



# Mobile Operator Business Game

## IRoNet Results Seminar

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# Outline

- The Mobile Operator Business Game (MOB) Project
- Timeline
- Introduction to Business Games
- The Mobile Operator Business Game (MOB)
- Comparison of MOB vs. Other Business Games
- Conclusions & Perspectives



# The Mobile Operator Business Game (MOB) Project

- Motivation:
  - To gain better insights into the mobile operator business, especially the Finnish one
  - Finland has been a forerunner in mobile communications for years, but the situation has changed significantly with emerging mobile data services and Mobile Internet



# Timeline (1/2)

- Beginning of 2003:
  - A new professorship (Networking Business) started in the Networking Laboratory of HUT
  - Project definition
- Beginning of 2003 – September 2003:
  - First model built, a elementary prototype
- Fall 2003:
  - Tests, S-38.042 Seminar on Mobile Operator Strategies and Games (3 cr) L
    - Testing by students participating to the course
    - Two other business games played => benchmarking
    - Valuable feedback
- December 2003:
  - A Master's Thesis by Juha Kokko



# Timeline (2/2)

- End of 2003 – summer of 2004:
  - Second stage of development (improvements in usability and functionality, new features, documentation etc.)
- First half of 2004:
  - Tests, S-38.041 Networking Business
- By summer of 2004:
  - A Master's Thesis by Mathias Tallberg
- LEAD project:
  - Tentatively approved by Tekes



# Introduction to Business Games

- Have become a way of teaching in many business schools
- Promote the idea of "learning by doing"
- To summarize different areas of business under one teaching event
- *"The purpose of a teaching simulation is to convey experimental lessons transferable to the real world"* (Lane 1995)
- *"The game [simulation] is valid to the degree that the learning objectives are achieved by the participants"* (Peters et al. 1998)
- A business game can not exactly tell how the future will turn out
- But, it can be used to:
  - analyze business constraints
  - dependencies
  - possible futures
  - help to gain better understanding of businesses
  - improve teamwork
  - be fun
- Complexity vs. simplicity



# The Mobile Operator Business Game

- The Mobile Operator Business Game is a business simulation game specifically related to the mobile operator business environment
- Focus on new mobile data services
- An elementary prototype developed by Juha Kokko
- Modelled games:
  - Demand – supply balancing game
  - Cellular radio game (WCDMA vs. EDGE)
  - Multi radio game (cellular vs. WLAN)
  - Pricing game (usage based vs. flat rate vs. block pricing)
  - Charging game (prepaid vs. postpaid)
  - Messaging game (SMS vs. MMS)
  - Roaming game (bilateral vs. clustered vs. centralized)
  - Mobile content game (operator charging vs. bit pipe)
  - Handset and MVNO game
- Goal: A teaching tool



# The Mobile Operator Business Game: Decision screens (1/3)

Management Informations System	<b>Offers for Consumers</b>	Offers for Corporations	Offers for Content Providers	Marketing	Research and Development
Roaming	Network Maintenance	Purchasing	Human Relations	Financing	Cash Flow Statement

  

<b>Voice Subscriptions</b>	Data Services	Person to Person Services
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**Offers for consumers**

Postpaid subscription		Prepaid subscription		Graphs	
	Season 2	Season 1			
Nr. of postpaid subs	<input type="text"/>	<input type="text"/>	Nr. of prepaid subs	<input type="text"/>	Postpaid subscriptions
Opening charge:	<input type="text"/>	<input type="text"/>	Opening charge:	<input type="text"/>	Prepaid subscriptions
Monthly charge:	<input type="text"/>	<input type="text"/>			Postpaid ARPU
Calls (€/min):			07:00-17:00	<input type="text"/>	Prepaid ARPU
	07:00-17:00	<input type="text"/>	Other	<input type="text"/>	
	Other	<input type="text"/>	Roaming	<input type="text"/>	
	Roaming	<input type="text"/>			
Estimated nr. of postpaid subs	<input type="text"/>	<input type="text"/>	Nr. of prepaid subs	<input type="text"/>	
Average min/subs/year: 07:00-17:00	<input type="text"/>	<input type="text"/>	Average min/subs/year: 07:00-17:00	<input type="text"/>	
Average min/subs/year: other	<input type="text"/>	<input type="text"/>	Average min/subs/year: other	<input type="text"/>	
Revenues	<input type="text"/>	<input type="text"/>	Revenues	<input type="text"/>	
Estimated revenues	<input type="text"/>	<input type="text"/>	Estimated revenues	<input type="text"/>	



# The Mobile Operator Business Game: Decision screens (2/3)

Management Informations System	<b>Offers for Consumers</b>	Offers for Corporations	Offers for Content Providers	Marketing	Research and Development
Roaming	Network Maintenance	Purchasing	Human Relations	Financing	Cash Flow Statement

  

Voice Subscriptions	<b>Data Services</b>	Person to Person Services
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### Offers for consumers

Data services	Graphs																																																																			
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# The Mobile Operator Business Game: Decision screens (3/3)

Management Informations System	<b>Offers for Consumers</b>	Offers for Corporations	Offers for Content Providers	Marketing	Research and Development
Roaming	Network Maintenance	Purchasing	Human Relations	Financing	Cash Flow Statement
Voice Subscriptions	Data Services	<b>Person to Person Services</b>			
<b>Offers for consumers</b>					
<b>Person to person services</b>				<b>Graphs</b>	
	<b>Home</b>		<b>Roaming</b>		
	<b>Season 2</b>	<b>Season 1</b>	<b>Season 2</b>	<b>Season 1</b>	SMS users
SMS (€/message)					MMS users
MMS (€/message)					SMS ARPU
Nr. of SMS users					MMS ARPU
Nr. of MMS users					
Nr. of SMS's/user/month					
Nr. of MMS's/user/month					
Estimated nr. of SMS users					
Estimated nr. of MMS users					
Estimated nr. of SMS's/user/month					
Estimated nr. of MMS's/user/month					
Revenues					
Estimated revenues					



# Comparison: Pedagogical Power

	MOB (now)	MOB (ideal)	SimCom	Simobiz
Target user group	Students	Students	Businesses	Students
Target session length	1 day	1-3 days	1-2 days	5 days
Number of simulation periods/ seasons (1 year)	10	10	?	8
Number of teams	3-6	3-6	3-10	3
Team size	2-4	2-4	1-5	3-7
Remote play option	No	No	No	Yes
Scenario description/ story	No	Yes	Yes	Yes
Player instructions	No	Yes	Yes	Yes
Graphical presentation between the sessions	No	Yes	Yes	No
Reports	No	Yes	Yes	Yes
Combined lectures	No	Yes	No	Yes
UI: estimation and what-if analysis	No	Yes	Yes	No
UI: previous years decisions on-screen	No	Yes	Yes	No
UI: previous years P&L on-screen	Yes	Yes	Yes	No
Trial session	No	No	No	Yes
Modularity (playing certain parts of the game)	No	No	No	Yes
Usability and userfrienlyness	bad	good	good	bad



# Comparison: Substance Scope

	MOB (now)	MOB (ideal)	SimCom	Simobiz
Roaming	No	Yes	No	No
Mobile content business	No	Yes	No	No
Fixed telephony business	No	No	Yes	No
Broadband Internet connections	No	No	Yes	No
Mobile voice and data businesses	Yes	Yes	Yes	Yes
Different pricing schemes	Yes	Yes	No	No
Subscription plans	No	No	No	Yes
Postpaid vs. prepaid	Yes	Yes	No ?	No ?
Consumer vs. corporate	Yes	Yes	Yes	Yes
Geographical zones	No	?	No	Yes
Messaging (e.g. SMS and MMS)	Yes	Yes	No	No
Handset business and subsidies	No	Yes	Yes	Yes
WLAN	Yes	Yes	No	No
MVNO	No	Yes	No	Yes
Free airtime for new customers	No	?	Yes	No
UMTS licensing and auction	No	No	No	Yes



# Comparison: Model vs. Real World (1/2)

		Model	Real World
<b>Number of Teams</b>	All	All the games are built to support at least 3 teams. MOB 3-6, Simobiz 3, and SimCom 3-10.	The restriction to 3 teams (operators) in Simobiz is probably a good average. But, this do not have to be the case.
<b>Roaming</b>	MOB (ideal)	The roaming issue is not covered in any of the current games.	The roaming issue is a very important part of mobile operator business (e.g. an important reason why GSM has become so widely used).
<b>Mobile Content Business</b>	MOB (ideal)	Mobile content business not implemented in any of the current games.	The mobile content business will become more and more important in the future.
<b>Different Pricing Schemes for Data</b>	MOB	For WLAN and cellular data there are three different pricing schemes in MOB; block, usage-based (MB), and flat. The same pricing scheme for both though!	Operators use different kinds of pricing schemes. Pricing is a very important tool for success. In real world there is also e.g. usage-based pricing based on time (min).
<b>Subscriptions plans</b>	Simobiz	Different subscriptions plans with different services.	This is also the case in the real world, but the way it was modelled in Simobiz was a quite simplistic.
<b>Postpaid vs. Prepaid</b>	All	Both postpaid and prepaid subscriptions are included in all the current games.	Prepaid is very important in many regions, especially for young people. In Finland prepaid has not been a success yet.
<b>Geographical Zones</b>	Simobiz	2 different geographical zones or areas (cities and rural), makes the model more realistic.	Different geographical areas need to be carefully considered by mobile operators (e.g. sites for BTS's)



# Comparison: Model vs. Real World (2/2)

		<b>Model</b>	<b>Real World</b>
<b>Messaging</b>	SimCom	Messaging not considered as a separate item.	Messaging (e.g. SMS and MMS) is a very important part of mobile operators business and revenues.
<b>MVNO</b>	Simobiz	The MVNO business model was considered only in Simobiz.	MVNO's are becoming a big part of today's mobile operator business. This is largely because deregulation and open competition.
<b>UMTS auctions</b>	Simobiz	UMTS licensing and auctions is considered only in Simobiz.	UMTS auctions has been a big part of current mobile operator business and still is in countries where the licenses has not been granted yet.
<b>Handset business</b>	Simobiz, SimCom	Handset subsidies were considered. In Simobiz there was also the chance for players to choose which handsets to sell.	Handset subsidies are not part of the Finnish market, at least not yet. But, in other countries this is broadly used.
<b>Free airtime</b>	SimCom	In SimCom free airtime for new customers was considered.	Free airtime for new customers widely used, at least in Finland (e.g. up to 150 €, 10 €/ month)
<b>Fixed network</b>	SimCom	SimCom is the only out of the three games that consider fixed networks, both fixed telephony and broadband Internet connections.	At least in Finland the fixed part and mobile part is becoming closer and closer to each other.
<b>Enhancements in Technologies</b>	MOB, Simobiz	Enhancements in technologies is not considered in SimCom, but it is in MOB and Simobiz (EDGE, WCDMA, etc.)	The enhancements in technologies is a very important part of the mobile operator business because of future strategies etc.



# Conclusions & Perspectives

- Mobile communications market is a complex non-linear adaptive system
- Modelling this system in a reasonable way can be very hard
- MOB: much yet to be done!
  - usability
  - roaming, mobile content, MVNO, and handset businesses
  - other features
  - documentation (player instructions and scenario description)