1 Introduction

Not Q3 – but the next 20 years.
\[\rightarrow\text{Management must have a vision that directs today’s strategic decisions!}\]

Method applied:

- Understanding the trends:
  - Remembering 1980s and seeing today?
    \[\rightarrow\text{feel for dimension of change}\]
  - Extrapolate empirical technology trends
    \[\rightarrow\text{understand order of magnitude of changes}\]
  - Try to learn from forecasting mistakes of the past
    \[\rightarrow\text{apply what we learned}\]

- Personal vision of what communications will look like in 2023
  \[\rightarrow\text{concrete scenario (with the risk of being utterly wrong)}\]

- Personal view on actions required by politics, society and business
  \[\rightarrow\text{nobody should wait; actions are required today}\]

- 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
    \[\rightarrow\text{today: portable PCs with Pentium 2.2 GHz for 1k€}\]

- Networks
  - start of Coax CATV coverage
  - start of digitalisation of digital telephony
  - analogue NMT still under development
    \[\rightarrow\text{today: wireless broadband and digital TV widely available}\]

- Equipment
  - introduction of CDs and CD players
  - first Cordless Phones (in USA)
  - still under development: LCDs
    \[\rightarrow\text{today: mobile telephones, DVD players, flat screens everywhere}\]

\[\rightarrow\text{science fiction of the 80s is reality today!}\]

- Markets
  - preparation of deregulation of telecoms markets in UK (= trust liberal market forces)
  - long distance calls still very expensive
    \[\rightarrow\text{today: wireline phone calls close to free of charge}\]
  - 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)
  \( \rightarrow \) capacity increase by a factor of 250 until 2023?!

- Computer power doubles every 2 years (Moore’s Law)
  \( \rightarrow \) increase of computer power by a factor of 1000 until 2023?!
  \( \rightarrow \) in 2023 a 1000€ computer has more power than the human brain (20 Petaflops = 20 Mio. Xbox)
  \( \rightarrow \) hardware; software certainly still not capable of matching human brain

- Memory capacity doubles every 1 year
  \( \rightarrow \) increase of memory capacity by a factor of 1’000’000 by 2023?!
  \( \rightarrow \) video files of several weeks length can be stored easily

- Transmission capacity of optical fibres doubles every 6 months
  \( \rightarrow \) 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
  \( \rightarrow \) 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++)
  \( \rightarrow \) 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”
  \( \rightarrow \) 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”
  \( \rightarrow \) 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
  \( \rightarrow \) fundamental changes can be expected

- Technology trends: spectrum efficiency, computer power, memory capacity, transmission capacity
  \( \rightarrow \) technology will progress with orders of magnitude
• 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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