Mobile commerce in the Czech Republic

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Content of the presentation

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2. Determinants of m-commerce
3. Technologies (history, overview)
4. M-commerce applications
5. M-business
6. M-marketing
7. M-tagging
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10. Market structure in Czech Republic
11. M-commerce in Czech Republic

Mobile commerce

- Set of processes which result in financial obligation and where at least one part is executed via mobile technologies

Mobile technologies

- Infrastructure operated by mobile network carriers

M-commerce applications

- Content services (sending of messages, dictionaries, …)
- Messaging – sending SMS/MMS to customers
- Remote Access/Mobile Office (access to company´s intranet)
- Emergency Services (112, 911)
- Video and audio data – usually by 3G services
- Entertainment – games, competitions, ringtones
- Tailing – purchasing or reservation of tickets (Mobitickets)
- Financial Services – banking and broking
- Payment – m-payments
- Navigation – Global positioning system
- Telemetry – automatic sending of data between machines
- Marketing services – SMS inquiries, company´s logos, collecting of loyalty bonuses via mobile phone

Determinants of m-commerce volume

- Technlogies implemented
- Mobile phone penetration
- Services offered

Technology - development

- Zero generation
- First generation
- Second generation
- Third generation
- Fourth generation

Zero generation

- Since late 50ties: First radio signal nets
  - Eg. in 1958 in Germany so called A-Netz
- Analogue
- Low quality
- Low security
- No international standard

First generation

- Early 80ties NMT450
- 1986: NMT900
- Voice only (except of Poland and Russia)
- Still analogue
- End user devices almost 1 kg
- Small monochromatic displays

First generation

Motorol Dyna TAC 8000X

Second generation

- CDMA standard since 1990 in USA
- GSM standard in Europe since 1991
  - Frequency 900 MHz and 1800 MHz
  - Smooth handover
  - international standard
  - voice and data
  - speed of 14,4 kbps

2.5 generation

- Enhancement of already existing GSM network
- Data transmission of higher speeds
  - 1997: GPRS (57 kbps)
  - HSCSD (171 kbps)
  - EDGE (384 kpbs)

Third generation

- Since 2001 (first in Japan)
- New network (built usually next to GSM network)
- Speeds typically up to 2 Mbps, theoretically up to 10 Mbps

Third generation

- Much faster data transmission than before
- Therefore new services possible
- Devices of higher performance
- New services involve multiply parties

Third generation deployment problems

- High price for licences
- Low range (frequency usually 2100 MHz)
  - High initial costs
- Uncertainty of consumer acceptance
  - Uncertainty of killer applications

Fourth generation

- Currently are standards under development
- At least 10 times greater capacity
- Higher speeds (100 Mbps stationary conditions, 20 Mbps at 100 mph)

Technologies available in CR

NMT	analogue, voice only
GSM	14,4 kbps
GPRS	57,6 kbps
HSCSD	171,2 kbps
EDGE	384 kbps
CDMA2000	2048 kbps
UMTS	1920 kbps

Penetration

- Penetration is one of three determinants of m-commerce
- Together with density of population

$$\text{determine ratio:} \quad \frac{\textbf{number of customers}}{\textbf{infrastructure costs}}$$

M-commerce applications (characteristics)

1. Low initial costs
2. Easy of use
3. Immediate use
4. Clear identification
5. Localization
6. Penetration
7. Display

M-business applications (forms)

1. m-Presence
2. m-Payment
   - m-Banking
3. m-Purchasing
4. m-Procurement
5. m-Shop
6. m-Auction
7. m-Care
8. m-Marketing

M-marketing (characteristics)

- Form of direct marketing
- Still in its beginning
- Any form of marketing activity via mobile phone

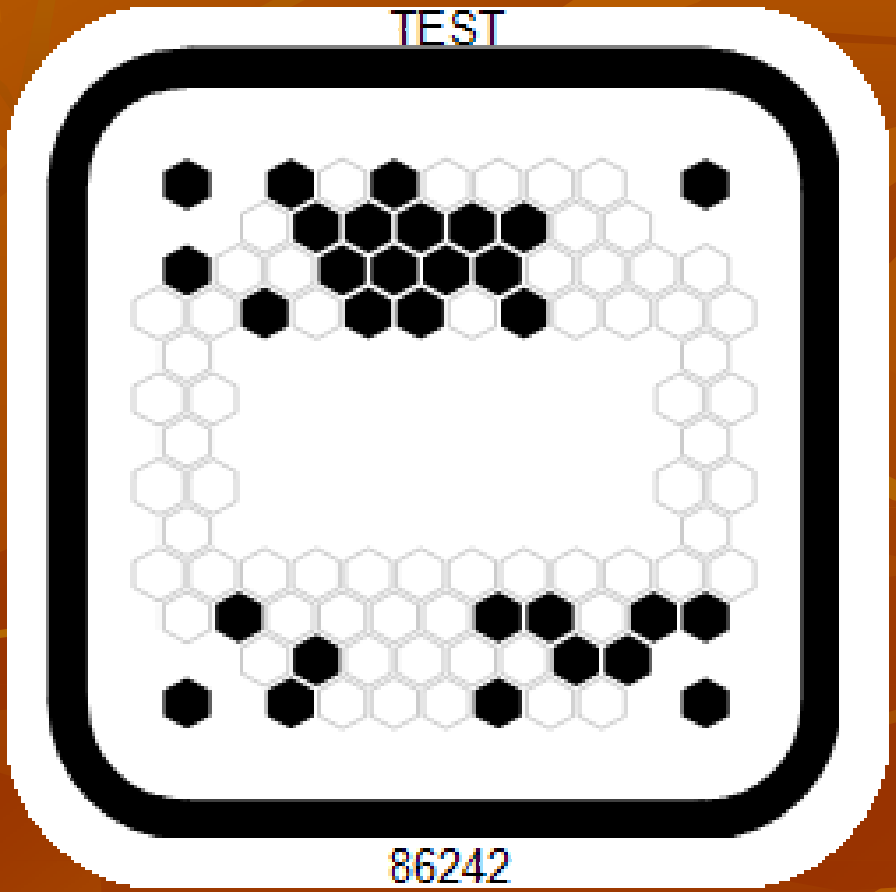
M-marketing (forms)

1. SMS messages
2. SMS competitions, voting, inquiries
3. Advergaming (via SMS, WAP, Java games)
4. Logos, ringtones
5. Bluecasting, cell broadcasting
6. Mobile tagging

Mobile Tagging

- A product bears a tagg
- User takes a picture of the tagg by mobile phone
- Application in mobile phone translates the picture into unique ID code, connects to server and provides link to webpages (or wappages) of product in question

Mobile tagging – 2D code



User Acceptance

- Surveys
  - Simple statistical methods (frequencies)
  - Structural modelling

Nokia´s survey (2002)

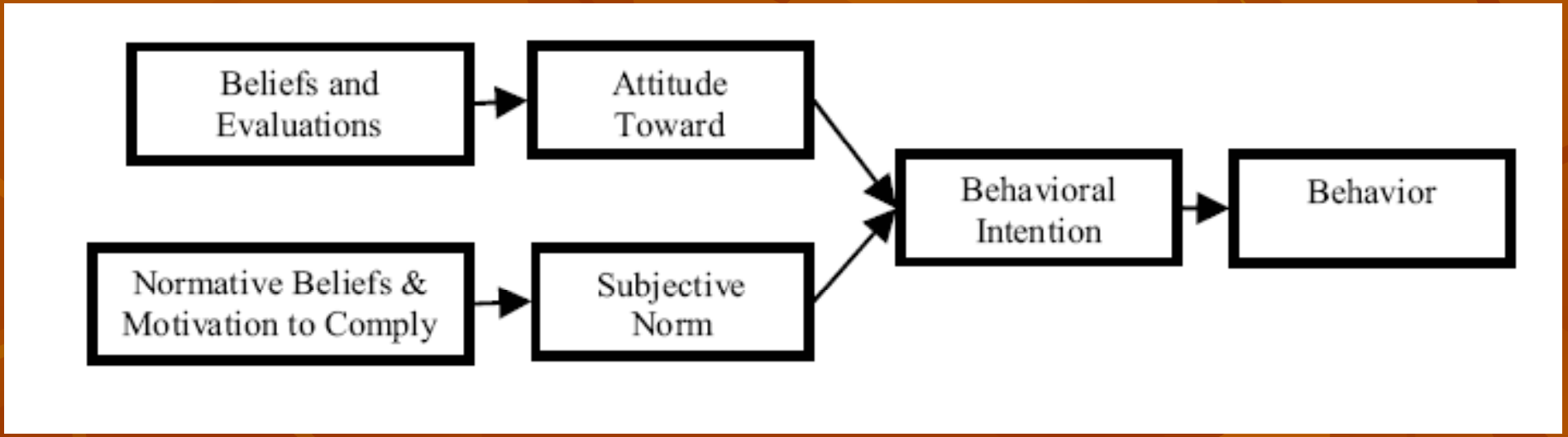
- 88% stated that they would be receptive to vouchers (for nearby shop) via push messages
- 31% would welcome such voucher
- 76% would find it acceptable if the programs they viewed were punctuated with very short ads
- 51% would not see advertising as an intrusion if it were presented to them in the same way as on television
- 86% agreed that m-marketing would be even more widely embraced if seen as beneficial to the end user

Nokia´s survey - conclusion

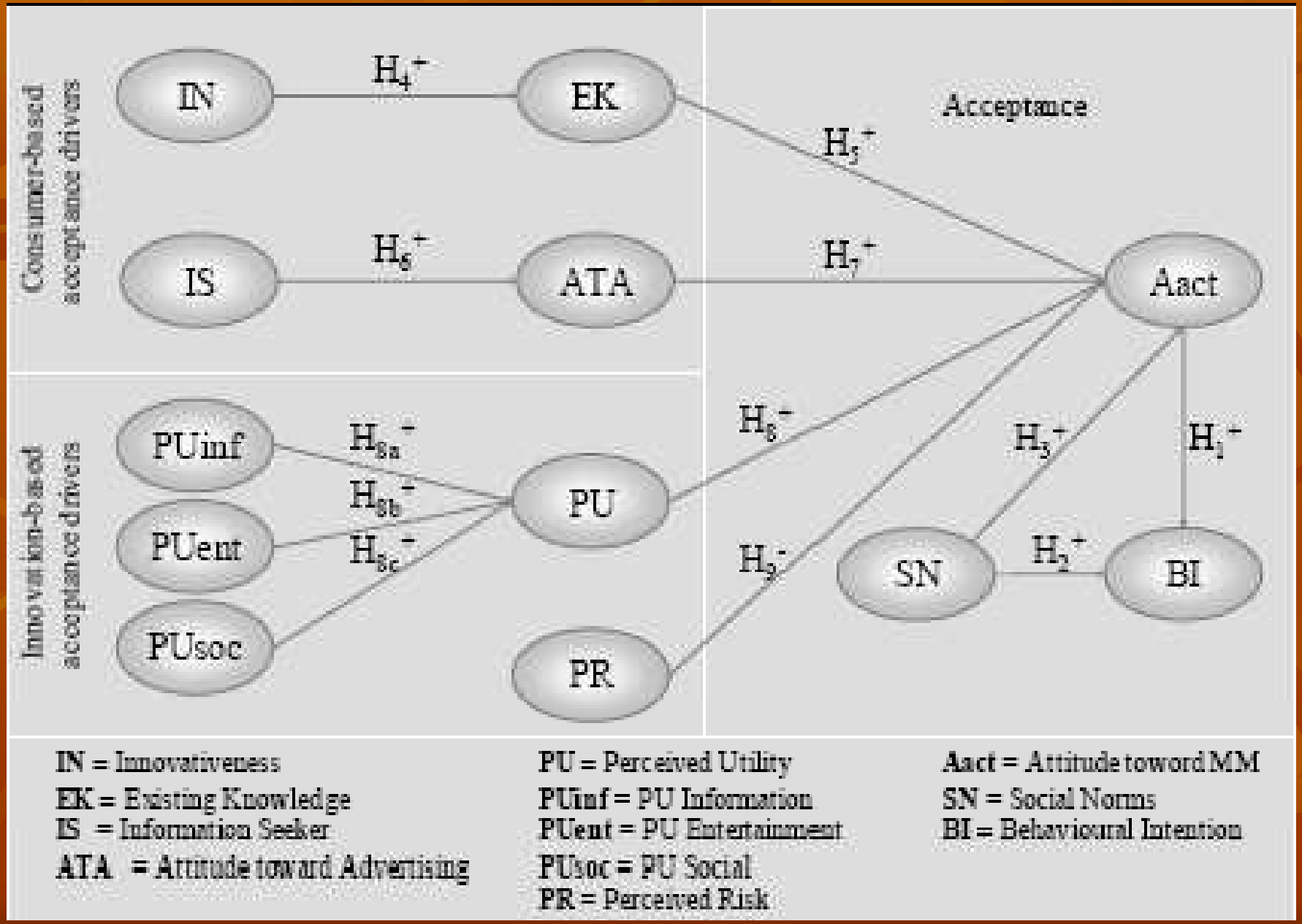
- Choice - being able to decide whether or not to receive messages
- Control - being able to bypass sale messages easily
- Customization - being able to filter the types of messages received
- Mutual benefit - getting something back in return, i.e., a reduction in the cost of services

User acceptance of m-marketing (structural modelling)

- Studied with the use of Theory of Reasoned Action



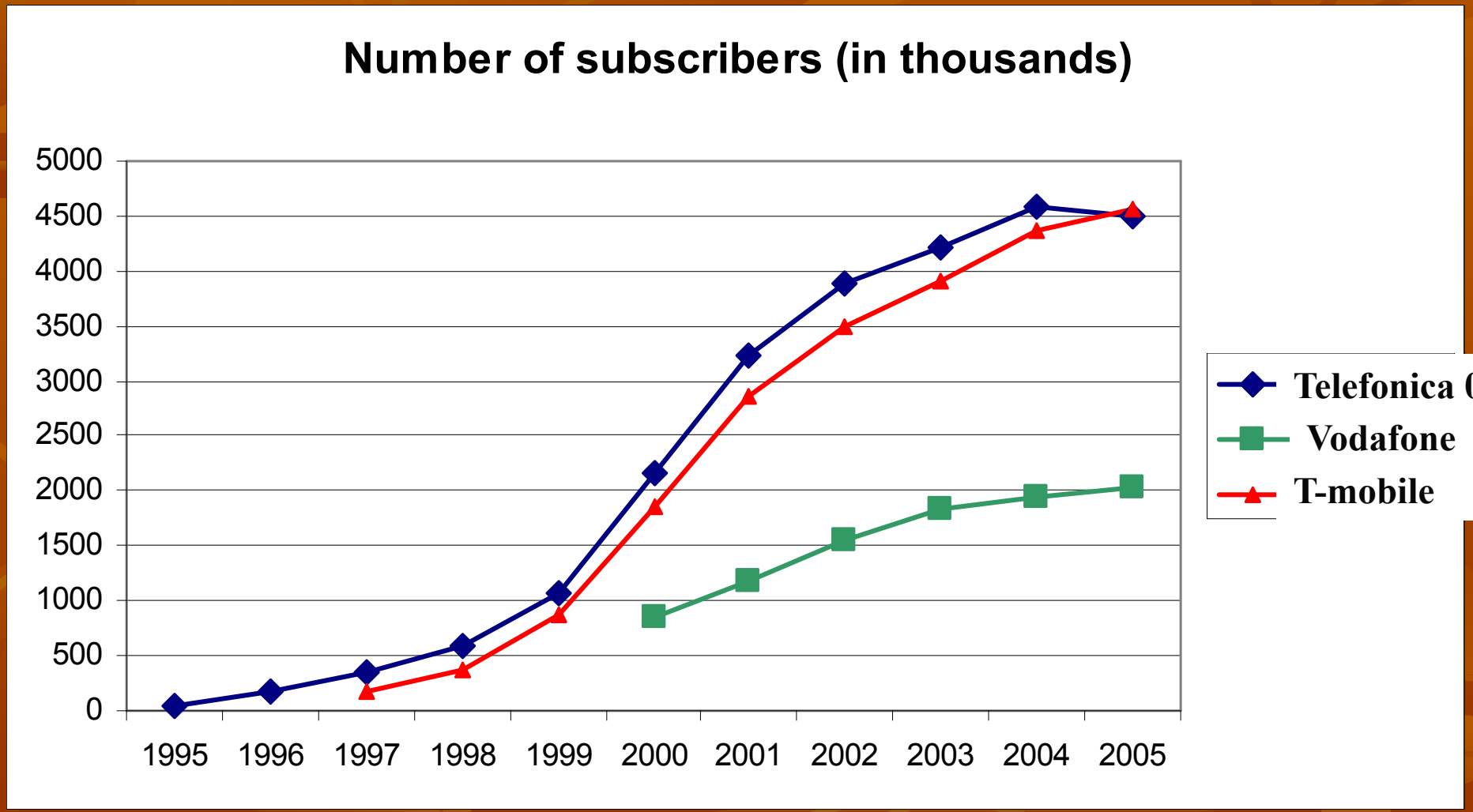
TRA model in use



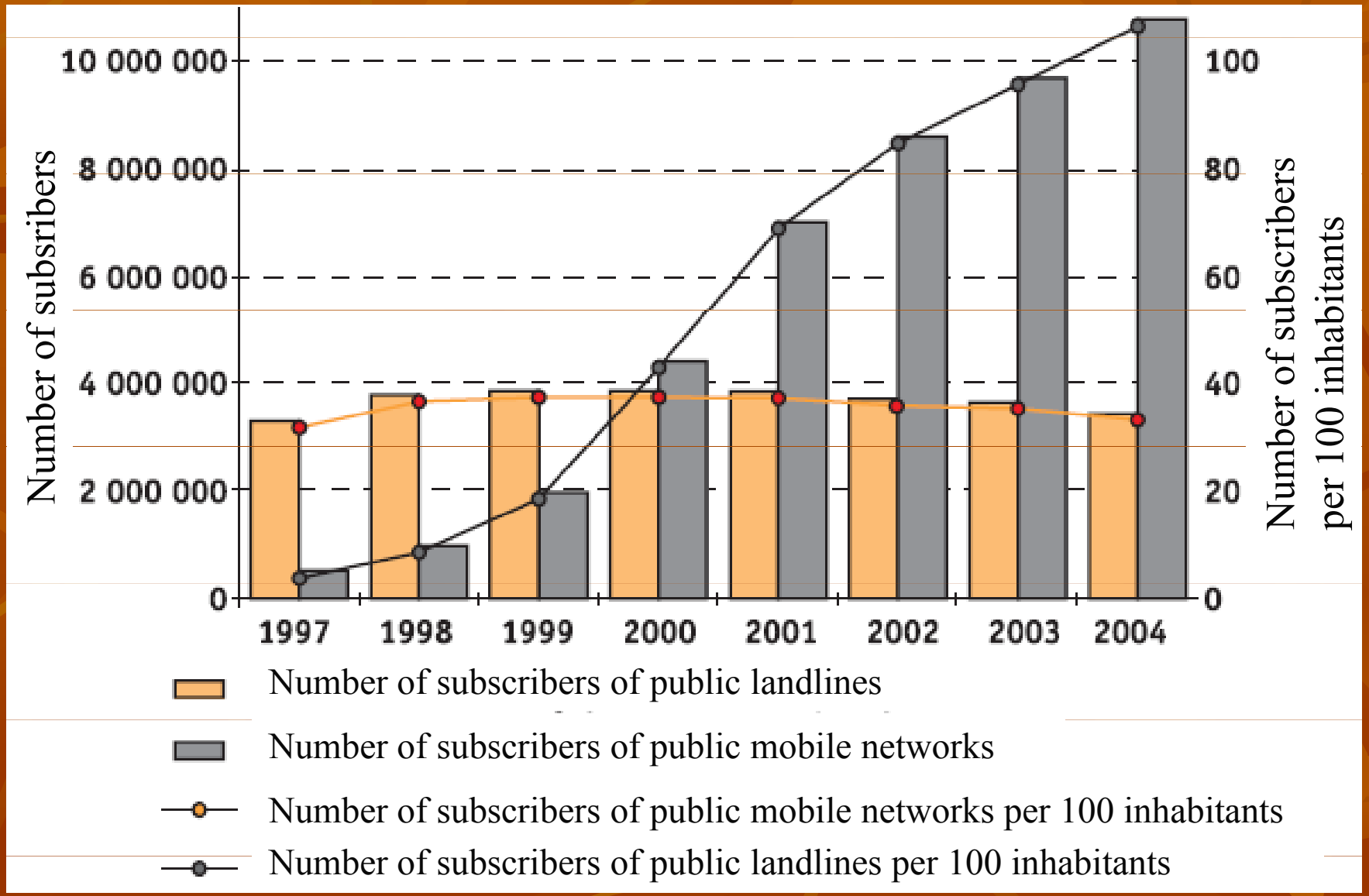
TRA model in use

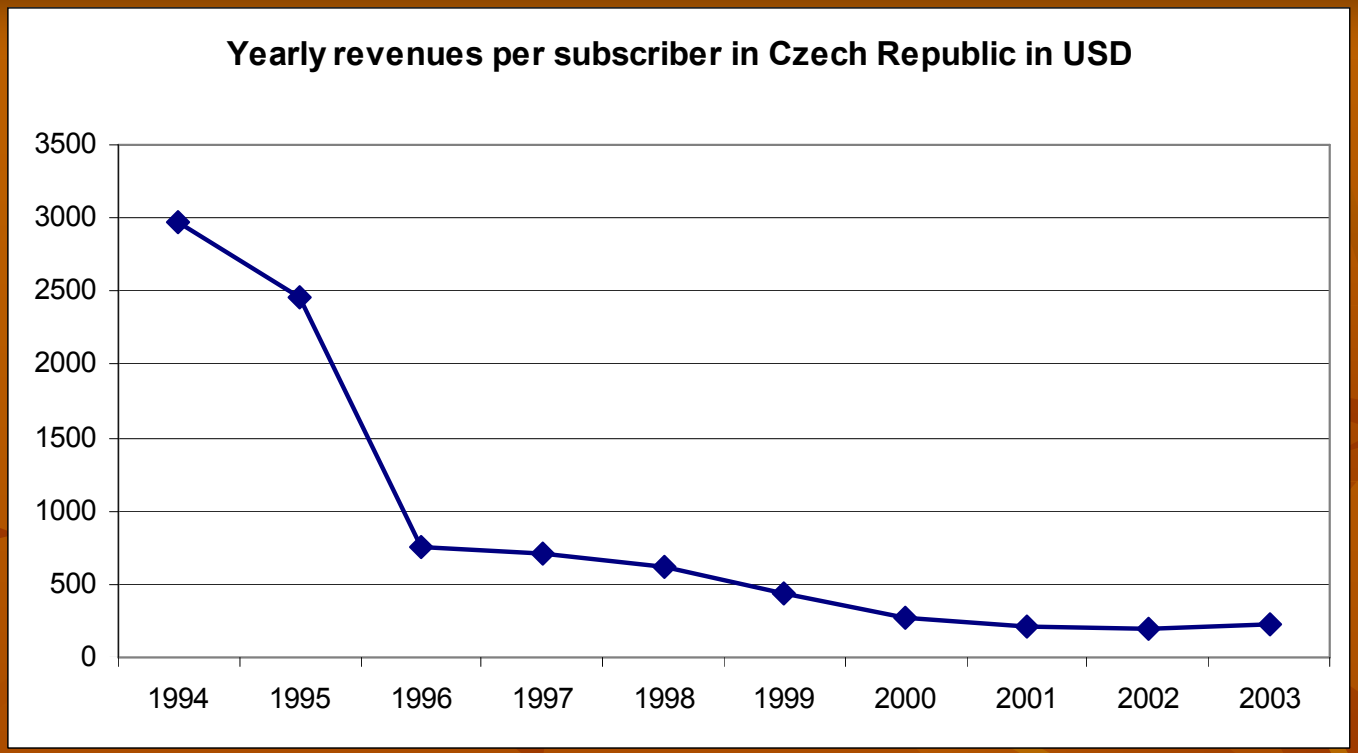
Item	
IN1	Usually I am among of the first to try out a new product.
IN2	Often I try new products before my friends do.
IN3	Generally, I enjoy buying new products.
EK1	I have a profound knowledge about mobile communications.
EK2	In comparison to my circle of friends I am an expert in mobile communications.
EK5	In my circle of friends I am usually the first who knows about the latest mobile phones.
IS3	I enjoy reading different advertising for the sake of comparison.
IS4	I tend to read a lot of different advertising just for the sake of a change of pace.
ATA1	Generally I find advertising a good thing.
ATA2	I like advertising.
PU1inf	Through advertising messages via the mobile phone I receive timely information.
PU2inf	Through advertising messages via the mobile phone I receive exclusive information.

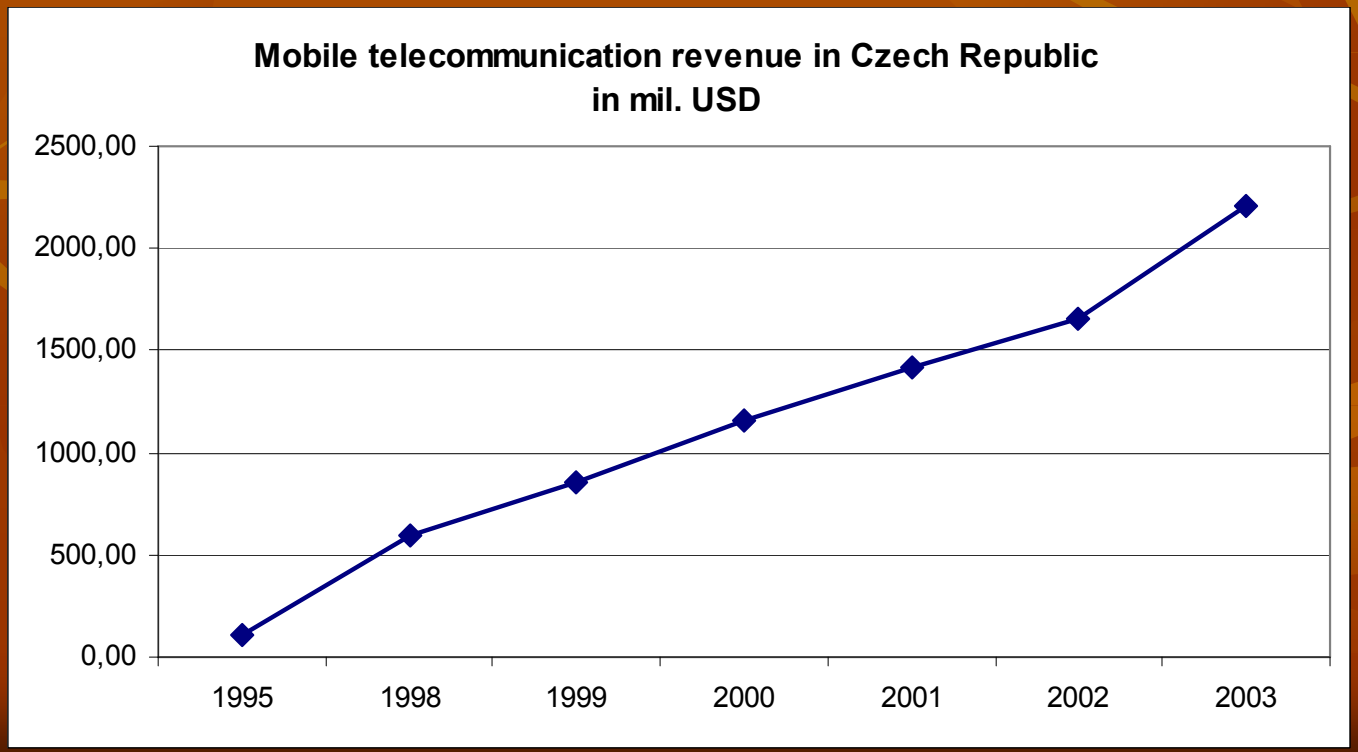
Penetration in CR



Mobiles vs. Landlines




Yearly revenues per subscriber in Czech Republic in USD
3500
3000
2500
2000
1500
1000
500
0
1994
1995
1996
1997
1998
1999
2000
2001
2002
2003


Mobile telecommunication revenue in Czech Republic
in mil. USD
2500,00
2000,00
1500,00
1000,00
500,00
0,00
1995
1998
1999
2000
2001
2002
2003

Country	1994	1999	2003	Country	1994	1999	2003
Australia	881	594	429	Luxembourg	960	387	359
Austria	..	515	646	Mexico	1570	199	197
Belgium	1932	502	460	Netherlands	1543	380	463
Canada	703	466	432	New Zealand	412	312	332
Czech Republic	2965	437	227	Norway	488	277	381
Denmark	462	378	371	Poland	..	363	208
Finland	2995	485	533	Portugal	1176	332	395
France	875	310	358	Slovak Republic	..	19	195
Germany	1129	701	353	Spain	842	423	384
Greece	215	402	392	Sweden	407	299	285
Hungary	1021	477	254	Switzerland	1007	546	535
Iceland	428	267	402	Turkey	353	86	114
Ireland	..	486	458	United Kingdom	0	328	319
Italy	886	292	331	United States	630	583	554
Japan	3132	1056	932	OECD	917	537	454
Korea	1232	311	396				

Market structure in CR

Network Carrier	Number of active SIM cards (2007)	ARPU 04/2007	EBITDA (billions CZK) 06/2006	Coverage of population
Telef. O_2	4 890 000	551	10,4 (-2%)	99 %
Vodafone	2 530 000	660	-0,46 (-23,4%)	98,4 %
T–Mobile	5 140 000	492	9,67 (+8,3%)	99 %

Active SIM cards total: 12 560 000 (12/2007)

Population est.: 10 228 744 (7/2007 est.)

Penetration: 122 %

Telefónica O_2

- Wholy owned by Český Telecom
- Český Telecom now owned by Telefonica S.A.
- 1991 NMT
- 1995 GSM
- 2000 March HSCSD, October GPRS
- 2004 CDMA

Rebranding of Eurotel

- First name was Česká správa Pošt a telekomunikací (until 1992)
- In 1992 was established new company called SPT Telecom (monopoly in landlines) and Eurotel (monopoly in mobiles), the marketing costs were estimated to be more than 10 mil Kč
- In 2000 was SPT Telecom renamed to Český Telecom, the costs are believed to be about 250 mil Kč
- The last change was of both names (Český Telecom and Eurotel) to Telefónica O2 Czech Republic, the rebranding costs are estimated to be cca 500 mil Kč

T-Mobile

- 1996 Company named Radiomobil obtained GSM license
- 1996 Launched network called Paegas

  = first ever competition on Czech telecommunication market
- 2002 Renaimed to T-Mobile as approx. 60,6 % bought by T-Mobile, wholy owned by Deutsche Telecom AG

Rebranding of Paegas

Company Radiomobil had been operating network called Paegas

In 2002 T-mobile undertook a 3 months marketing campaing valued at 500 – 600 mil Kč

Vodafone

- License since October 1999, network launched in 2000
- 2001 and 2002 World Communication Award as World´s best mobile network carrier
- 2005 Bought by Vodafone Group Plc.

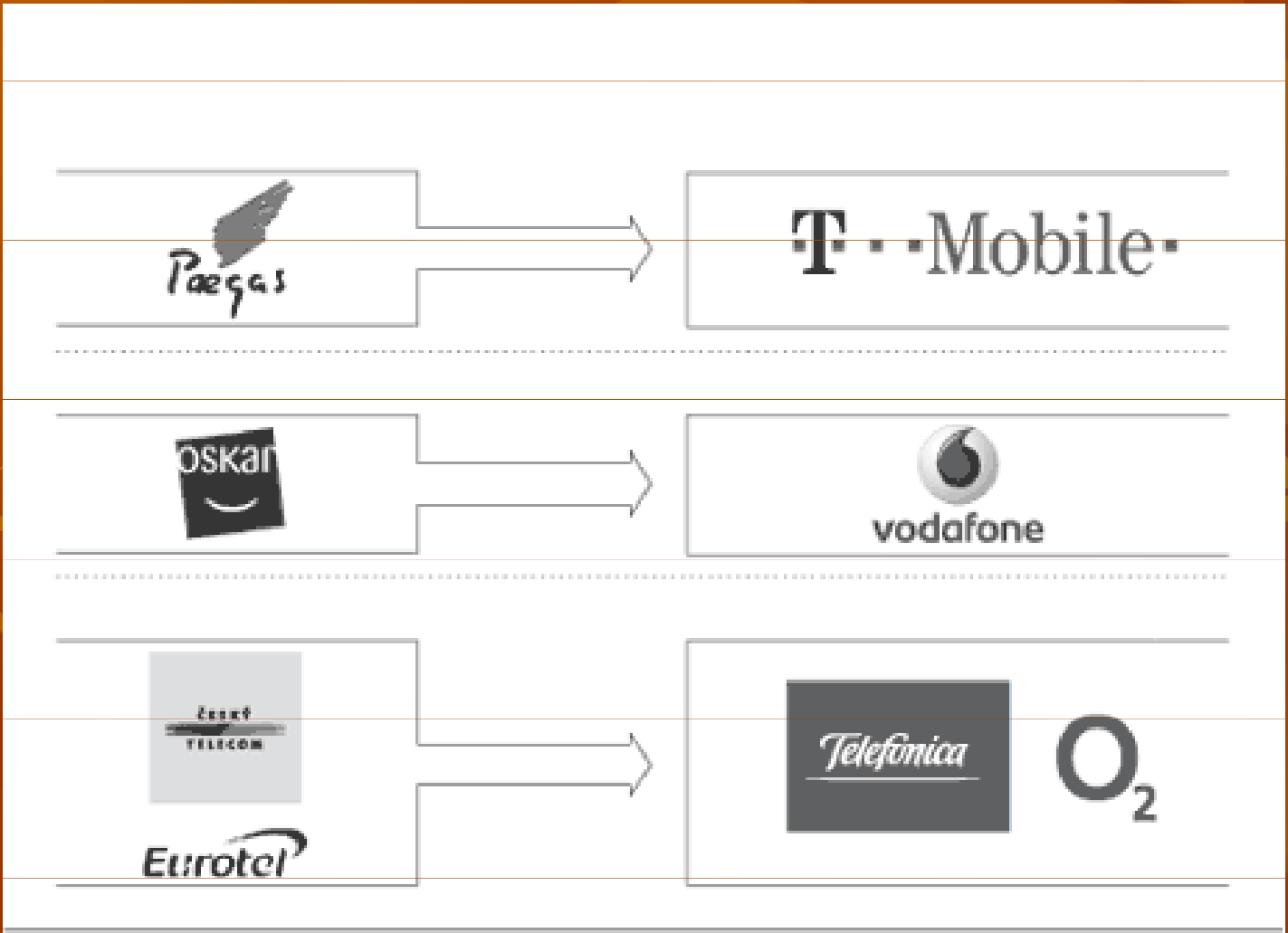
Rebranding of Oskar

As it was bought by Vodafone in 2005, it changed its name to Oskar Vodafone first and 1. 2. 2006 to Vodafone finally

The marketing campaing started in July 2005 and haven´t finished until February 2006

Approximately 500 mil Kč was spent

How they were all changing



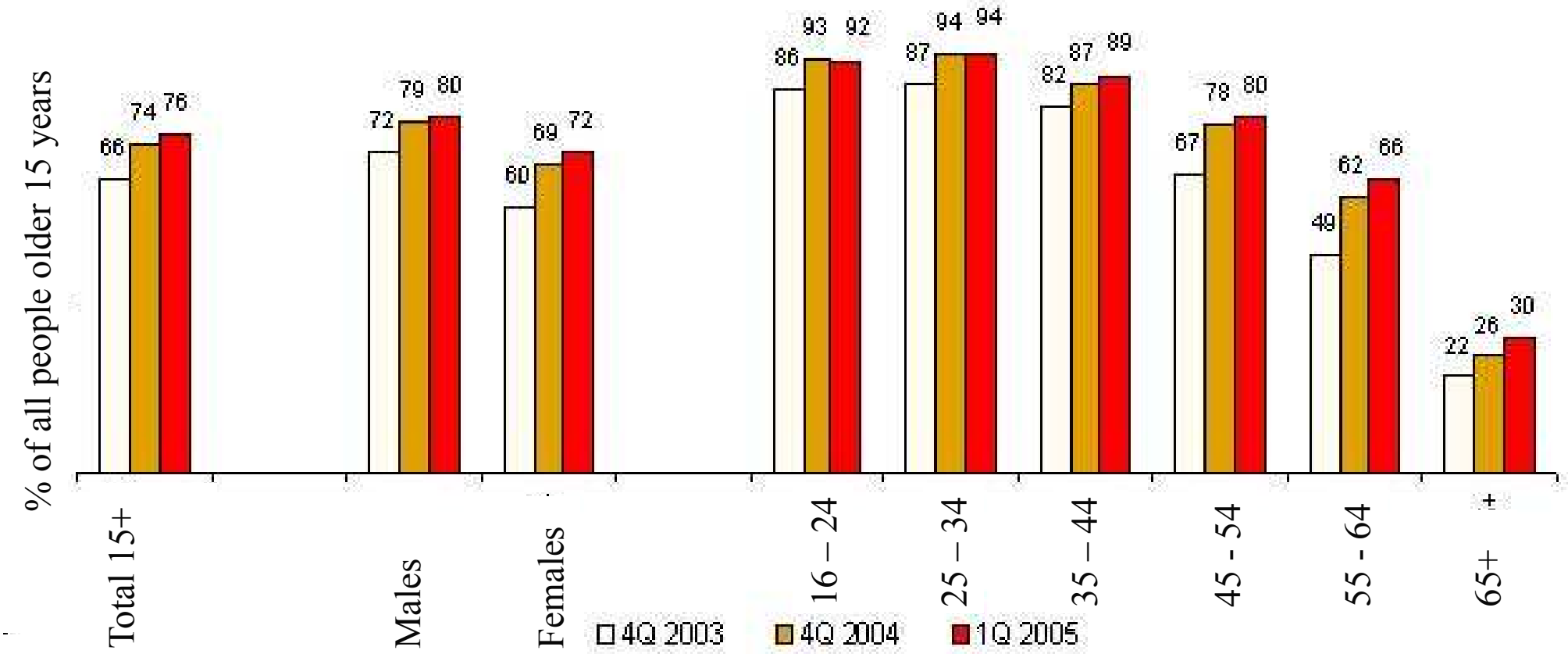
Technologies

Carrier	GSM	GPRS	HSCSD	EDGE	CDMA	UMTS
Telefonica O_2	Yes	Yes	Yes	No	Yes	Yes
Vodafone	Yes	No	Yes	Yes	No	Not operating
T–Mobile	Yes	No	Yes	Yes	No	Yes
Speed (kbps)	14,4	57,6	171,2	384	2048	1920

Competition nowadays at Czech mobile telecommunication market is strong because:

- The real penetration is about 85,5%
  = providers fight for the rest
- The share of prepaid customers is high
  = providers want post-paid
- 3G was launched
  = data services is a way to raise ARPU

Real penetration



How to get new customers while the real penetration is 85 %

- In some countries (Germany) start up of virtual providers focused on special segments (elders, low spending customers)
- Another way is a deal with resellers (Australia)
- The fastest and cheapest is to make new plans/tariffs. Its side effect is also that the prices are hard to compare, so the customer is not so price sensitive

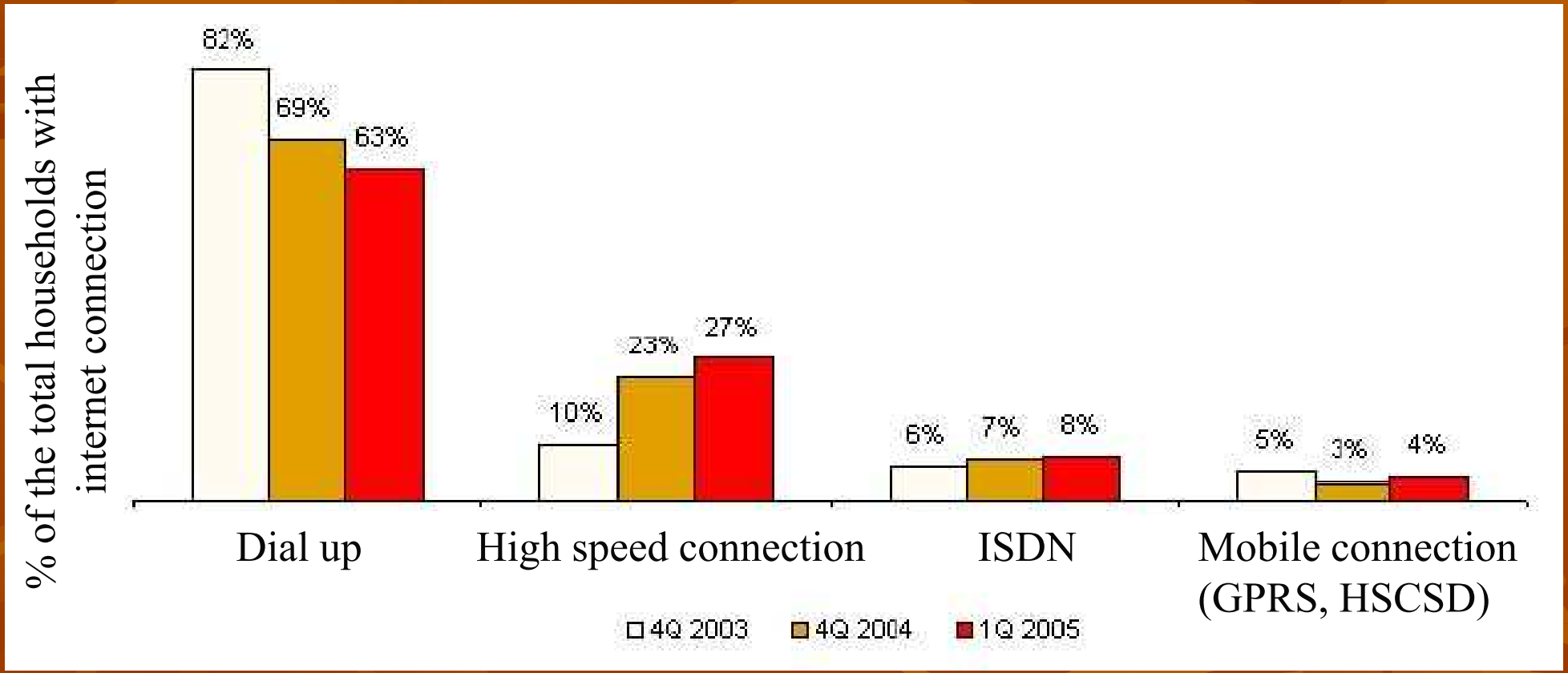
Prepaid vs. Postpaid

- Postpaid customers are much more profitable
  - Vodafone has about 50% customers on plans (= postpaid) and the ARPU of them is 966 CZK monthly. Compare to ARPU of prepaid customer 342 CZK
- Customers on plan are more likely to be loyal
  - That is important for full portability of phone numbers was introduced

Data services

- Recent way, how to squeeze out more money of mobile network users
- Faster data transmitting enables to provide new services
- Lack broadband internet connection in CR

Means of internet connection in ČR



Mobile commerce in CR

Other forms than voice and SMS used by 10 % of Czech mobile owners (2006 est.)

Until 2005 limited to less sophisticated forms

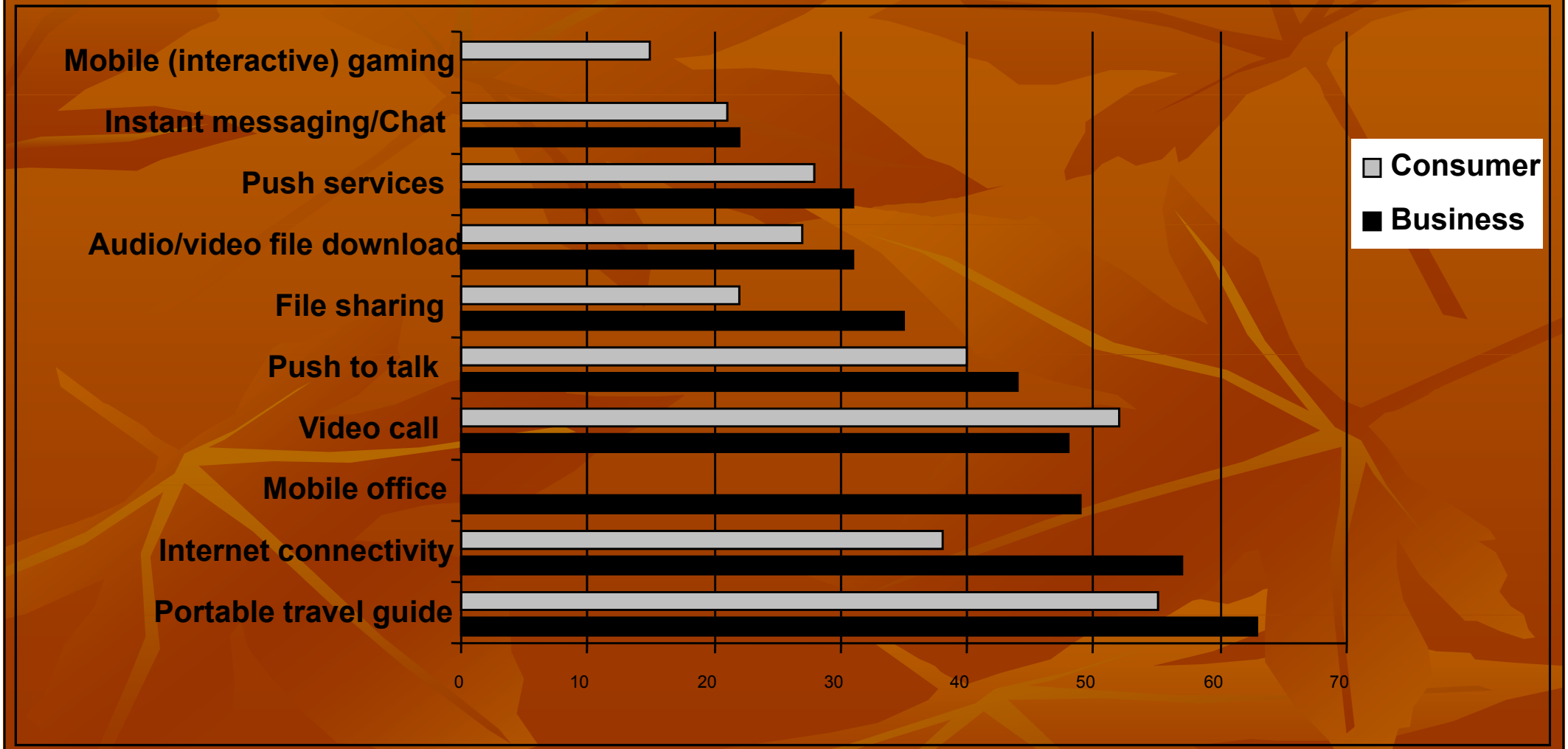
200 mil CZK in 2003

(inc.42 mil CZK spent on mobile games in 2003)

500 mil CZK est. in 2004

1 bil CZK est. in 2005

Expected services in 3G networks (Milvard Brown survey, CR 2005)



People inquired claimed they would be spending approx. 480 CZK monthly for these new services)

What services do you plan to use in next 12 months?

	Asia Pacific (%)	Europe (%)	North America (%)	South America (%)
Games	49	15	11	30
Ring tones	73	20	27	25
Music	55	15	13	28
News	31	15	15	23
Sports clips	29	12	10	13
Multimedia images (images, screen savers)	56	16	13	13
Video clips or movie previews	25	7	7	10
Full feature films	11	8	3	8

What are the most important factors for you, when you are downloading content to your mobile phone?

	Asia Pacific (%)	Europe (%)	North America (%)	South America (%)
Ease of payment	54	39	31	64
Quick to download	58	30	30	15
Immediate/timely content delivery	46	30	23	22
Ability to share content with friends	60	44	17	38
Ability to store content on the network	25	12	14	24
Ability to store content on mobile phone	38	26	11	44

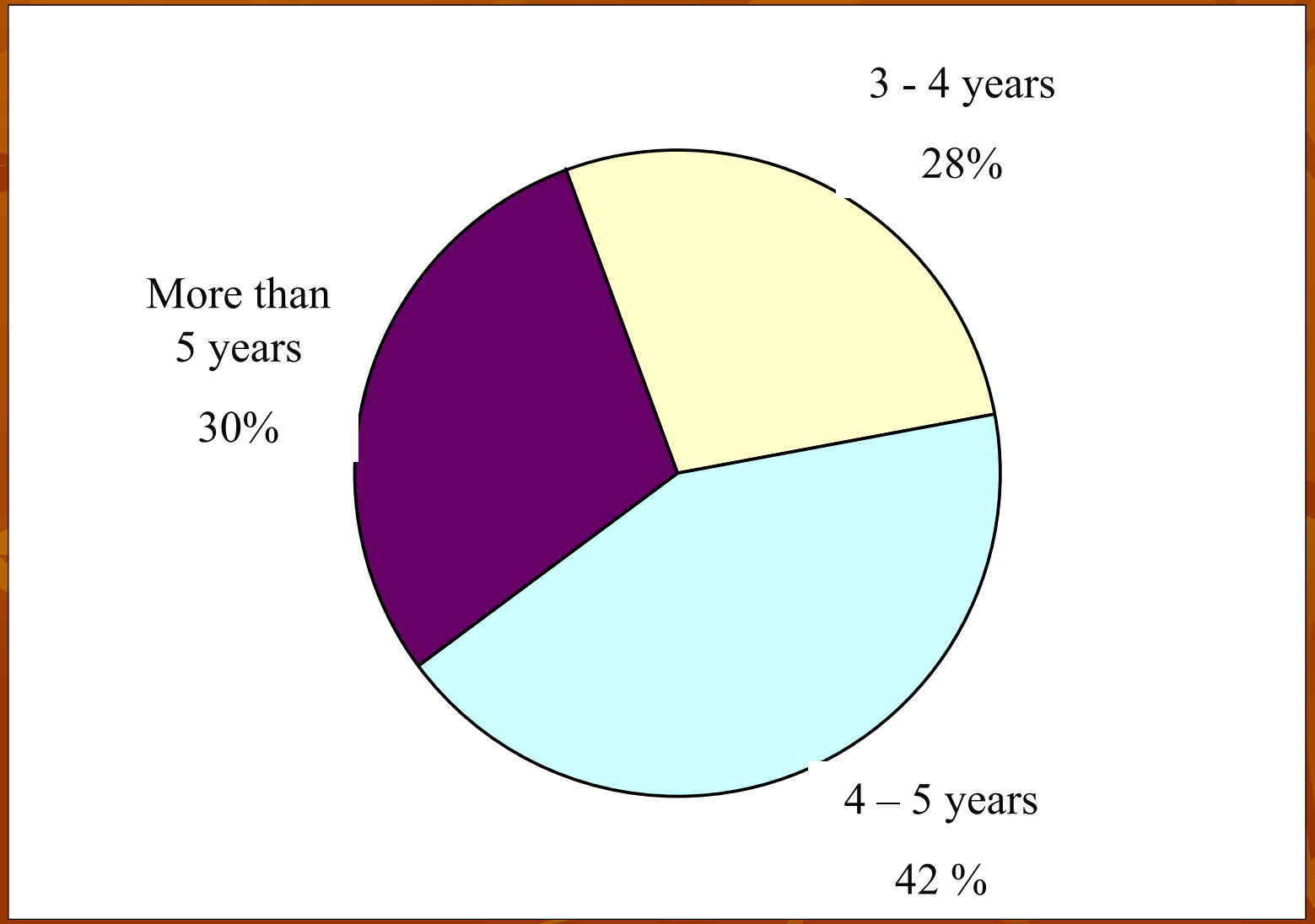
M-banking

Association for mobile payments (all three providers and 5 biggest banks in ČR)

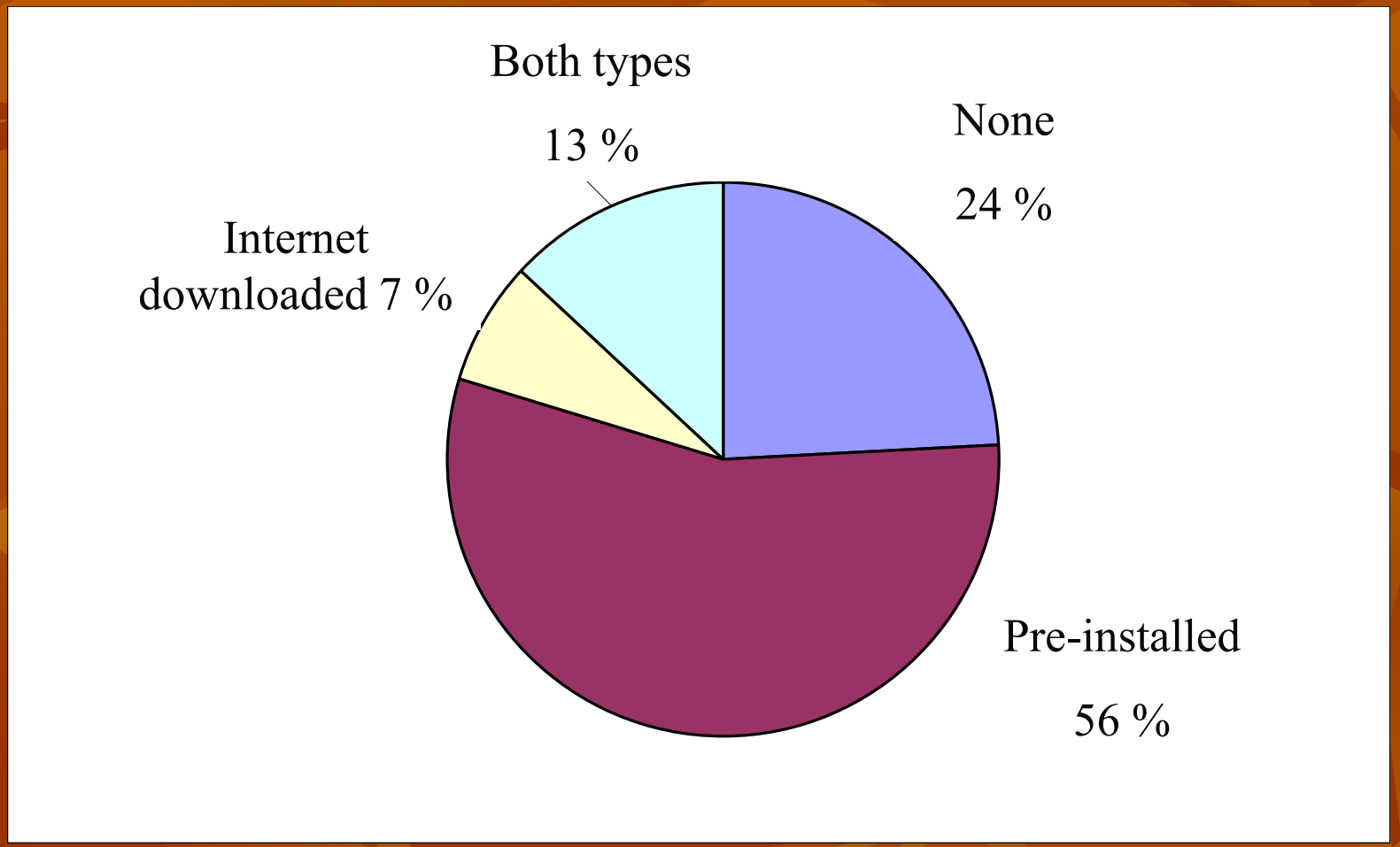
M-payment by T-mobile

Maintaining of bank accounts via mobiles

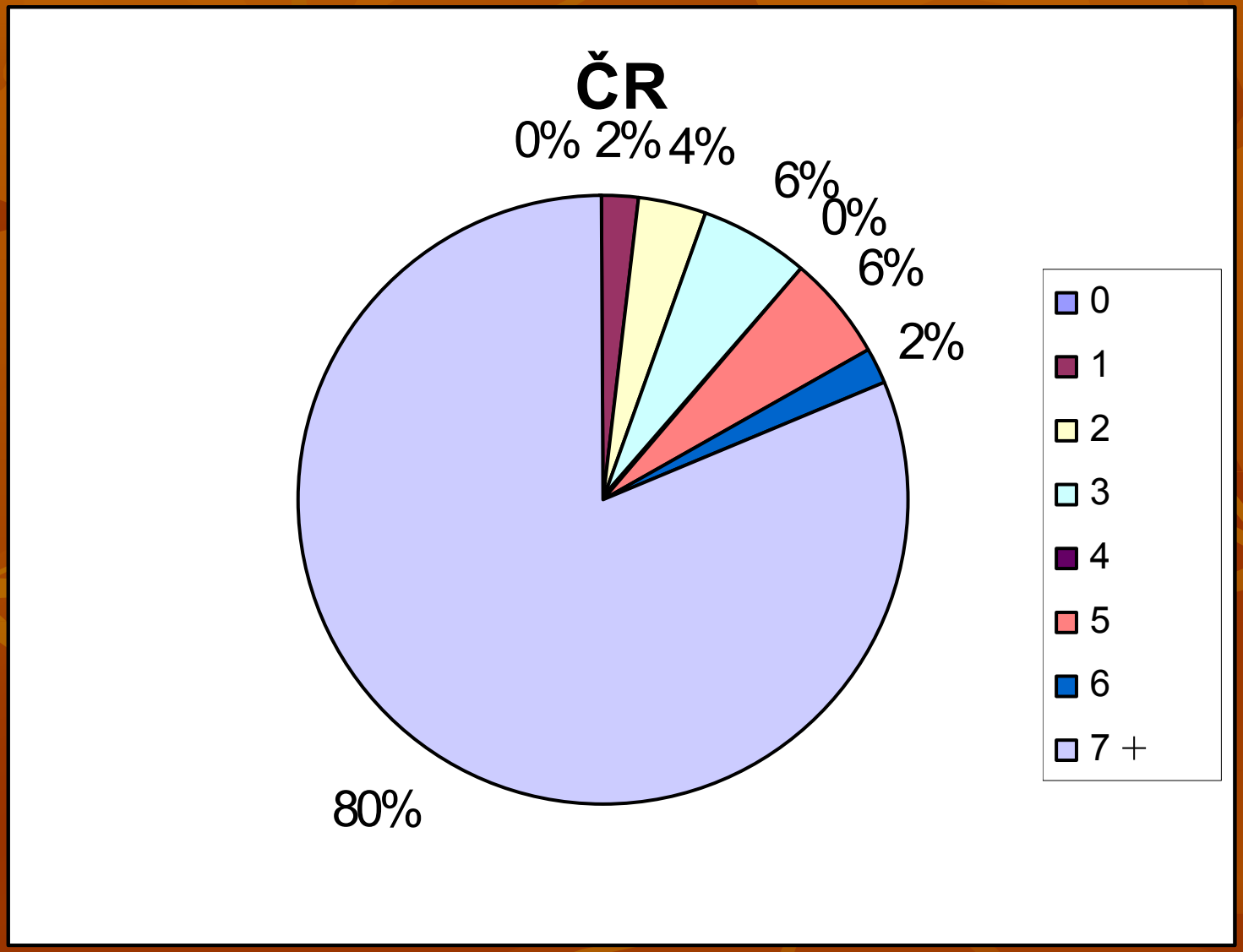
How long have you been using a cell phone? (Survey among Czech students, 2005)



Do you play games on mobile phone?
(Survey among Czech students, 2005)



How often do you send SMS (per week)?
(Survey among Czech students, 2005)



3G content (offered since 12/2005 in ČR)

- Big brother type of entertainment
- TV news
- Traffic cameras
- Music downloads
- Online games

Thank you for your attention