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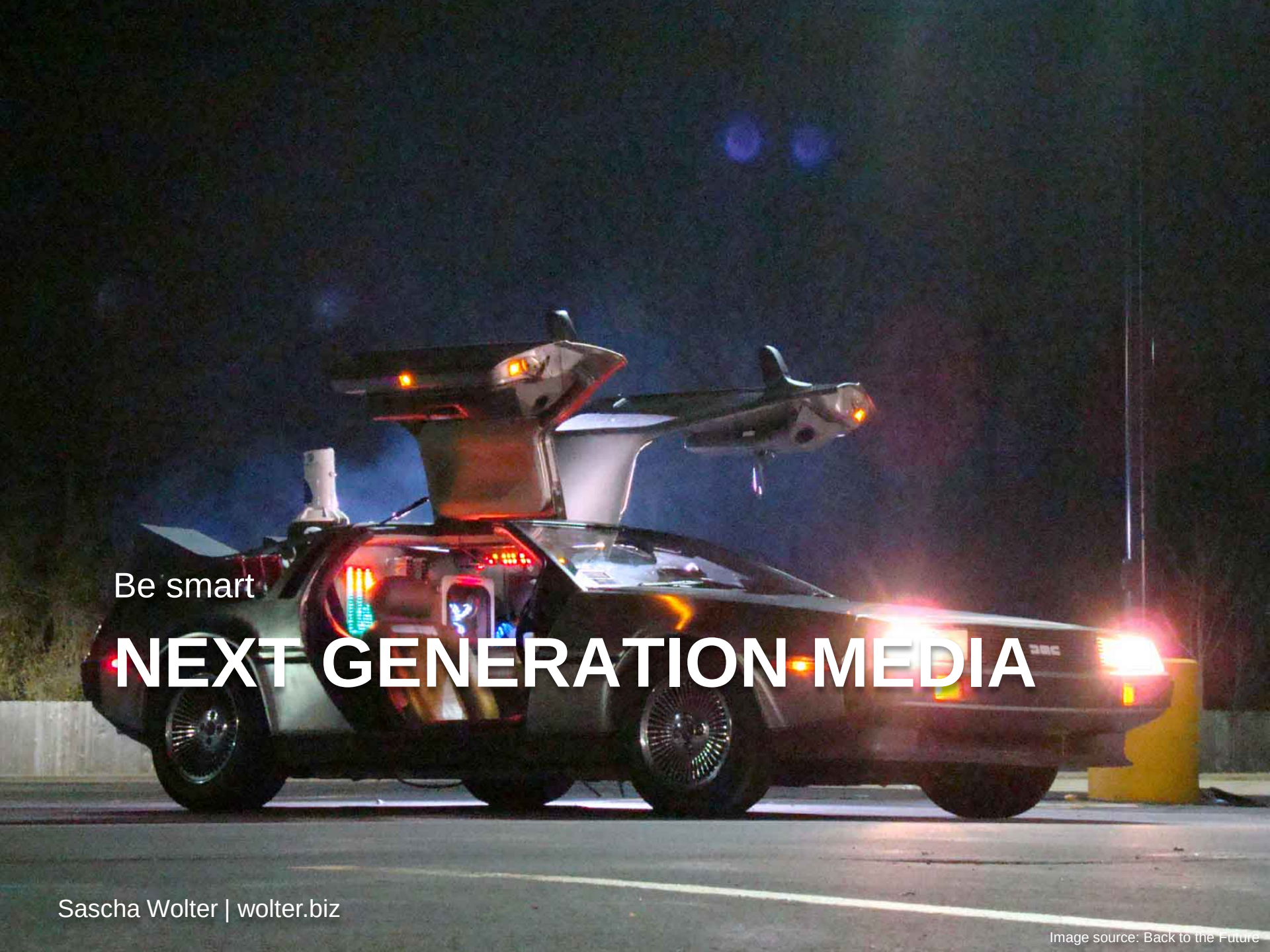
Next Generation Media

Pervasive Computing, Rich Applications and Mobile Apps in all flavors

Image source: Big Bang Theory



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NEXT GENERATION MEDIA

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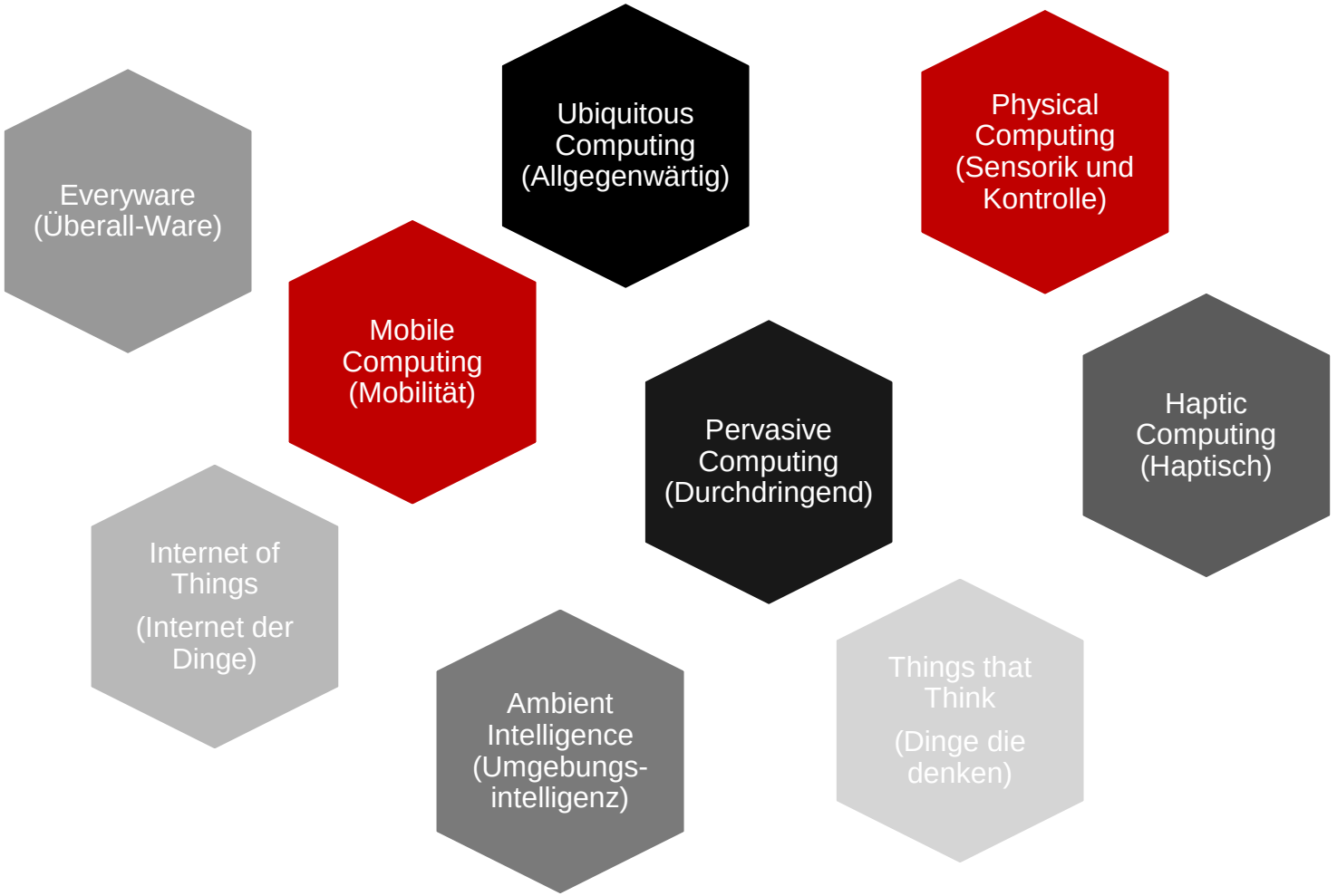
Image source: Back to the Future

Mobility and Ubiquitous Computing…



Interactive System

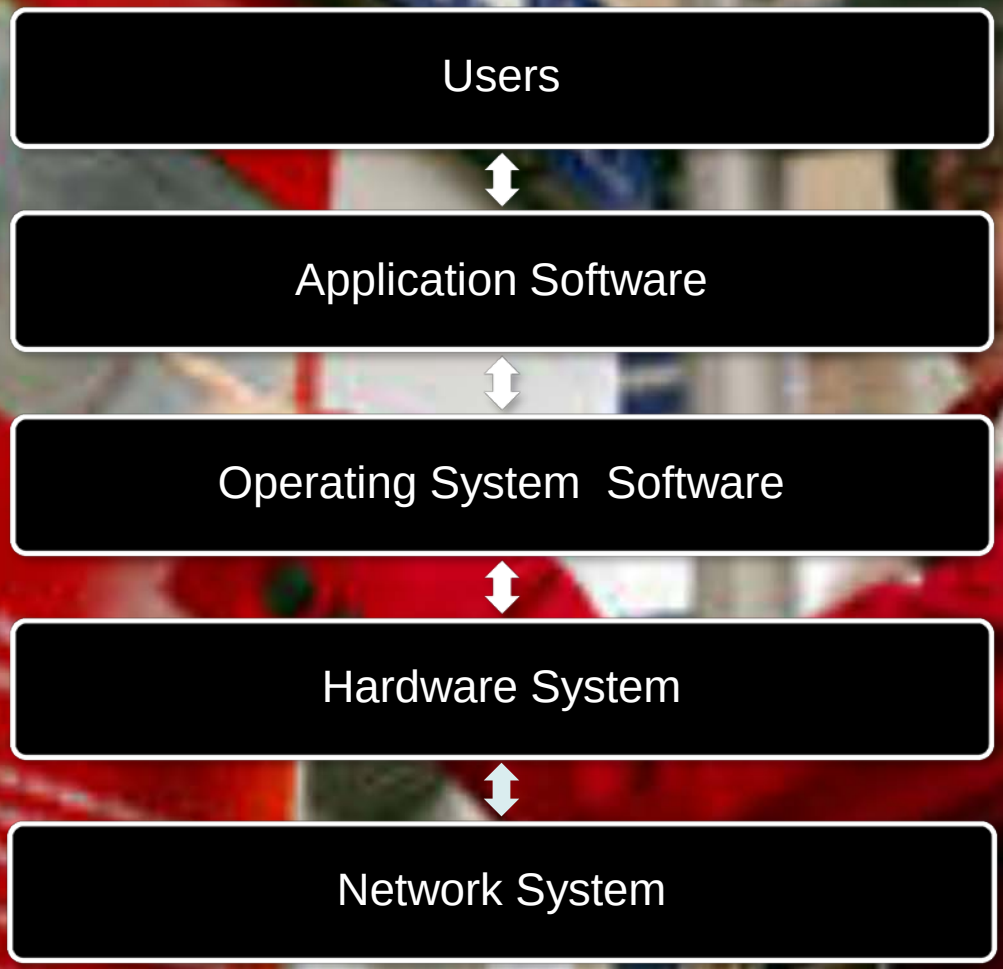


Image source: bahn.de

Mobility: Smart Phones

- 1996: Nokia 9000 Communicator
  First Smart Phone
- 2007: Apple iPhone

Image source: Nokia and Apple

NOKIA

Source: Nokia

Smart TV

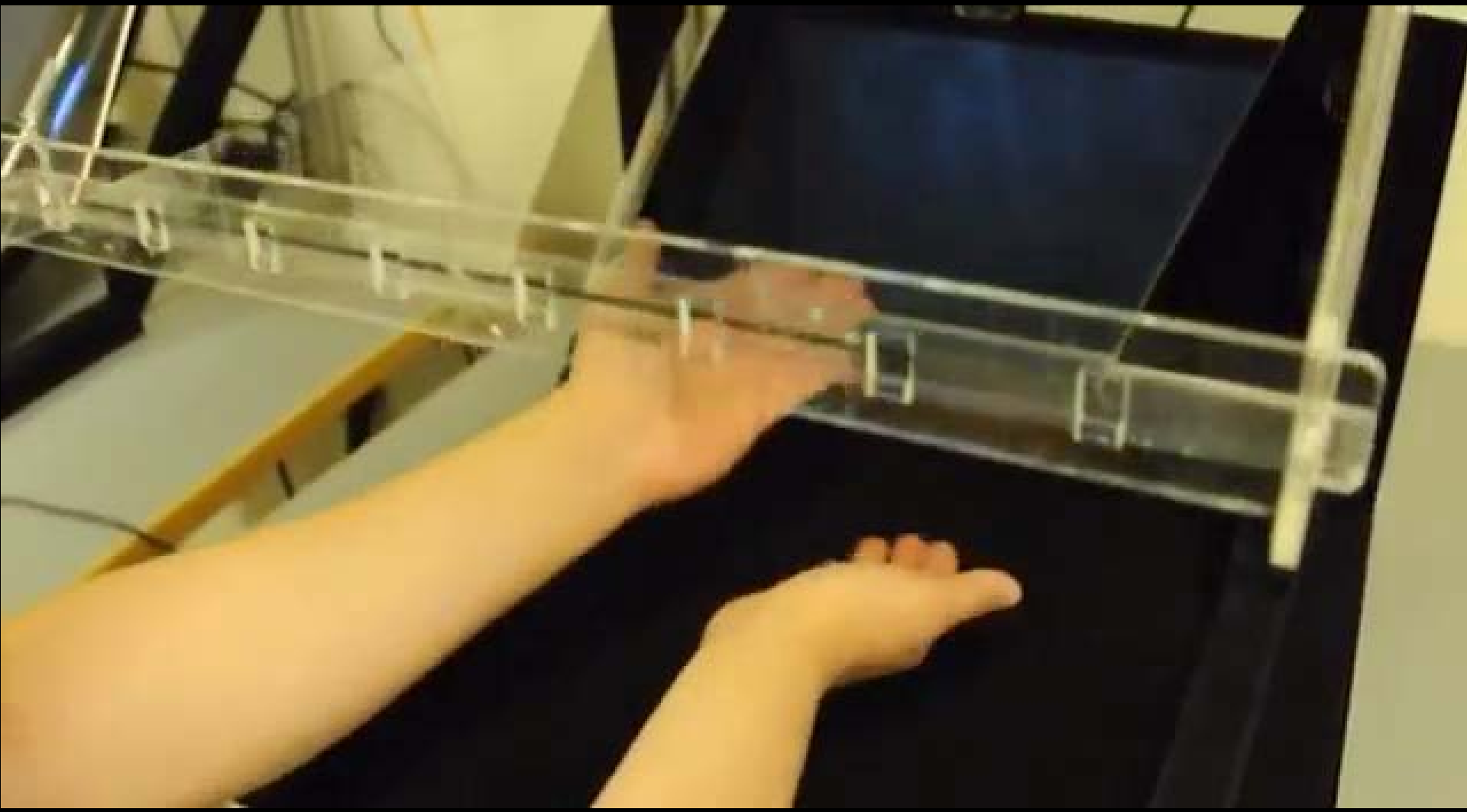
53% of sold devices are Smart-TVs in 2011 (Source: Display-Research)

Tricorder?

Image sources: Philipps, Amazon

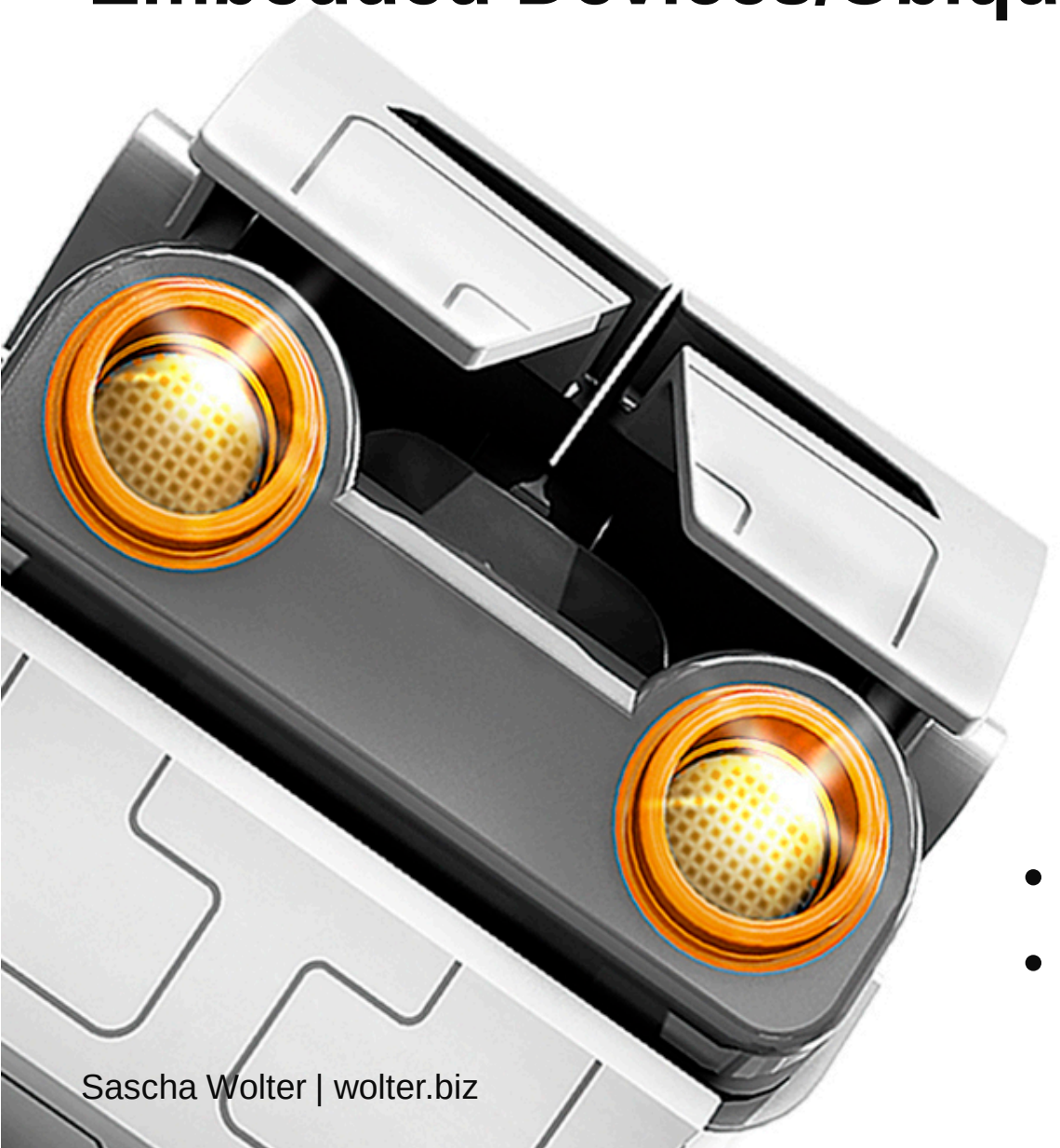
Hardware matters!

Augmented Reality and 3D



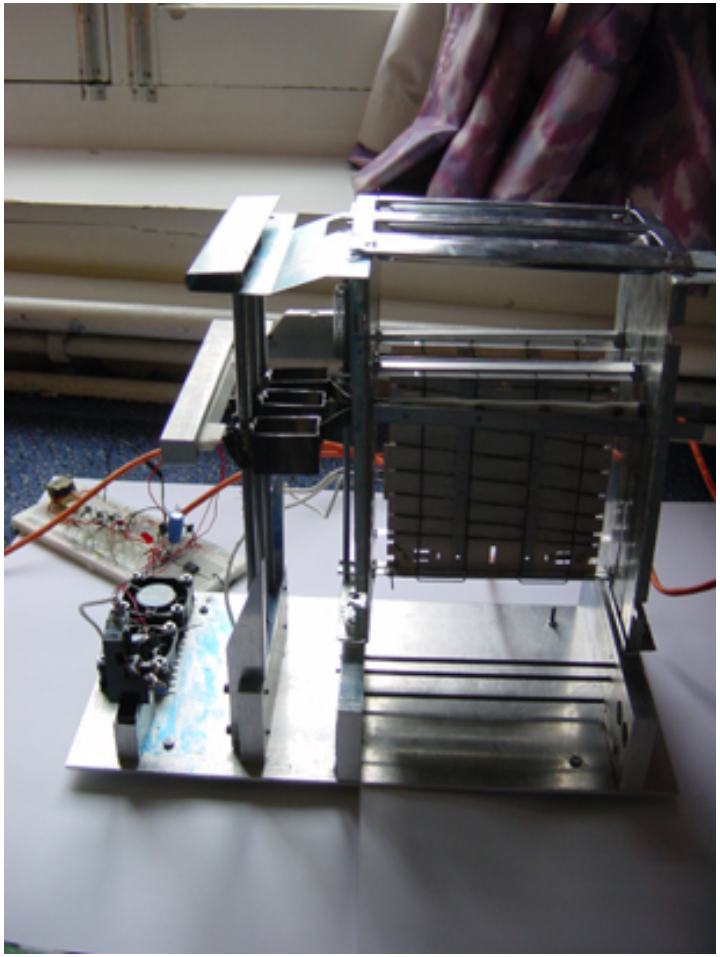
Source: Microsoft Research

Embedded Devices/Ubiquitous Computing



- On Device Programming
- Remote Controlling

Pervasive Computing



Design-Student Robin Southgate (http://en.wikipedia.org/wiki/Toaster#cite_ref-11), 2001

Ambient Intelligence

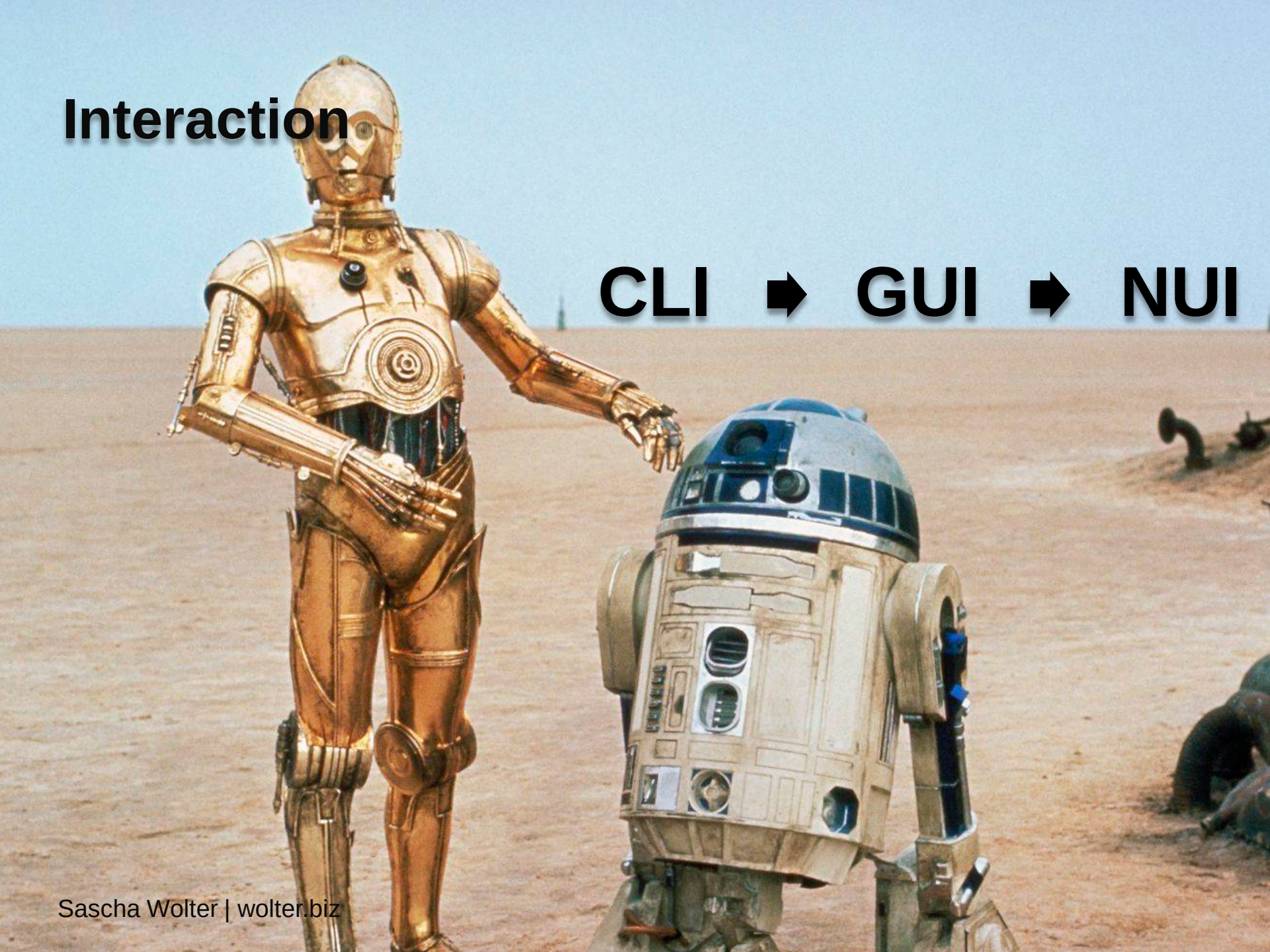
Next Generation Media will support the user in a smart and connected way at his work and in his everyday life without noticing.

Image source: http://mediacup.teco.edu/

Smart Home

- RWE: http://www.youtube.com/rwesmarthome

Interaction



CLI ➡ GUI ➡ NUI

Sensors

[9]

Thinking out of the Box (Sensors)

Massive Attack Tour 2008

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Massive Attack Tour 2008: http://www.uva.co.uk/archives/84

Multitouch

Thinking out of the Box

Disney Appmates 2011

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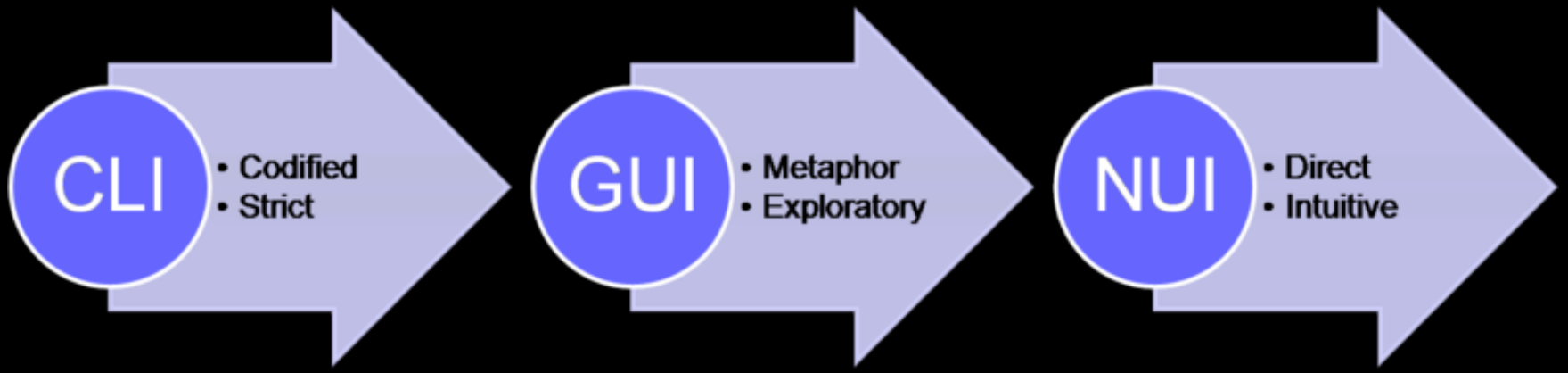
Image sources: Microsoft

Tangible and Tactile Interfaces

Sources: http://senseg.com/ and http://cnet.com/

Body (gesture) and facial expression (mood)

Natural?


CLI
• Codified
• Strict
GUI
• Metaphor
• Exploratory
NUI
• Direct
• Intuitive

Natural?

Quelle: http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2779203/pdf/zpq20664.pdf

Wearables

The EyeWriter

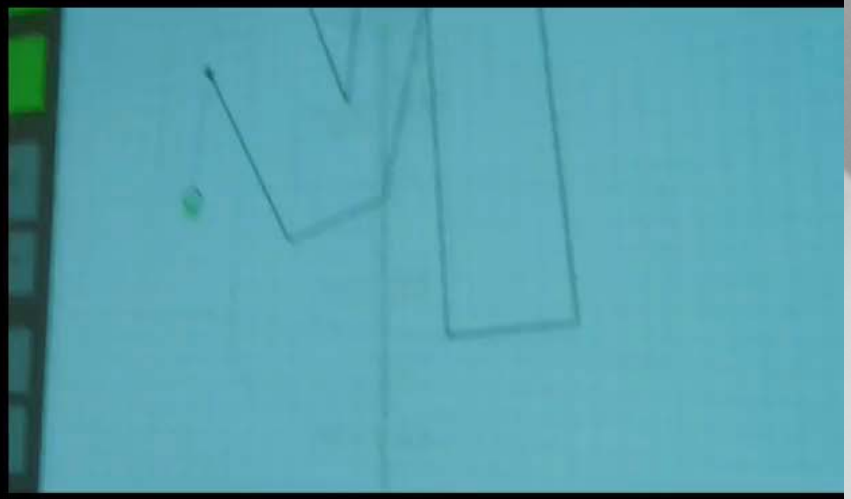
Free and open source software (Processing)

Low-cost hardware (Arduino, Webcam)

DIY for less than $50 (plus Computer)

Source: htp://www.eyewriter.org

Chances and Responsibility



Source: htp://www.eyewriter.org

Emotion and Mind

Image source: Mindflex

Emotion and Mind

- **Brain-Controlled Wheelchair**

Image source: http://www.instructables.com/member/jerkey/

Interaction and Usability

„masochists coffee pot“
by Jacques Carelman, 1969

Image source: http://itnews.inews24.com/php/news_view.php?g_serial=474508&g_menu=022600

Gulf between Human and Machine

Physical System (World)

User and Goals

Gulf of Evaluation (Interface Feedback)

Source: http://www.youtube.com/watch?v=JZge0Avr8ZU

Internet and Interaction

Source: Big Bang Theory

Prototyping

Experimental Model

Communication Basis

Creativity

- Developing and Evaluating Ideas

Conception

- Prototype for Specifying Requirements

Creation

- Prototype as Basis for Implementation

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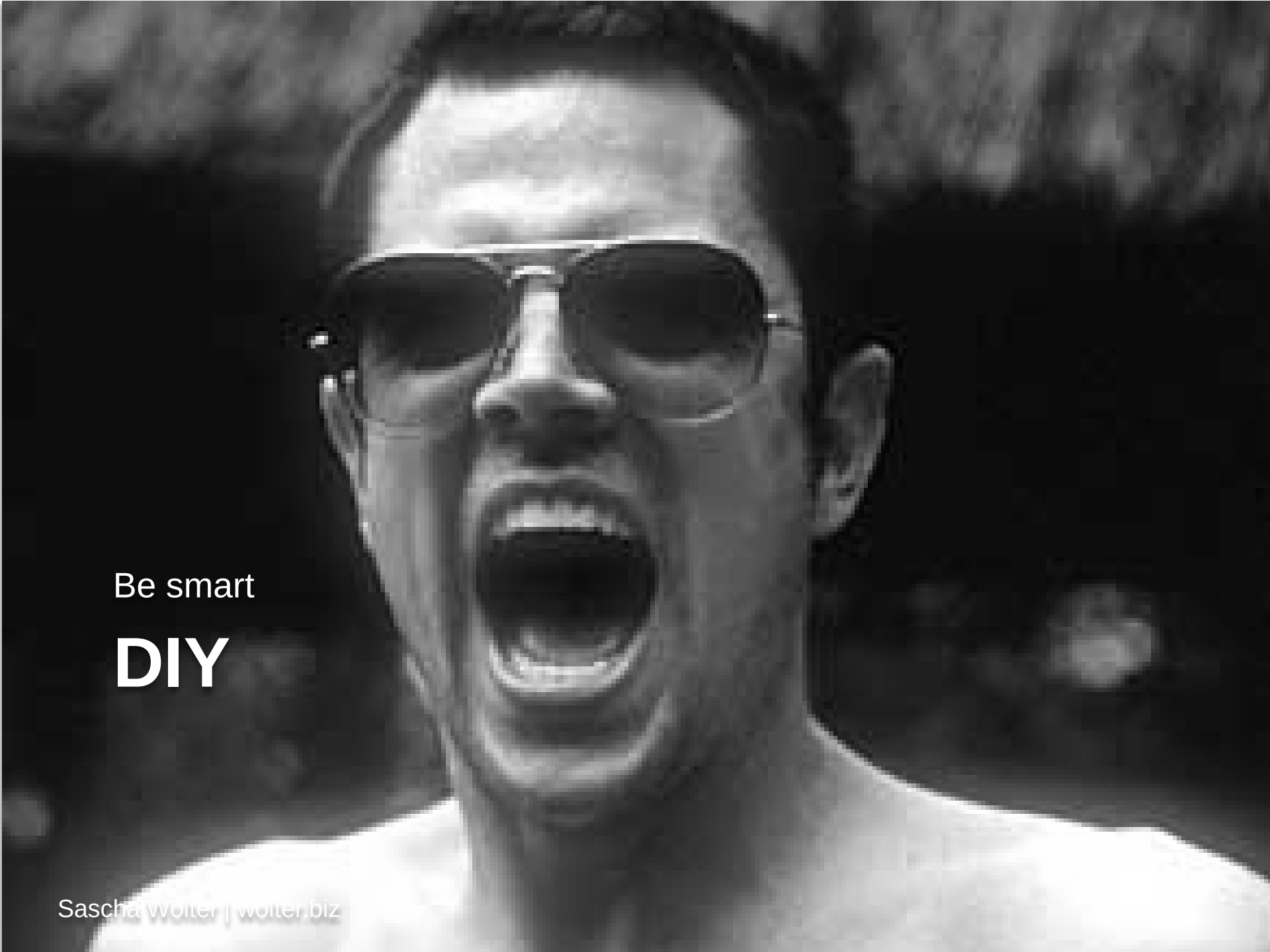
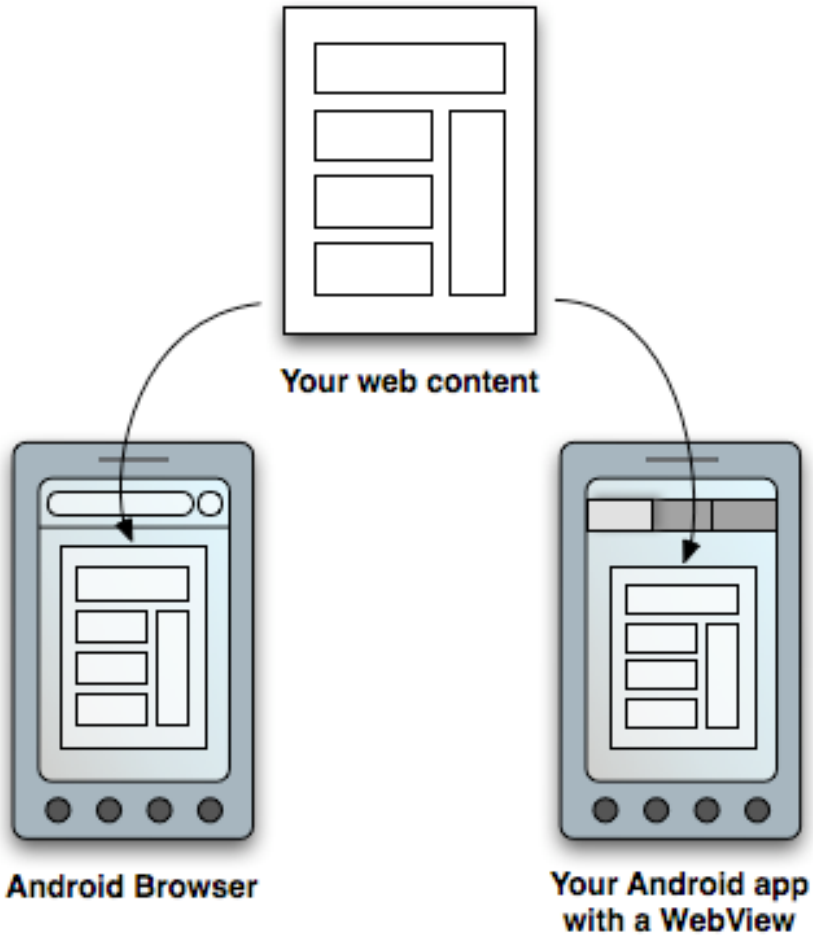
Image source: BMW


Be smart
DIY

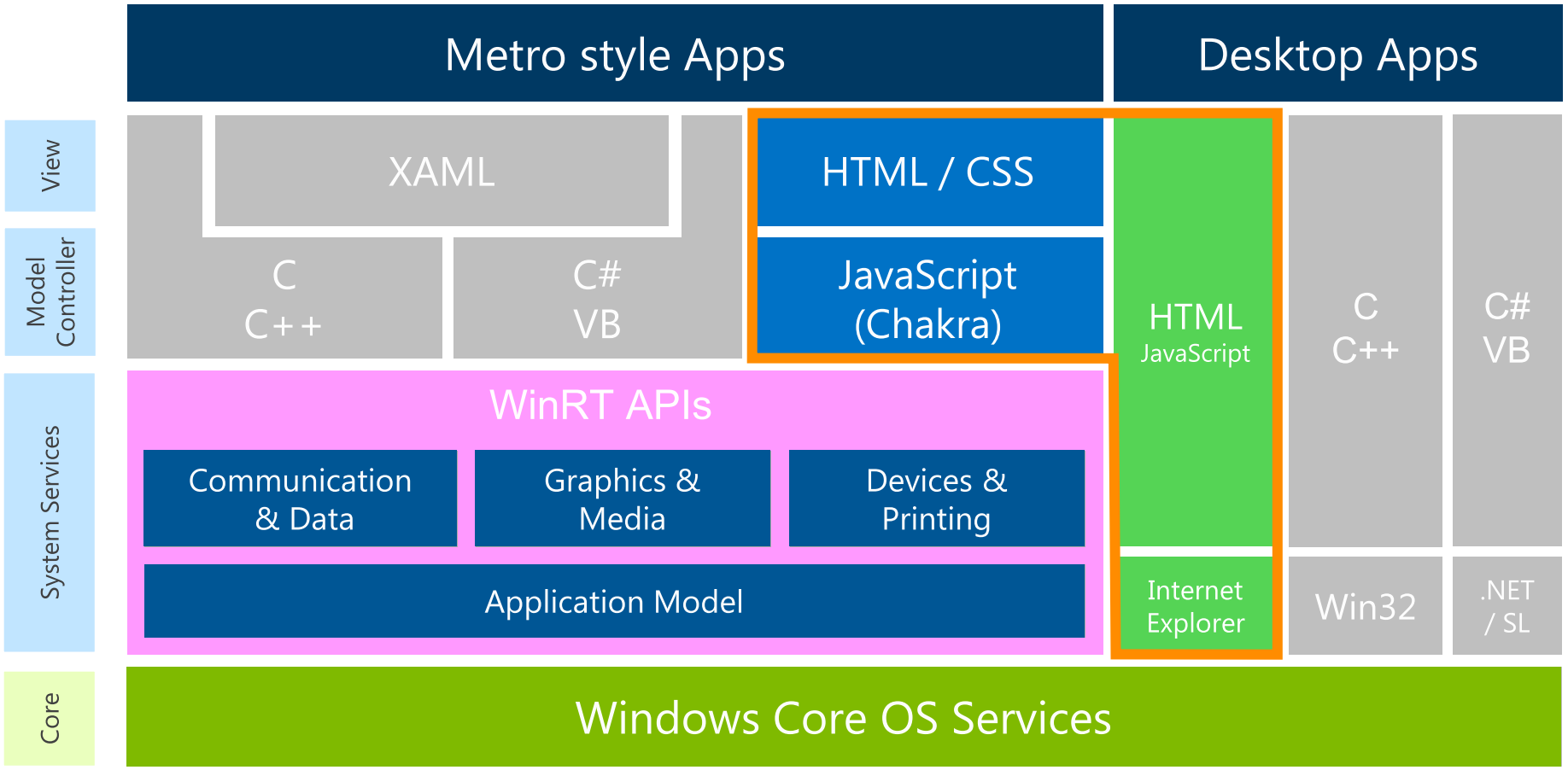
Different Approaches



- Web App (via Browser)
- Hybrid (WebView)
  - Phone Gap
- Cross-Compiler
  - GWT (Java to JavaScript)
  - Script# (C# to JavaScript)
- Cross-Platform runtime
  - Adobe Flash/AIR
  - Mono
- Native App
  - Sandbox/System access

Image source: http://developer.android.com/guide/webapps/index.html

Different Approaches: Windows 8



Different Approaches: Windows 8

- **Metro Design Language** is used in various devices (Zune Player, Zune Software, Windows Phone, Xbox, Windows 8)
  - Modern Design - Bauhaus
  - International Typographic Style – Swiss Design
  - Motion Design - Cinematography

- Metro style design
- Fast and fluid
- Snap and scale beautifully
- Use the right contracts
- Invest in a great Tile
- Feel connected & alive
- Roam to the cloud
- Embrace Metro principles

Which Approach to choose?

Image source: Back to the Future

Repetition and Fashion

HTML 1 (1991)
LiveScript/JavaScript (1995)

HTML 5
JavaScript 2
(2012 still in progress)

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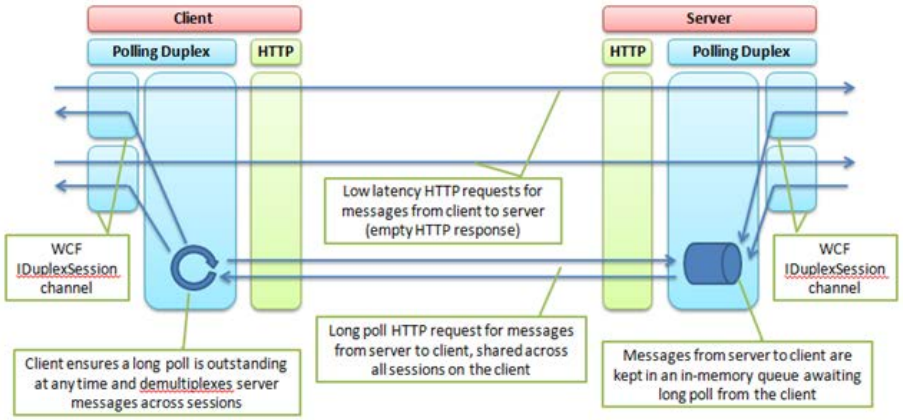
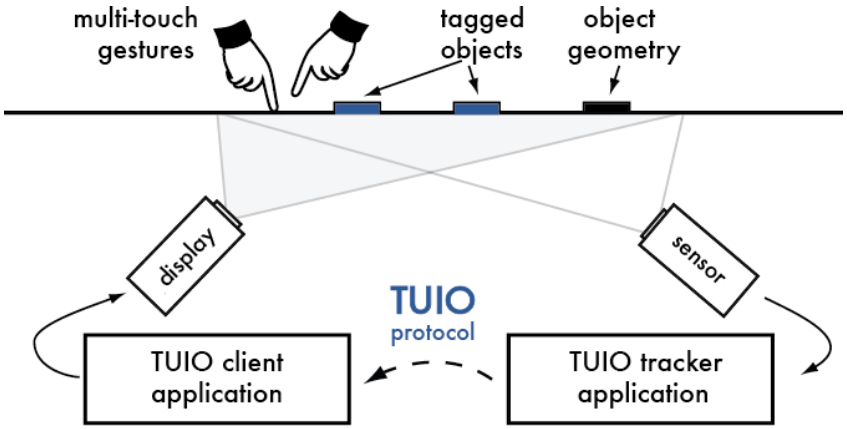
Image sources: Warner Bros Entertainment Inc. and Miramax Film Corp.

Which Approach to choose?

- Abstraction, Layers and Tiers
- Serialization, Sockets and Bridges
- Separation of Communication and Data



HTTP Polling/TCP Sockets



http://www.tuio.org/

Multitier Architecture

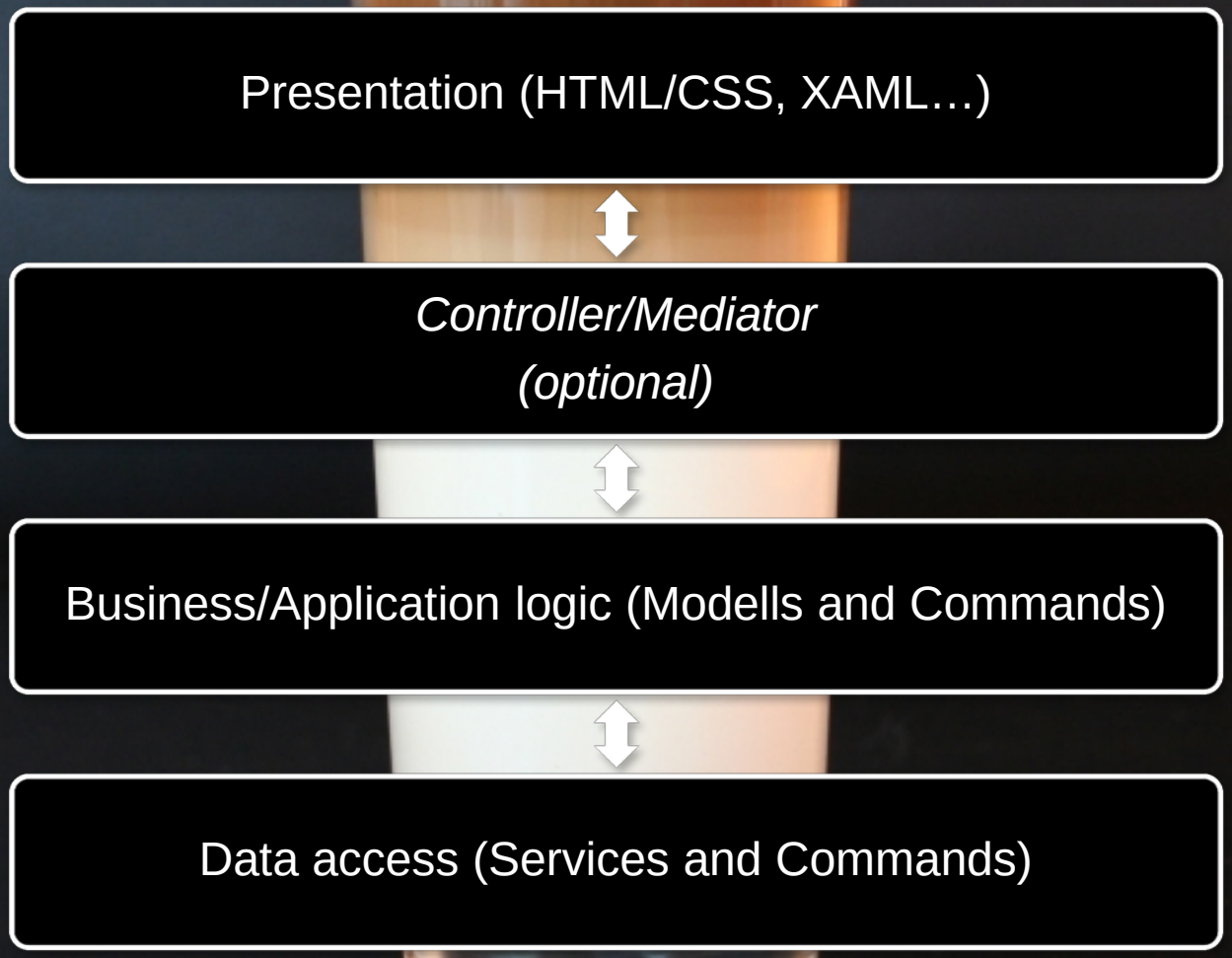


Image source: Coffeefellow (Wikimedia Commons)

About me

Sascha is a **Craftsman for Pervasive Computing, Rich Applications and Mobile Apps in all flavors** with focus on the Microsoft .Net Continuum (incl. Silverlight and Windows Phone 7), Adobe Flash Platform, JavaScript and HTML5. He also works as **consultant, trainer and author** on a freelance basis and contributes articles to a number of magazines. His books are best selling publications. He has been giving lectures at conferences like Flash on the Beach and Flashforward for several few years now. Sascha is also the founder of the leading German Adobe User Group flashforum.de with **more than 100,000 members**.

LEGO-based Design Process

1. Choose a problem: Build a LEGO ship.
2. Develop a vision: What sort of ship will it be? How big will it be? What will it carry?
3. Build: Build the framework of the ship.
4. Fill in the details: Design and build the details of the ship, ramps, doors, etc.
5. Test: Drive the cars around the ship and sail the ship while exploring the house.
6. Refine: Take parts of the ship apart and make them better.
7. Learn: Take what you learned from building this ship and use it to build a better one next time.

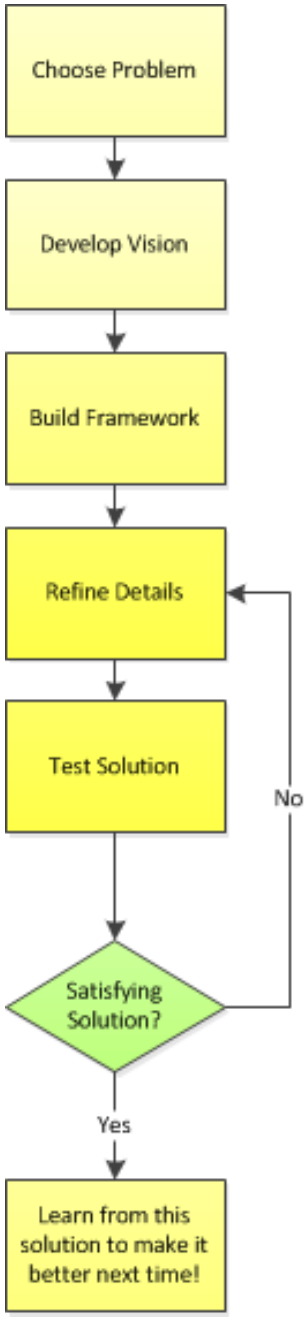


Image source: http://www.adobe.com/macromedia/events/john_gay/

Main Subject: Concepts and Workflow

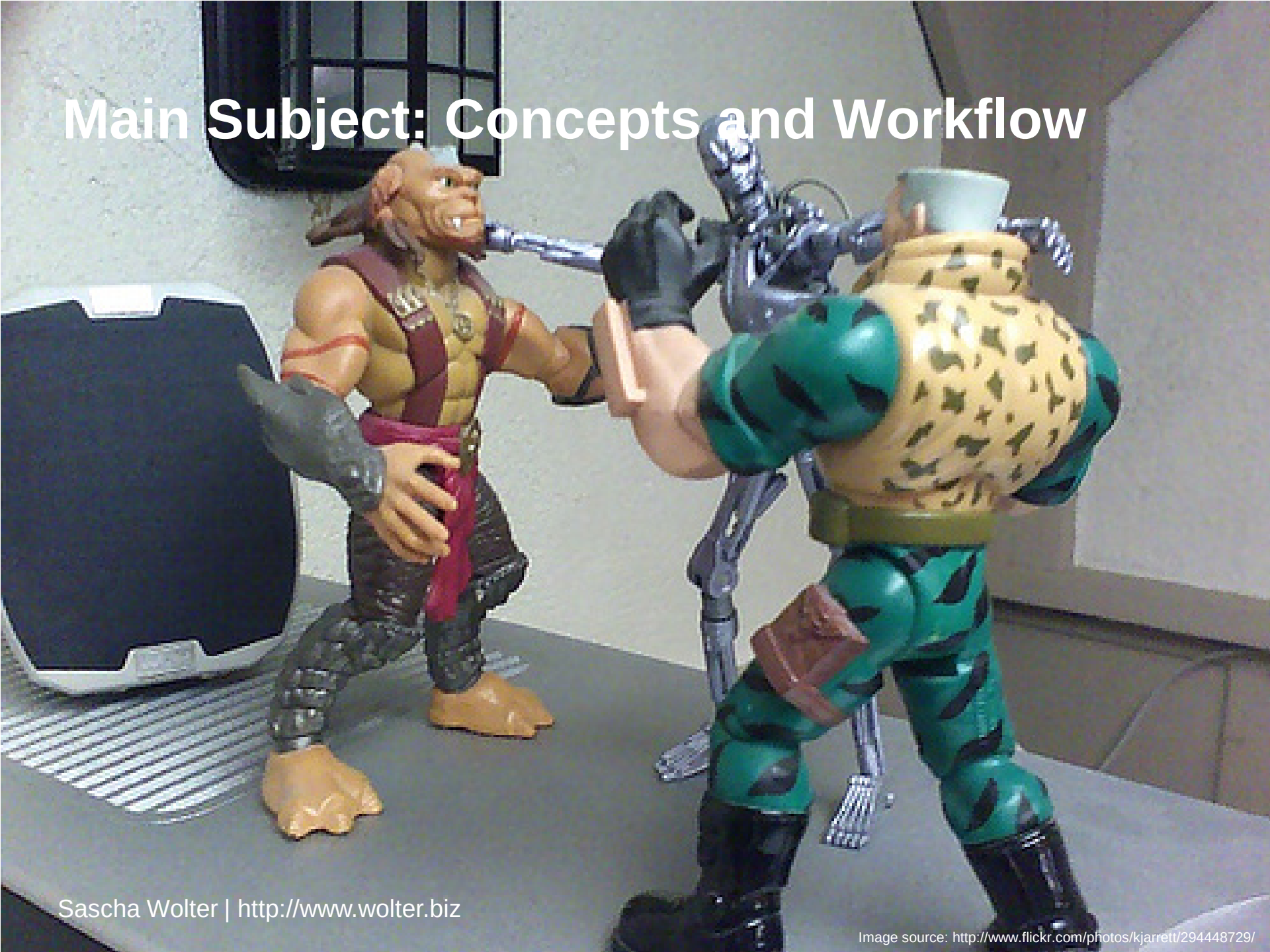


Image source: http://www.flickr.com/photos/kjarrett/294448729/

Separation of Concerns

- Styling
- Skinning
- Templating
- Design vs Code
- Visual vs Logic

Andy Warhol Monroe Style

Pattern

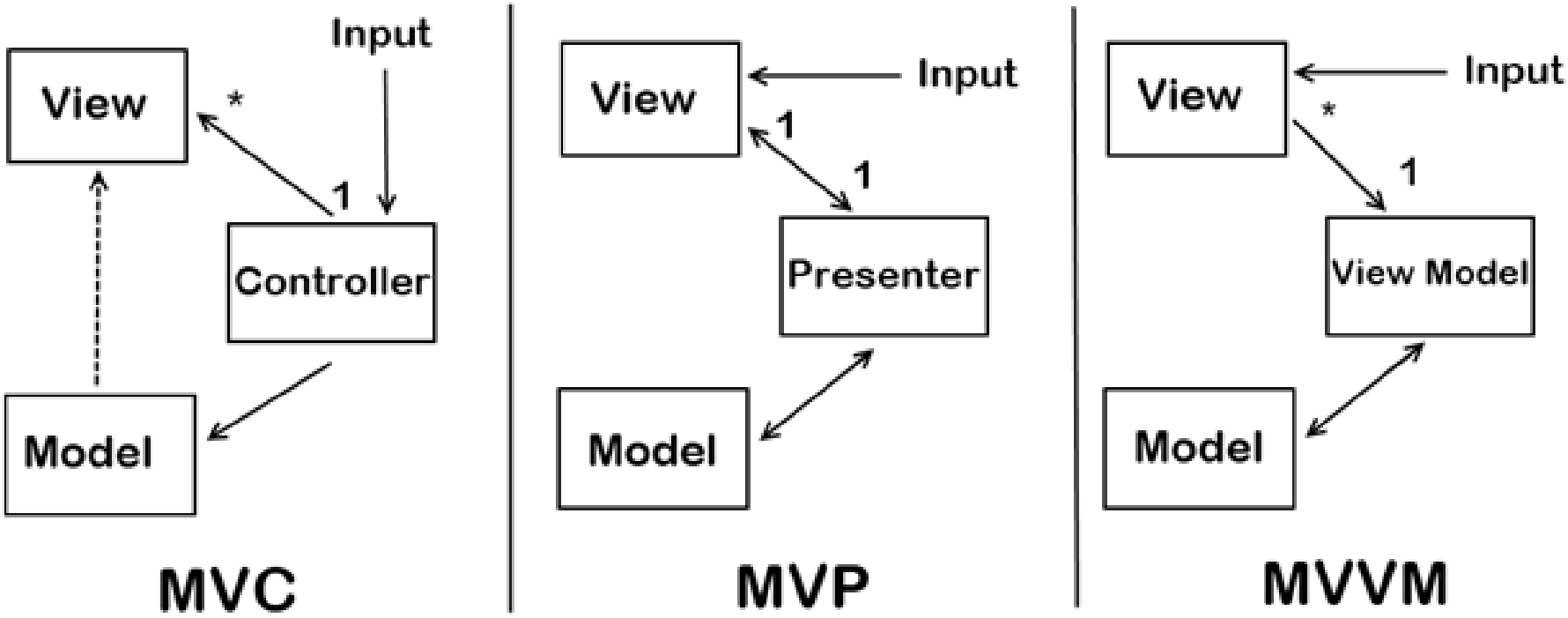
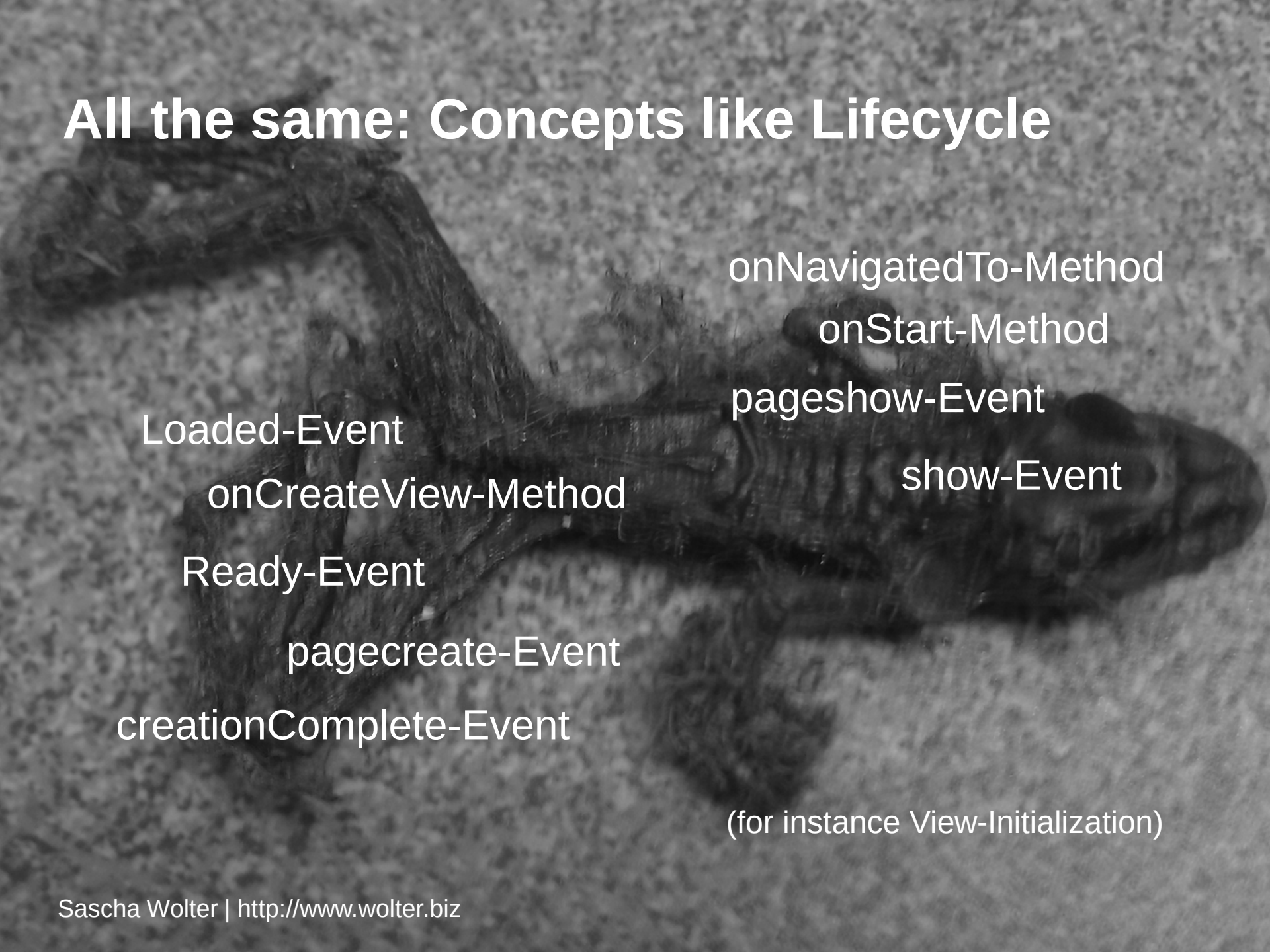


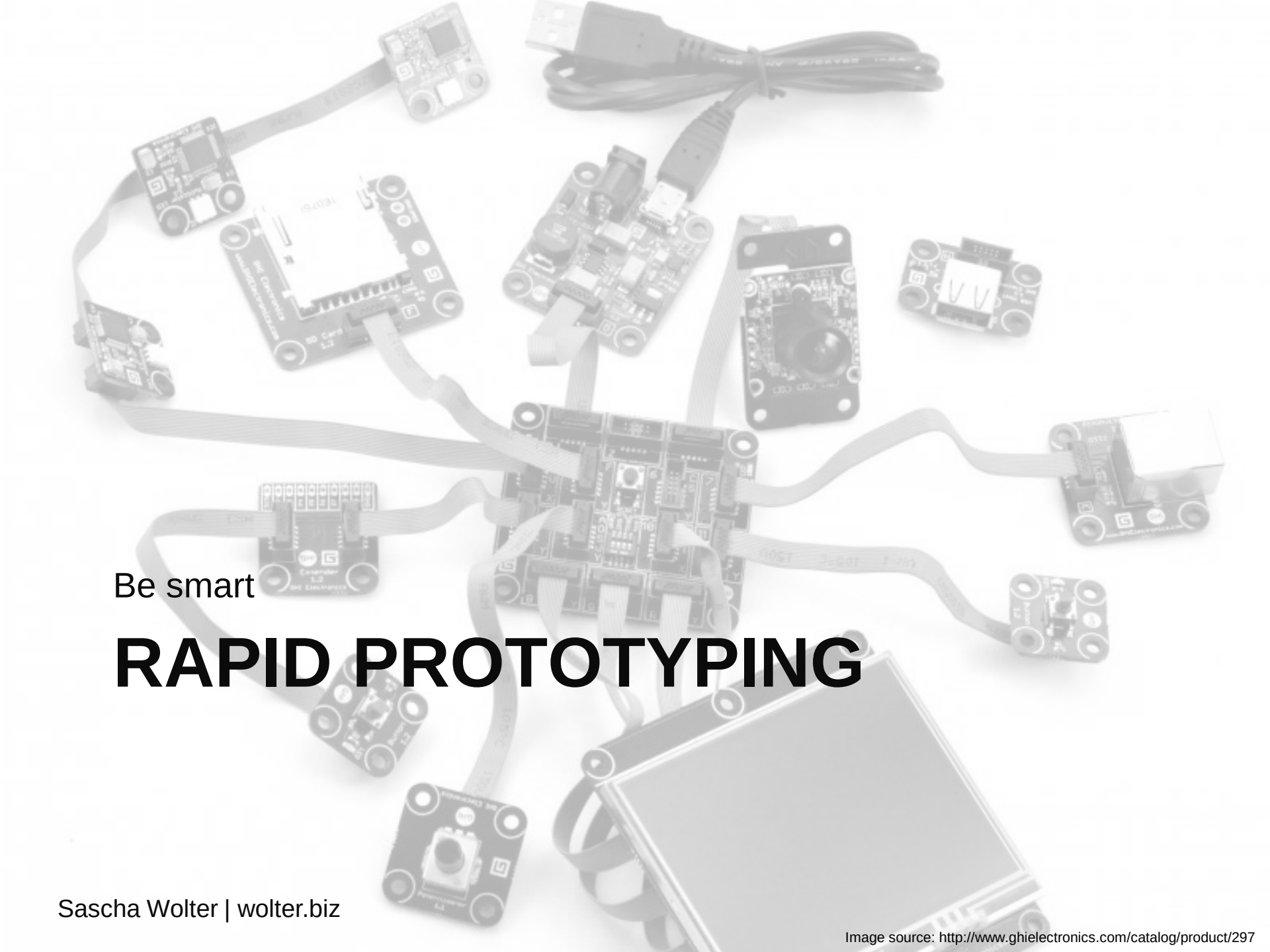
Image source: http://geekswithblogs.net/dlussier/archive/2009/11/21/136454.aspx

All the same: Concepts like Lifecycle



Practice

Bildquelle:: upload.wikimedia.org/wikipedia/commons/d/d3/Bundesarchiv_B_145_Bild-F081098-0028%2C_Bad_Godesberg%2C_Altenbegegnungsst%C3%A4tte.jpg



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RAPID PROTOTYPING

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Image source: http://www.ghielectronics.com/catalog/product/297

Rapid and Prototyping

- Prototype
- Prototyping
- Rapid Application Development
- Rapid Prototyping

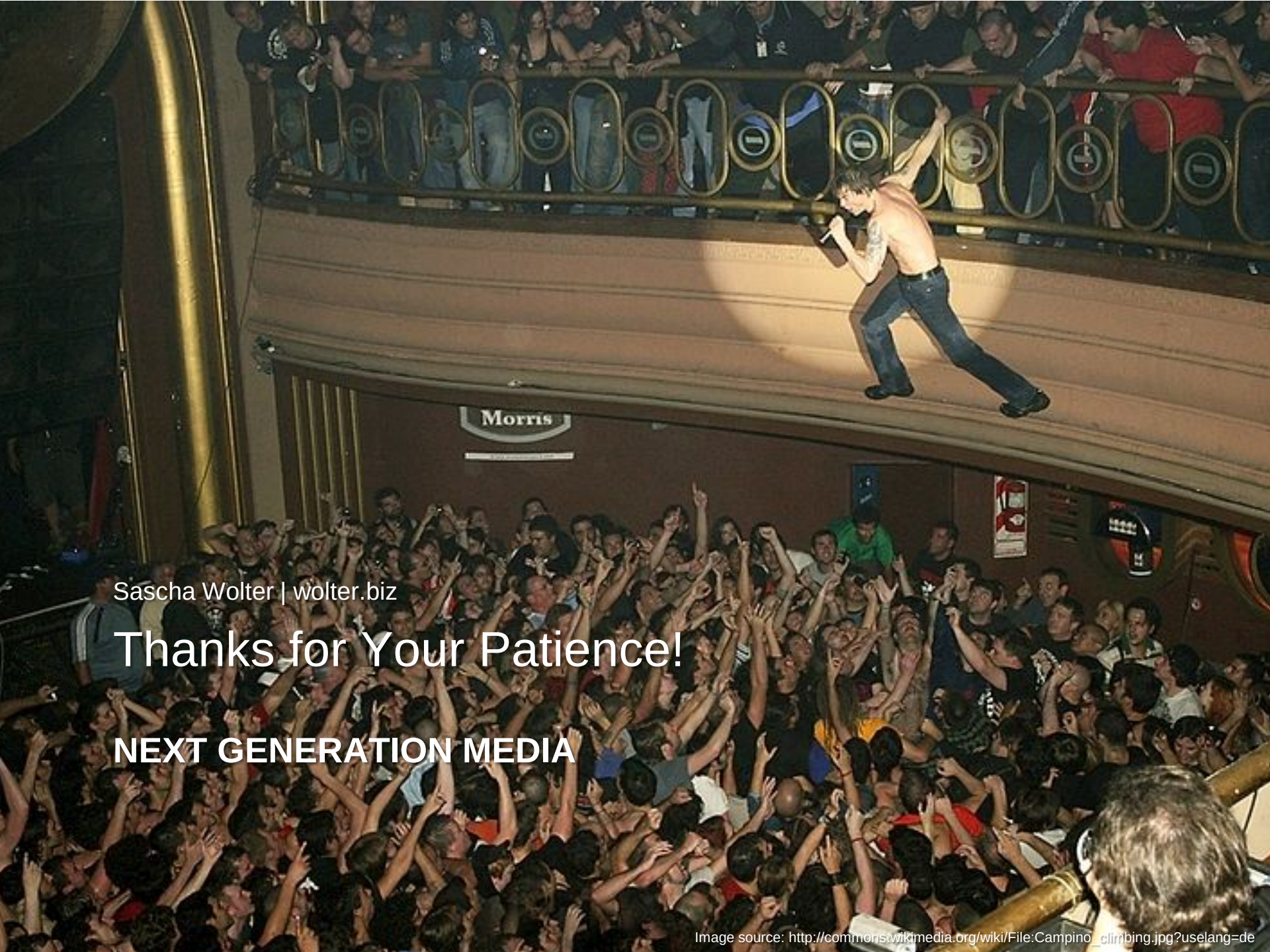
Bildquelle: Victor Bezrukov

Embedded Devices

Embedded Devices

- Automotive Sector (NDA)
- Domestic appliances (NDA)
- Siemens
- SieMatic
- …

Image sources: Auto News



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Thanks for Your Patience!

NEXT GENERATION MEDIA

Image source: http://commons.wikimedia.org/wiki/File:Campino_climbing.jpg?uselang=de