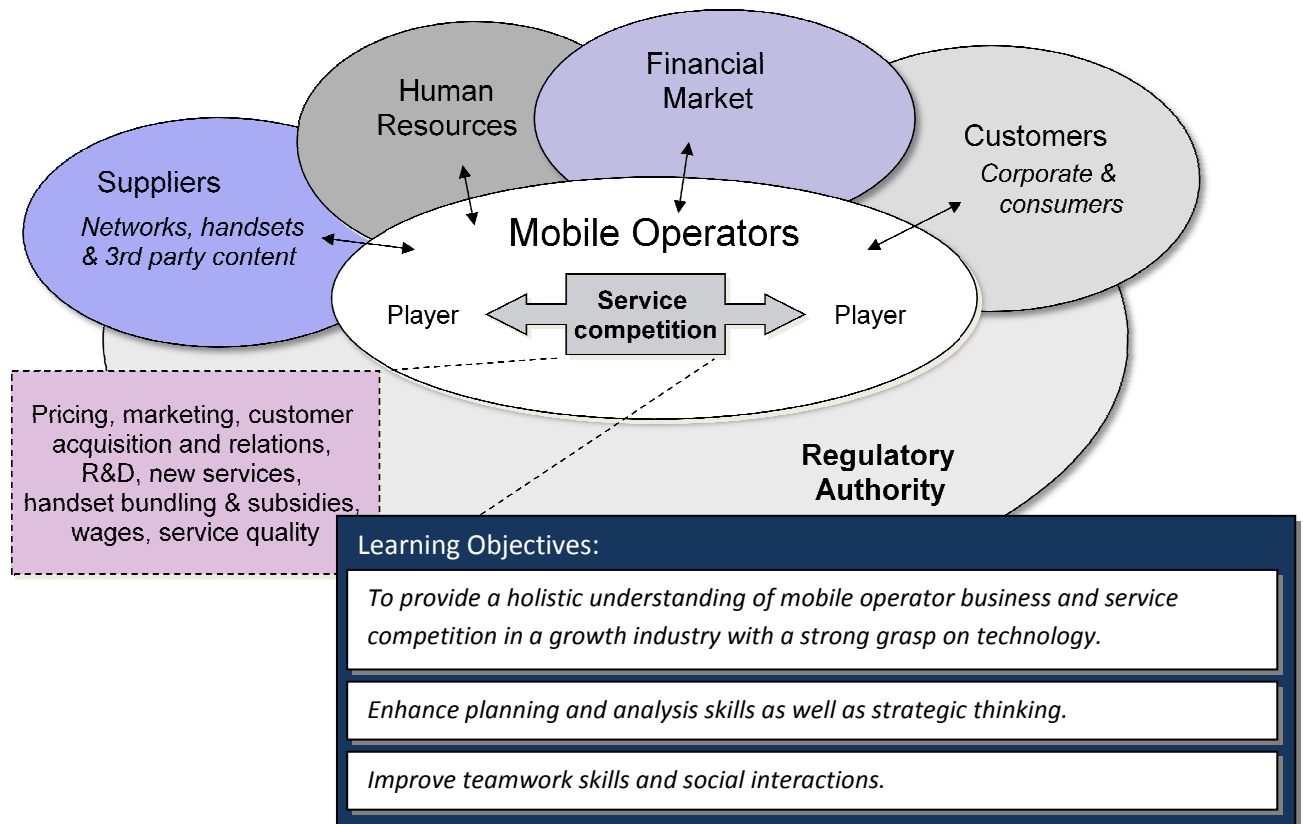


Figure 2. The turbulent mobile market environment.

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Rapid technology evolution continues including Internet, broadcasting, radio access, and mobile devices. Authorities are restructuring the market environment e.g. with new spectrum licenses, pricing regulation, bundling rules, and vertical separation. Suppliers are searching for new space along the value chain. Corporate and consumer customers become more demanding in quality and personalization thus requiring more focused segmentation by the operators. Financial markets are going up and down as usual and depressions may occur causing challenges for long-term investment decisions.

### Game Structure

MOB is made out of an Excel workbook (Excel application), “the player module”. Each team gets its own player module. Usually all the player modules are identical in the beginning of a session. This enables games with identical starting setting for all teams, but also more realistic settings where there is a market leader and challengers of different strengths is possible. The facilitator of the MOB sessions generates new market situations based on the teams’ decisions. Generation of market situations is highly automated. However, if necessary, the facilitator can intervene to the parameterization of the game. He can also manipulate teams’ decisions if necessary. Manipulation of results is of course recommended only in the case of clear unintentional input.

The decision making in the player module is distributed in the following manner:

- Offers for consumers (e.g. subscriptions, messaging and data services);
- Offers for corporations (e.g. subscriptions and data services);
- Value added services and content;
- Mobile devices business;
- Sales and Marketing;
- Customer care and service;
- Research and development;
- Networks (investments, maintenance etc.);
- Human resources and administration;
- Financing and cash flow statements (CFS);
- Income statements (IS) and balance sheets (BS).

Information directly related to the decision making is shown in the same window as the where the decisions are made. Teams can start the decision making from any of the decision parameters, but it could be easier to follow some kind of a predefined pattern, e.g. by going through the decisions in the same order as the buttons on each window. In addition to the decision making windows, the player module has separate windows for financial information, such as the income statement and the balance sheet, and a main window. The main window is where the decisions are saved and sent to the facilitator and the new generated market situations are retrieved. The main window can also contain other game specific information.

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### Modeled Subgames

MOB includes many different sub games which all are somewhat related to each other, but can be handled as separate entities. Decision-making regarding these sub games is in a more strategic level and can not be directly mapped to any decision fields. Teams should before the game session make a strategic business plan regarding the sub games. It is important that the teams have at least an initial idea to which direction they are going. The sub games are:

- Demand – supply balancing game;
- Cellular radio game (GSM vs. GPRS vs. EDGE vs. WCDMA etc.);
- Multi-radio game (cellular data vs. WLAN data vs. possible other radios);
- Pricing game (flat rate vs. usage based vs. block pricing vs. bundles);
- Charging game (prepaid vs. postpaid);
- Messaging game (SMS vs. MMS vs. other messaging alternatives);
- Broadband connectivity game (mobile broadband vs. xDSL vs. other access technologies);
- Mobile content game (operator charging vs. bit pipe);
- Mobile devices game (e.g. full subsidy vs. no subsidy).

The Demand-supply balancing game is the top-level game. The teams see some indications of demand of the services they are selling and they must try to supply to this demand. Essential elements of this type of game are the estimation of demand and relevant preparations for equipment capacity.

The Cellular radio game is a technology sub game. Teams must fulfill the emerging need for more capacity in cellular data services by developing knowledge and purchasing equipment of third generation (and beyond) radio access and trunk technologies.

The Multi-radio game is another type of radio technology game. Cellular radio technologies are challenged by other emerging technologies. Teams must ponder the positioning on e.g. WLAN technologies. Will WLAN be a strong competitor of cellular technologies or will its role be more of a contributing extension of cellular technologies for bandwidth intensive services?

In the Pricing game teams have to decide on their pricing schemes, e.g. between usage based pricing and flat rate pricing. The basic assumption in this sub game is that consumer customers do not like meters, and prefer flat rate. On the other hand, this distinction is not as important to corporate customers. Flat rate might not be an appealing choice for the operators because with flat rate pricing it is difficult to predict the overall transmitted traffic.

The Charging game deals with timing of charging. There are two charging schemes for consumer customers: prepaid and postpaid. Prepaid charging has had significant importance in many countries in increasing the cellular penetration rate when saturation of postpaid users has started to emerge. Prepaid has traditionally been an attempt to get the less profitable customers. Customers belonging to this segment can for example be customers that aren't credit worthy. If a customer isn't credit worthy it does not necessarily mean that he is a bad customer. For example young people fall into category of non-credit worthy and still they are seen as a very important customer group.

### Demand

Demands for different services follow the commonly known market life cycles. A separate life cycle curve is defined for each offered service. Demand is defined in three levels. 1) First there is the population of the imaginary country. Usually during a game session growth of population is small and linear. 2) Second level is the number of voice subscriptions (pre- and postpaid). The life cycle of these subscriptions is essentially the same as the life cycle of mobile communications, which within the scope of the game is always either in growth stage or maturity stage. 3) On the third level there are the market life cycles of other services that are handled as additions to the voice subscription. The upper levels can be seen as the upper bounds of demand. Number of active subscriptions cannot radically exceed the number of the population and users of a particular value added service cannot exceed the number of subscriptions. However this might not hold true for actual subscriptions out on the market.

There are services that are not in commercial use at the beginning of the game and are dependent on the technological choices of the participants. For example data services via e.g. WCDMA networks enable a much richer service portfolio than data services via the basic GSM/GPRS networks. For these kinds of services static demand curves are not desirable. Participants' actions have an impact on the demand and it must be shown. A more dynamic approach is used for such services. The dynamic demand curves are calculated separately for every season.

### The First Season Situation

The population of the country is at the beginning of the game (season 0) at 5 200 000. The population is expected to grow for many years to come. The growth rate is estimated to be a modest 0,15 - 0,25 percent per year. The economy in the country is steady and quite healthy and the inflation is currently on a reasonable level at 2,2 percent. According to market analysts, this situation will continue also in the long run, with some small adjustments. Also, the interest rates are at a low level, currently ranging between 3-5 percent. The interest rate level will not see any drastic movement in the forthcoming years, at least according to some analysts.

Every mobile operator which operates in the country is classified as an actor with significant market power (SMP). Supervision of the mobile communications market is done by the country's Communications Regulatory Authority (CORA). The most important tasks of CORA are to promote competition and to prevent anti-competitive behavior of SMP's. The penetration rate of mobile voice subscriptions is currently 80,8 percent of the population, i.e. there is still room for growth. The estimation for the subscription growth rate for next season is at 6 percent. According to consultants, voice will remain as a cash cow for at least three to five years.

The amount of consumer subscriptions out of all subscriptions is approximately 72 percent. The country's consumer customers have traditionally been quite focused on postpaid voice subscriptions, but according to some research this is going to change in the future. Currently 90 percent of the consumer voice subscriptions are postpaid. In five years this number is estimated to drop to about 75 - 80 percent. SMS has traditionally been a very important service for the operators. Some studies have been made which indicate that SMS will slightly grow for a few years to come, but MMS will gradually replace some SMS traffic.



## Mobile Operator Business Game - Player Instructions

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The interest for cellular data is growing. However, for cellular data to become more popular, faster and better quality networks are needed. In the beginning of the game session GPRS is the only packet based data technology in use, but depending on the operators, EDGE and WCDMA networks will emerge during the next few years. The number of cellular data users in the beginning of the game is quite low (approximately 30 000 per operator). 65 percent of these are consumers and 35 percent corporate users. The cellular data growth rate will heavily depend on the operators' actions, but according to some estimates it could be as large as 50 - 150 percent during the first few seasons. The same assumptions can be made for the WLAN technology, however WLAN is highly dependent on the devices that are on the market. A thing to remember is that the end customers' capabilities to exploit new services grow continuously, depending on the evolution of the networks, services, and/or actual mobile devices.

There are two different customer segments in the MOB game, as already has been indirectly mentioned. The first is the consumer segment and the second is the corporate segment (incl. public organizations). These are additionally divided into four (4) distinct sub segments with their own specific needs and behavior:

### Consumers:

- **Innovators**                      **5% of all consumers**
  - *Highest ARPU, highest demand on new services and quality, churns easily*
- **Early adopters**                **10% of all consumers**
  - *High ARPU, high demand on new services and quality, modest churn*
- **Majority**                         **55% of all consumers**
  - *Medium ARPU, price sensitive, modest demand on **new** services and quality, modest churn*
- **Laggards**                         **30% of all consumers**
  - *Lowest ARPU, highest demand on affordable services, low demand on quality and new services, churns easily*

### Corporations/Organizations:

- **Soho**                                **30% of all employees**
  - *Low ARPU, price sensitive, low demand on new services and quality, churns easily*
- **SME**                                **30% of all employees**
  - *High ARPU, high demand on new services and quality, high churn*
- **Large**                               **25% of all employees**
  - *High ARPU, highest demand on new services and quality, modest churn*
- **Public**                              **15% of all employees**
  - *Highest ARPU, low demand on new services and quality, modest churn*