



Business Models in Wireless Internet Service Engineering

Päivi Kallio

3rd Software Architecture Seminar, 3-4 October 2002, Oulu, Finland

Päivi Kallio © Software Architectures Group 2002



Introduction

- Providers of the Third Generation (3G) services will reach revenues of \$322 billion by 2010 = a rise of over \$ 300 billion compared to the current situation (UMTS, 2001)
- New wireless technologies will enable new kinds of mobile services and challenge the traditional value chains
- 3G technologies will also create enormous business opportunities

Business model (BM) is “an architecture for the service and information flows, including a description of the various business actors, their roles, sources of revenues and links, interfaces and interaction between all the actors involved in the multifunctional environment of 3G” (modified from Timmers, 1998).

Aspects affecting the business models

- High-level understanding of the overall goals
- Structure
- Processes
- Revenues
- Legal issues
- Technology

(Pallon & Arbanowski, 2002)

Definition of Service

- In this context by service is meant:

“ ... intangible activities whose buying takes place in an interaction process aimed at creating customer satisfaction...”

(modified from Kasper et al., 1999)

Roles of the companies in wireless business

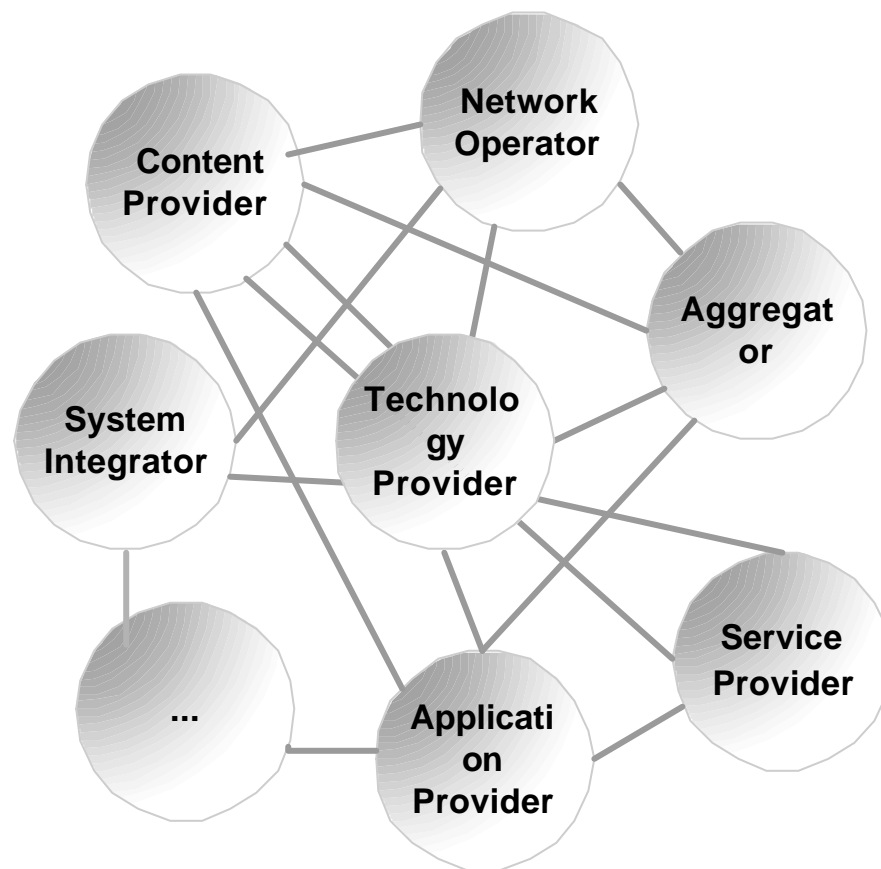


Figure 1: Mobile value web

Roles of the wireless companies

Service provider

- Delivers a managed service to business customers
 - Application Service Provider
 - Mobile middleware provider
 - Internet Service Provider

Network operators

- Sell network capacity to consumers via service providers

Content providers

- Develop original content or aggregate content that others have created.

Technology providers

Accounting and billing of Wireless Services

- Accounting is " ... the process of keeping track of a user's activity while accessing the network resources, ... "
- Accounting data is used for ..., billing, ...

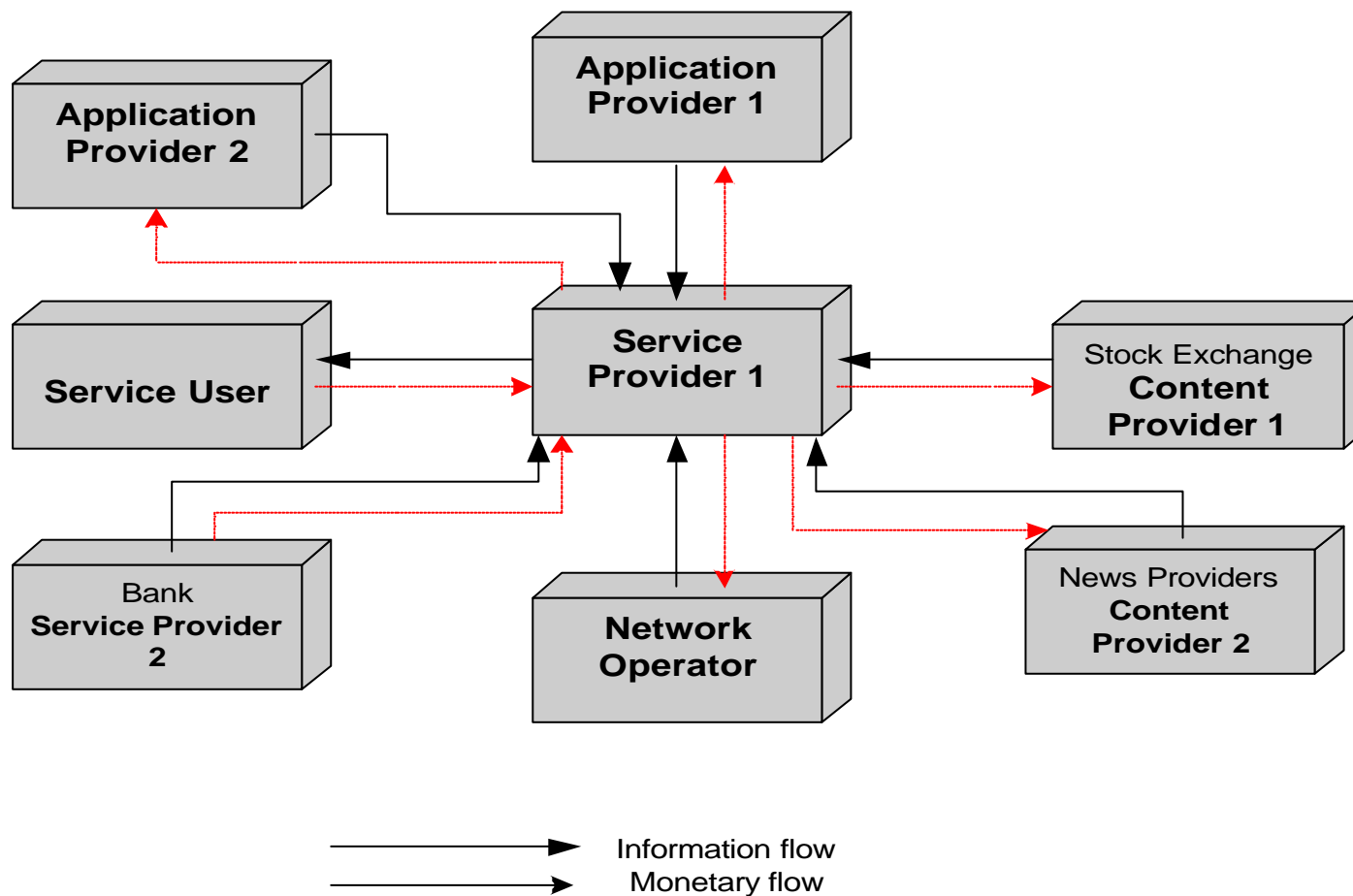
Components of accounting and billing:

- Billing mediation server
- Rating engine
- Billing
- Accounting agents

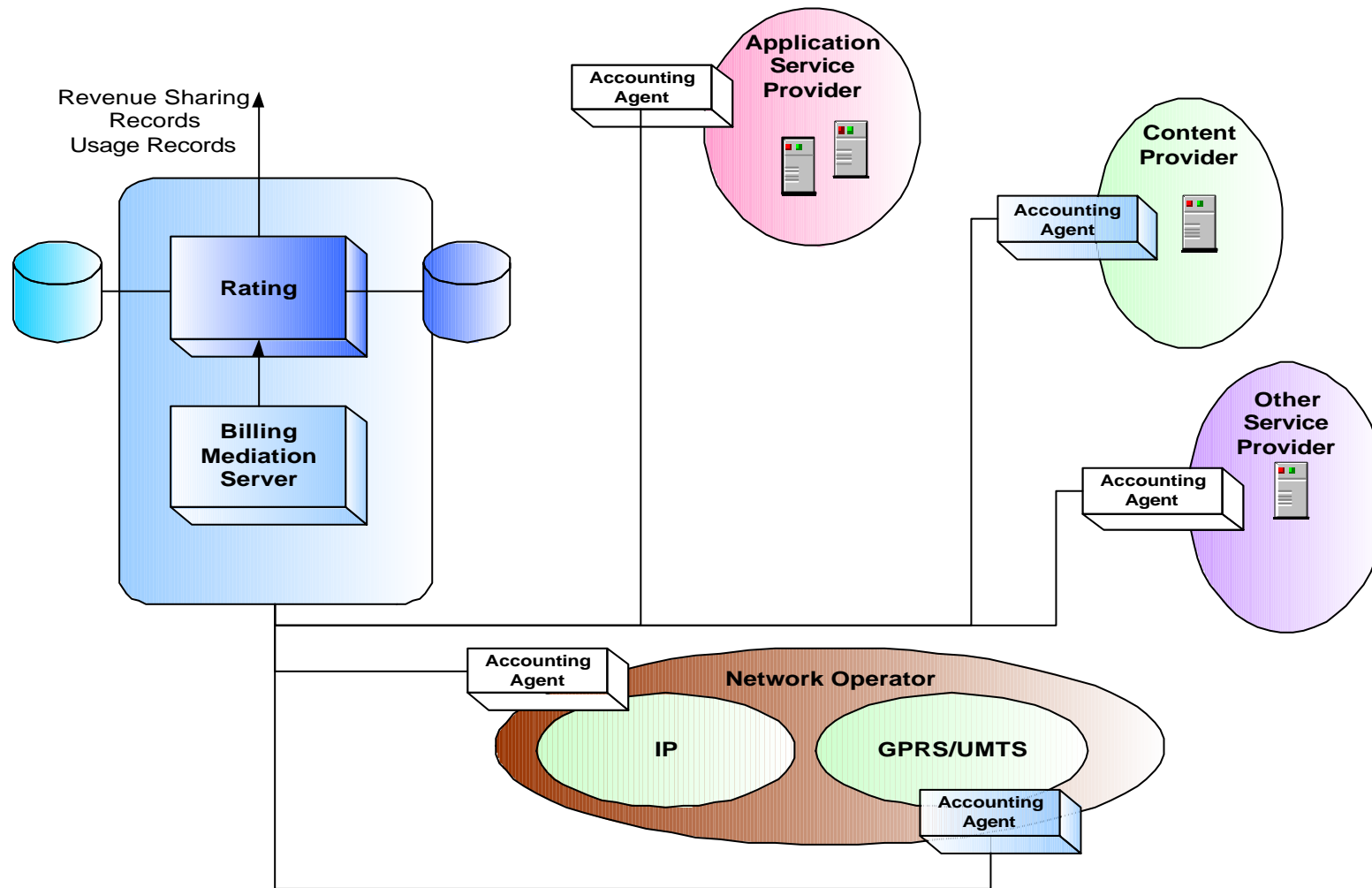
Pilot Services: Service 1

- A wireless interface to the Stocks/News trading on line system based on HTTP protocol
- A web site that manages Stock Quotes, News Info and Portfolio
- Allow the end user to monitor Stocks and News in real time
- End user can also create his/her own portfolio.
- Effort is to interface the current environment to the wireless devices

Framework of the Service 1's business model



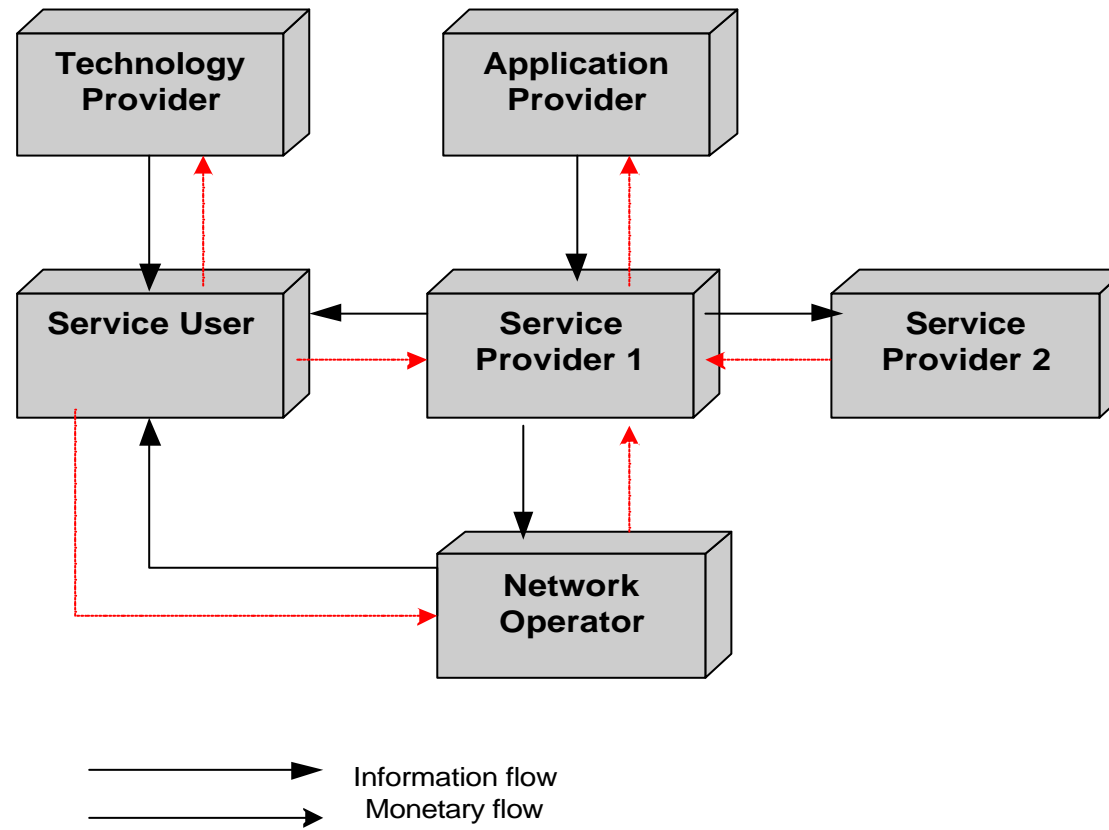
Billing Context in Service 1



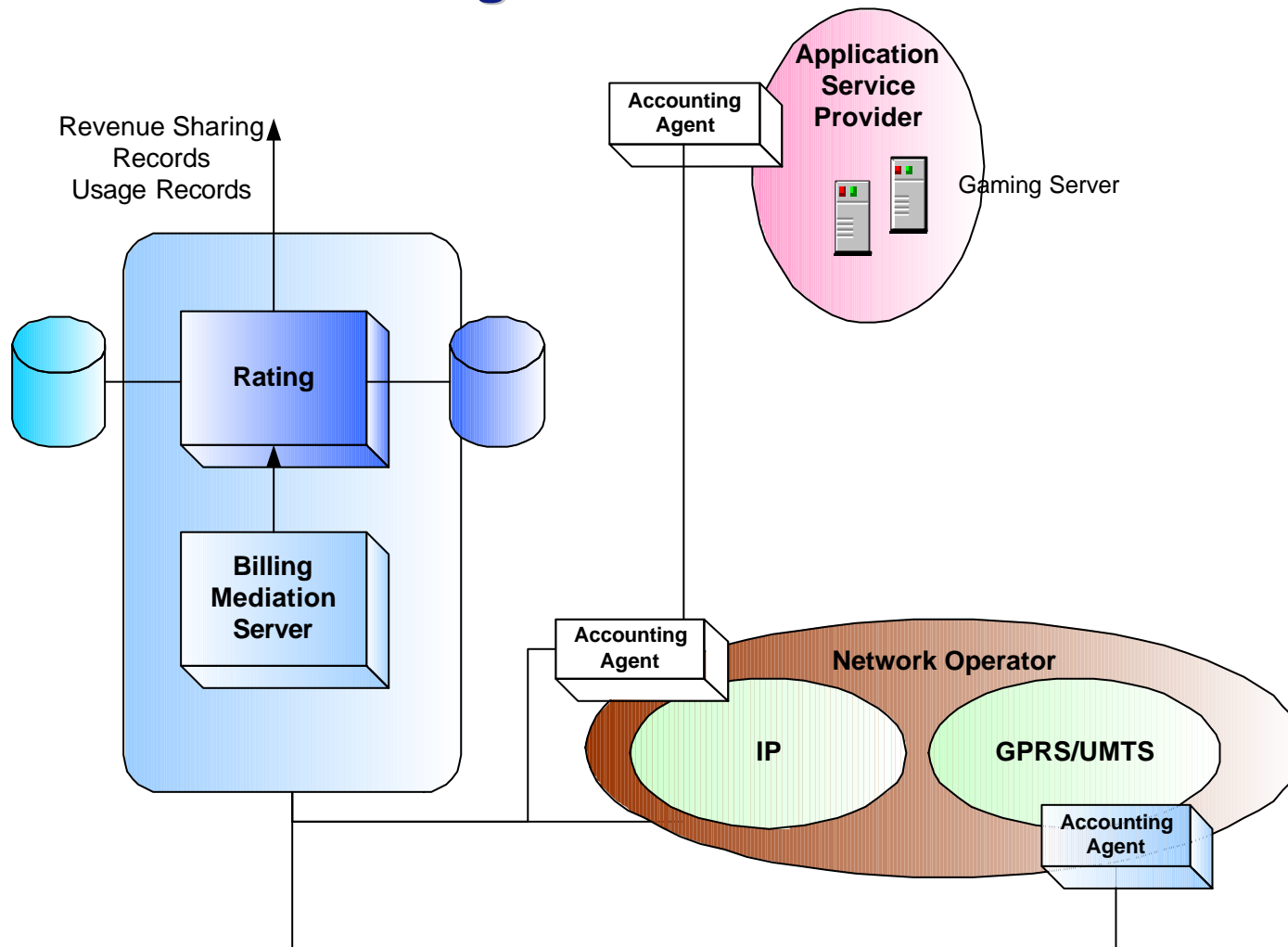
Service 2

- Multi-player game that is known as the “Labyrinth Game”
- An arcade game where multiple players move in a big labyrinth
- The client side is implemented using MIDP (Java MIDlets)
 - GPRS/UMTS connection is used on terminal side clients
 - J2EE is used on server side J2EE clients
- User can download the game "on the air" through a serial cable or infrared connection.

Framework of the Service 2's business model



Billing Context in Service 2



Conclusions

- 3G creates enormous business opportunities
- Using these opportunities requires defining a rational business model
- Roles of the companies and possible sources of revenues are still unclear
- Integrator of the services must see the total functionality
- Wireless business models has to be dynamic as the roles may change
- Network capacity and disconnection of services are at the moment risks

Future problems to solve

- Differences between the terminals
- Managing and financing the complex and expensive service infrastructure
- Lack of open standards
- Service roaming
- Issues concerning privacy and security
- How how will the return be divided ?
- People are not willing to pay for something what has been free, cf. Internet content commercial products
- Contracts and legal affairs

Further reading

Kallio, P. Business Models in Wireless Internet Service Engineering. Proceedings of the 3rd ICSE Workshop on Web Engineering, Orlando, Florida, 2002. Pp. 57-64.

Kallio, P., Cortese, G., Tiella, R., Zorer, A. 2002a. Accounting and Billing of Wireless Internet Services in the Third Generation Networks. MobIMod'2002 Workshop on Conceptual Modelling Approaches to Mobile Information Systems Development (Tampere, October, 2002). 13 p.

Kallio, P., Matilainen, A., Boggio, D., De Matteis, G. 2002b. Wireless Internet Service Development in Multi-vendor Environment. Submitted to the 1st International Conference on Mobile and Ubiquitous Multimedia (MUM2002).

Kasper, H., Helsdingen, P., de Vries jr, W., 1999. Services Marketing Management. John Wiley & Sons. 750 p.

Pallon, P., Arbanowski, S. 2002. Business Models in the Future Wireless World. WWRF WG2 White Paper- Work-In-Progress version. 28 p.

Timmers, P., 1998. Business Models for Electronic Markets. On-line at:
[http://www.electronicmarkets.org/netacademy/publications.nsf/all_pk/949/\\$file/v8n2_timmers.pdf?OpenElement&id=949](http://www.electronicmarkets.org/netacademy/publications.nsf/all_pk/949/$file/v8n2_timmers.pdf?OpenElement&id=949). 6 p.

UMTS Forum, 2000. Shaping the Mobile Multimedia Future- An Extended Vision from the UMTS Forum. On-line at: <http://www.umts-forum.org/reports/report10.pdf>. 113 p.

More Information:



Päivi Kallio

Tel. +358 400 963 214
email: Paivi.Kallio@vtt.fi