

1 Introduction

Not Q3 – but the next 20 years.

→ Management must have a vision that directs today’s strategic decisions!

Method applied:

- Understanding the trends:
 - Remembering 1980s and seeing today?
 - feel for dimension of change
 - Extrapolate empirical technology trends
 - understand order of magnitude of changes
 - Try to learn from forecasting mistakes of the past
 - apply what we learned
- Personal vision of what communications will look like in 2023
 - concrete scenario (with the risk of being utterly wrong)
- Personal view on actions required by politics, society and business
 - nobody should wait; actions are required today
- Personal vision for Swisscom, and how we prepare our long-term future today

2 History and Today: What happened during the past 20 years

- Computers
 - a “computer” was a mainframe
 - Commodore 64, Sinclair appearing
 - today: portable PCs with Pentium 2.2 GHz for 1k€
 - Networks
 - start of Coax CATV coverage
 - start of digitalisation of digital telephony
 - analogue NMT still under development
 - today: wireless broadband and digital TV widely available
 - Equipment
 - introduction of CDs and CD players
 - first Cordless Phones (in USA)
 - still under development: LCDs
 - today: mobile telephones, DVD players, flat screens everywhere
- science fiction of the 80s is reality today!
- Markets
 - preparation of deregulation of telecoms markets in UK (= trust liberal market forces)
 - long distance calls still very expensive
 - today: wireline phone calls close to free of charge
 - today: regulators still don’t trust liberal markets and continuously intervene

3 Trends, Market Penetration and Forecasting

3.1 Empirical basic technology trends

- Spectrum efficiency increases by a factor of 2 every 2.5 years (Cooper’s Law)
→ capacity increase by a factor of 250 until 2023?!
- Computer power doubles every 2 years (Moore’s Law)
→ increase of computer power by a factor of 1000 until 2023?!
→ in 2023 a 1000€ computer has more power than the human brain (20 Petaflops = 20 Mio. Xbox)
→ hardware; software certainly still not capable of matching human brain
- Memory capacity doubles every 1 year
→ increase of memory capacity by a factor of 1’000’000 by 2023?!
→ video files of several weeks length can be stored easily
- Transmission capacity of optical fibres doubles every 6 months
→ cost of distance is already zero today!

3.2 Time-to-market and user-friendliness

- Time required for market penetration of new technologies become shorter and shorter:
40% of US households used
 - electricity 50 years after the first introduction
 - TV 30 years
 - internet 25 years
 → inventions of the next 5 years will have reached 50% of all households in 2023!
- User friendliness is an issue between generations:
“I have always wished that my computer would be as easy to use as my telephone. My wish has come true. I no longer know how to use my telephone.” (Bjarne Stronstrup, inventor of the programming language C++)
→ Watch the kids – they have no problems at all!

3.3 What do people typically under- or over-estimate

- Internet time
“People do not operate on Internet time and so change is slower than the enthusiasts predicted”
→ 2023: Don’t overestimate, how different the world will look like!
- Visions
“People tend to overestimate what can be done in one year and underestimate what can be done in five or ten years”
→ 2023: Don’t underestimate what can be done!

3.4 So what can be expected in 2023?

- 20 years ago and today: computers, equipment, networks, markets
→ fundamental changes can be expected
- Technology trends: spectrum efficiency, computer power, memory capacity, transmission capacity
→ technology will progress with orders of magnitude

TMT conference Morgan Stanley, Barcelona, November 21, 2003

- Time-to-market and user friendliness:
 - innovations of next years will penetrate 50% of all households in 2023
 - user friendliness will not significantly improve, but (young) people will adapt naturally
- Speed of change:
 - long-term developments can be dramatic, but our biology remains unchanged!

4 Personal vision - What may be possible in the year 2023

- Things, not just people, will communicate
 - pervasive computing with ubiquitous communications will create unthinkable new applications
- Every access will be a radio access
 - no hassle with wires anymore
- There will be no compatibility issues any more (technical standards, languages, equipments)
 - tiny expert systems will automatically translate between standards and even cultures
- Usage of equipments will be intuitive (personal language, hand writing, gestures)
 - everybody will finally be able to use modern technologies
- Everybody and everything can be reached anytime and everywhere
 - can be reached, not will be reached!
- Knowledge can be accessed and be treated everywhere
 - knowledge is accessible and understandable by everybody everywhere
- Everything we see, hear, read will be accessible any time later
 - anything you see, hear, read can be stored and retrieved later on: you will “google” your own life!
- We will communicate all the time, everywhere, with everybody
 - communication over distances will become an integral part of every minute of our lives!

5 To do's today (society, politics) - What should be done now, to enable this Vision 2023?

- Societies must invest in education – ensure access to new technologies for all kids
 - Swisscom contributes with broadband internet free of charge to all Swiss schools
- Governments must pioneer e-applications
 - Swisscom runs several pilots in Switzerland for e-government (e-voting, e-access to government etc.)
- Companies must embrace new technologies, even if they risk to cannibalise their existing businesses
 - Swisscom pioneered PWLAN and pushes VOIP
- Innovation through competition: governments must refrain from intervening in markets
 - new regulations have the risk of being wrong, cementing existing structures and reducing incentives for new investments

6 Swisscom's way - How is Swisscom progressing towards 2023?

- Innovation leader in core business: ubiquitous wireless broadband
 - new trend of convergence of fix and mobile networks?
- Commitment to society: free internet for Swiss schools, universal service assurance without subsidies, assuring jobs in remote places
 - society development is long-term business development!

"Communication in the year 2023"

Outline of speech by Jens Alder, CEO Swisscom

TMT conference Morgan Stanley, Barcelona, November 21, 2003

- Invest in knowledge base: revolution of apprentice and life-long education is well under way
→ telecom's becomes more and more a knowledge industry!
- Focus on core business: prefer solid economic development to grand, speculative vision
→ our core business faces enough disruptive challenges!
- Maximise efficiency: cash flows must be sustainable!
→ only the fittest will survive!
- Solid balance sheet: sound base for new challenges, opportunities and shareholder returns
→ financial conservatism is a good ground in an uncertain world!
- Keep shareholders happy: clear, committed return policy
→ telecoms remain a capital intensive industry!

7 Swisscom's role in 2023?

- Provider of ubiquitous, broadband services for everybody and everywhere in Switzerland
- Most respected brand by business and society in Switzerland
- Value creator through capital and knowledge utilisation
- Company with network of international strategic partnerships or part of global consortium
- Most efficient telecom operator by all measures
- Telecom stock of the year 2023 because of performance, transparency and predictability!

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