

New Patterns for a New Computing Era

Allen Wirfs-Brock

Wirfs-Brock Associates

@awbjs www.wirfs-brock.com/allen

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Are We Really Living in a Post-PC World?

By Jason Cross, PCWorld Mar 4, 2011 1:30 PM



Among the many ear-catching bon mots issued forth from Steve Jobs recently is the assertion that we're living in, or at the very least *entering*, the post-PC era. It started last year at the [D8 conference](#), when the Apple CEO said that PCs are going to be "like trucks" in that they'll still be around and useful for certain work, but only a smaller percentage of the users will need one. More recently at the [iPad 2](#) launch, Jobs re-confirmed this post-PC mantra.

Apple's third post-PC blockbuster



engadget

Post-PC

iCloud to be the corner stone for Apple's post-PC era

By Édouard PLANTE | Culture, Social

July 5th, 2011

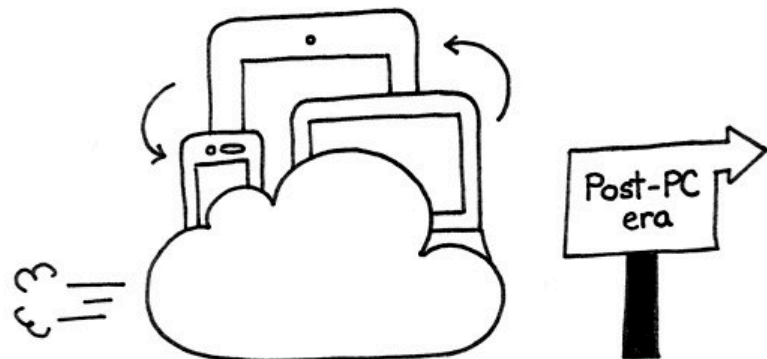


Illustration: Sandra Kuan

FILED UNDER: BUSINESS TECH

VMware boss focuses on post-PC era at VMworld



By: Jay Greene

AUGUST 29, 2011 6:41 PM PDT

Print

E-mail

Era

e·ra /'i(ə)rə,'erə/

noun

a long and distinct period of history with a particular feature or characteristic.

“spans of time, before and after which the practices or fashions change to a significant degree” — Wikipedia

Patterns For A New Computing Era?

- 
- Context
 - Forces
 - Solutions?

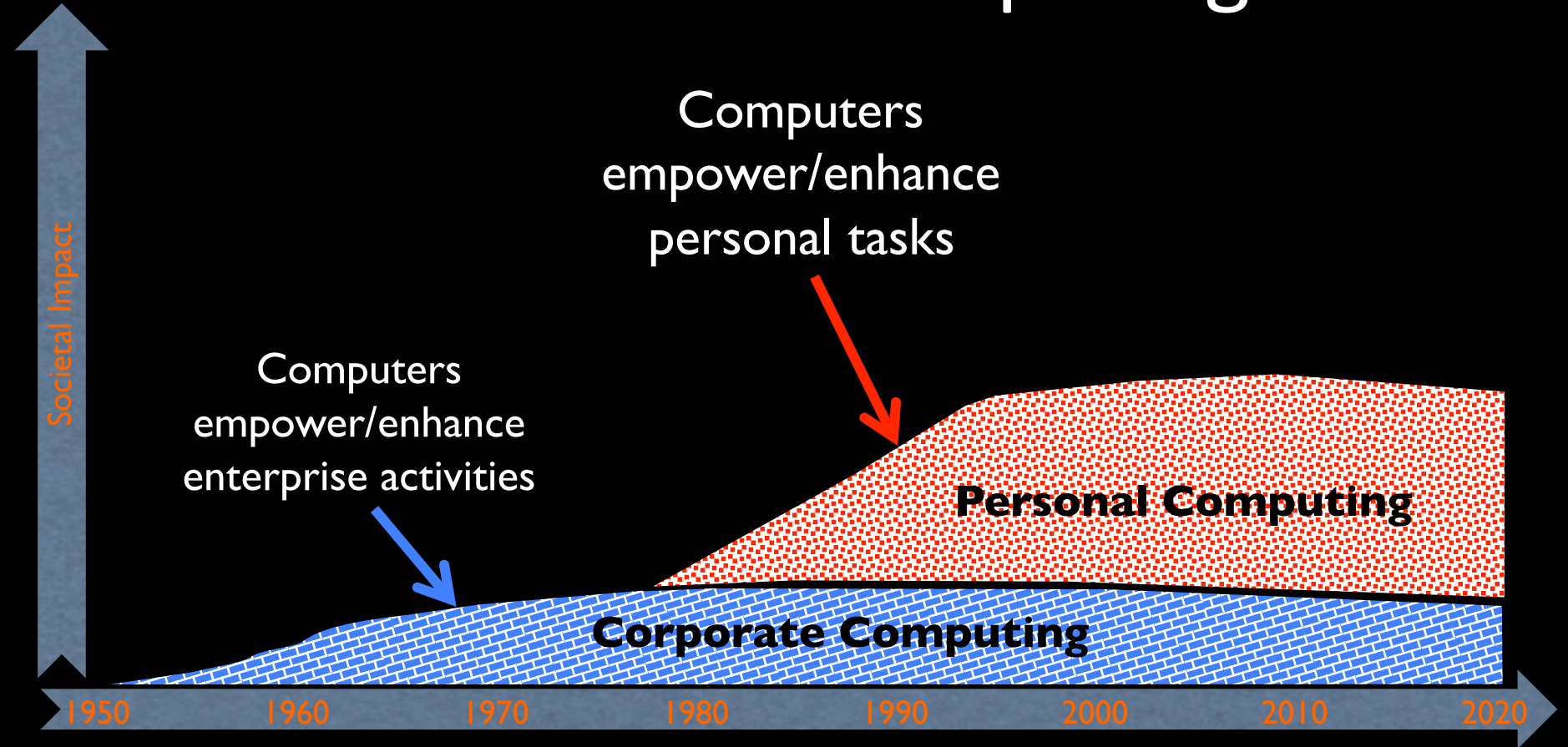
Context

Hardware evolution does not define a computing era



Computing eras are about the
impact of computing on society

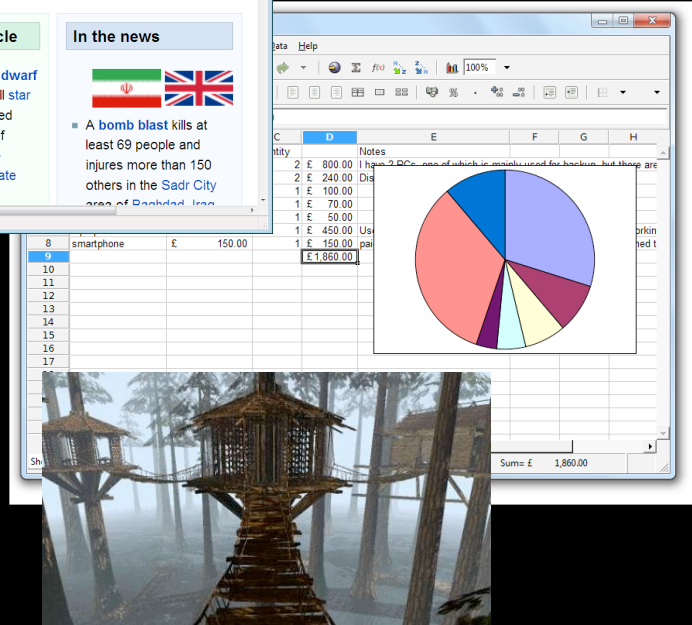
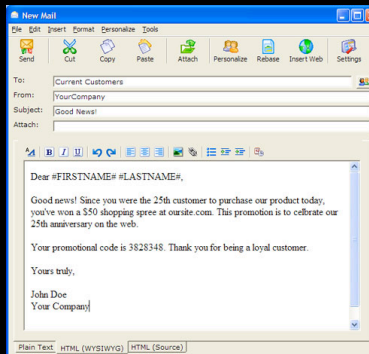
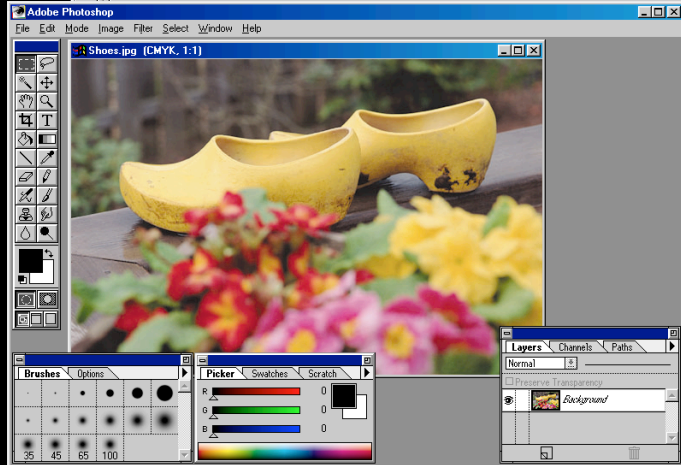
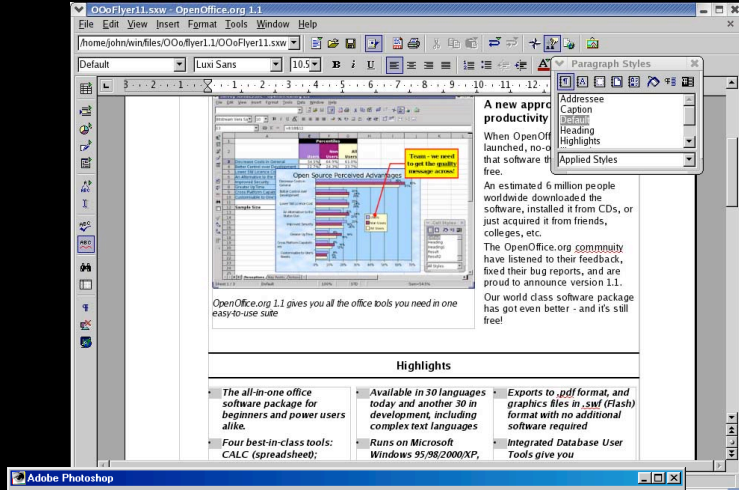
The Eras of Computing



Personal Workstations



What are PCs good for?



2005



Luca Bruno / AP

2013



http://www.steves-digicams.com/news/the_papal_ceremony_shows_an_abundance_of_smartphone_and_tablet_cameras.html

Michael Sohn / AP

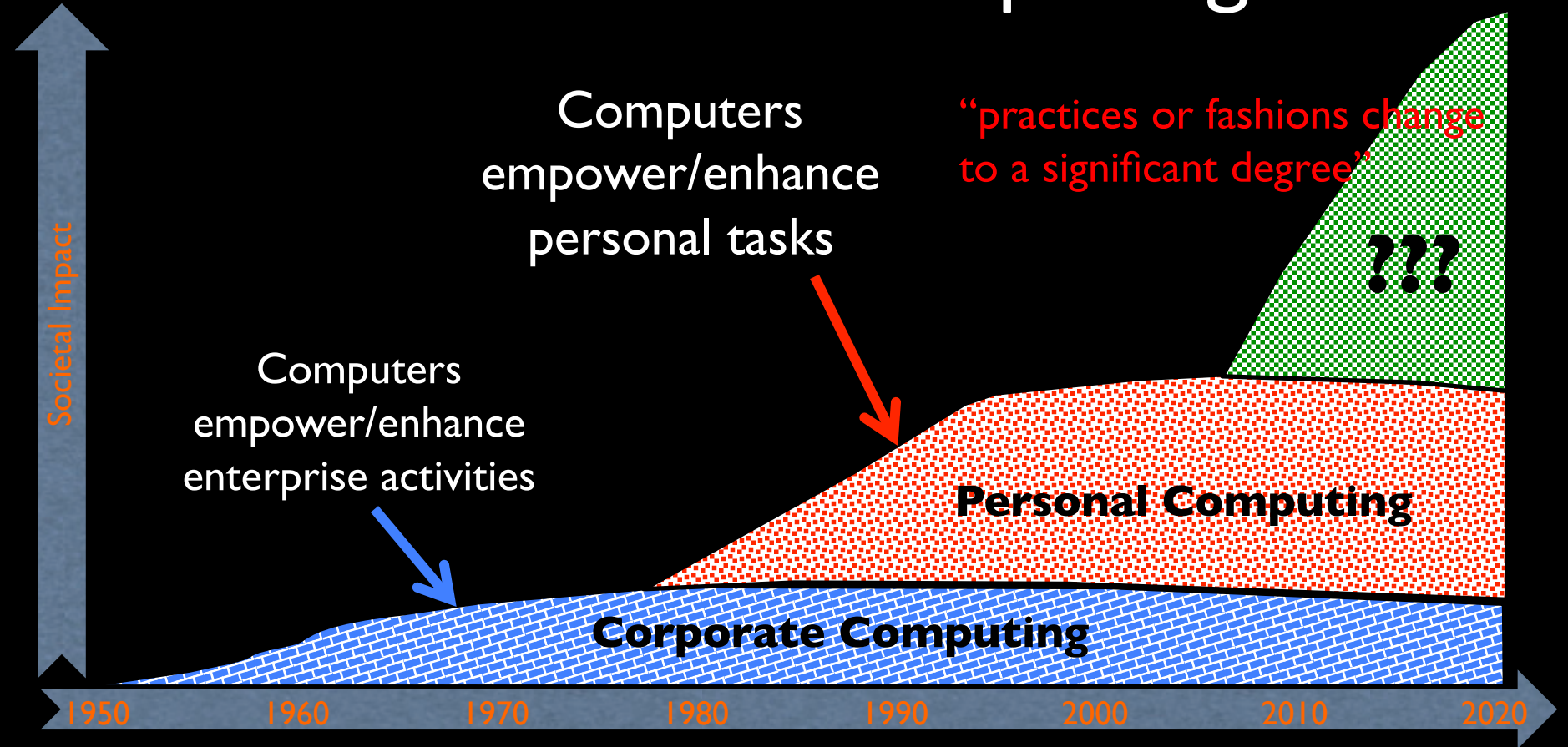
Ubiquitous

u·biq·ui·tous /yōō'bikwətəs/

adjective

present, appearing, or found
everywhere.

The Eras of Computing



The New Computing Era

- Computing augmented life
- Ubiquitous access to information
- “Devices” not “computers”
- Analysis and control of the physical world



“Computing enhances the world I live in. I need my digital stuff (data and apps) right now, wherever I am, using whatever device is available. I can’t live without it!”



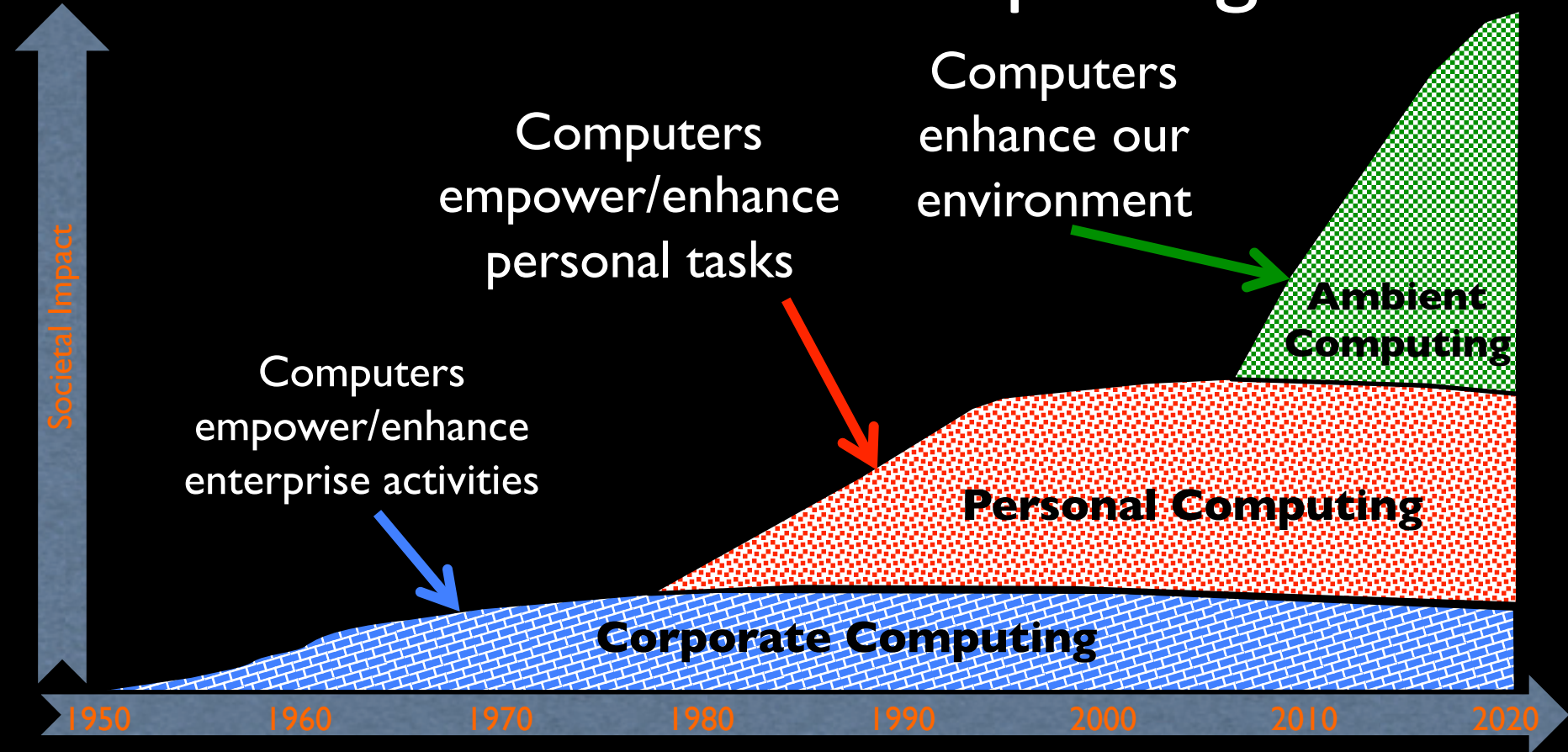
Ambient

am·bi·ent /am-bee-uhnt/

adjective

1. of the surrounding area or environment.
2. completely surrounding; encompassing.

The Eras of Computing



Computing Embedded Everywhere



Die Waffen der Self-Tracker

Für das SonntagsBlick magazin fünf Gadgets zur Selbstüberwachung am Körper montiert. Der Sleep Tracker von Zeo misst die Anzahl und Dauer von Tiefschlaf-, Traum- und Wachphasen. Wer schlecht schläft, kann damit überprüfen, welche Verhaltensänderung ihn besser schlafen lässt

Das iPhone ist so etwas wie die zentrale Steuereinheit der Selbstvermesser. Es kommuniziert mit anderen Geräten, erstellt Bewegungsprofile und schickt die Daten anschließend in die Cloud. Auf Plattformen wie Quantiq fließen alle Daten zusammen – dort vernetzen sich die Nutzer und tracken sich gegenseitig www.quantiq.com

Das Gerätchen am Schuh ist ein Schrittzähler von Fitlinac. Es überwacht die gelaufenen Distanzen und gibt Auskunft über die verbrannten Kalorien. Mit eigenen, im Schuh eingebauten Monitoring-Systemen arbeiten auch die Sport-Giganten Nike und Adidas

Der Pulsmesser von Wahoo kommuniziert direkt mit dem iPhone. Dieses schickt die Daten in die Cloud – Nutzer von Quantiq können die Werte direkt in ihr Profil einfließen lassen. Gerade für Sport-Anfänger ist die Pulskontrolle laut Experten sehr wichtig, weil sich die meisten Menschen überschätzen

Zur Pulsuhr von Garmin gehört ein Brustband, das die Pulsrate am Handgelenk fängt. Die Daten lädt die Uhr anschließend in die Datenwolke hoch. Dank eingebautem GPS-Empfänger erstellt sie auch Bewegungsprofile. Gelaufene Strecken sind also gespeichert. Das erleichtert die Planung und das Überprüfen von Fortschritten



Körper unter der Lupe

1 Der Glucose-Meter von Bayer mit USB-Anschluss misst den Blutzuckerspiegel. 2 Der Schrittzähler von Fitbit hält fest, wie viel man sich bewegt. 3 Das Blutdruckmessgerät von Withings lässt sich ans iPhone anschließen. 4 Die Withings-Waage misst Gewicht, Körperfett und Muskelmasse und schickt die Daten via WLAN ins Internet.



Where?

What?

Login / Sign Up Menu

Personal Weather Station: INORDRHE252

Environment

PWS: Meschede, NORDRHEIN-WESTFALEN, Klaus, DEUTSCHLAND. software type: HP1001 V1.0.8

Favourite

Details →



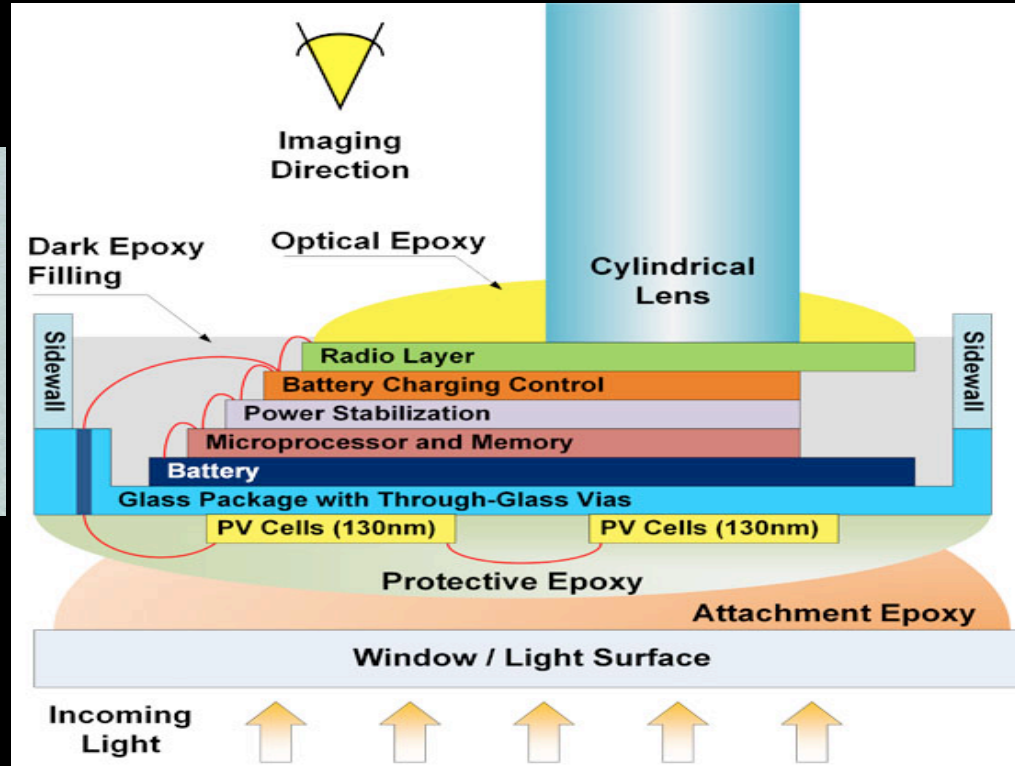
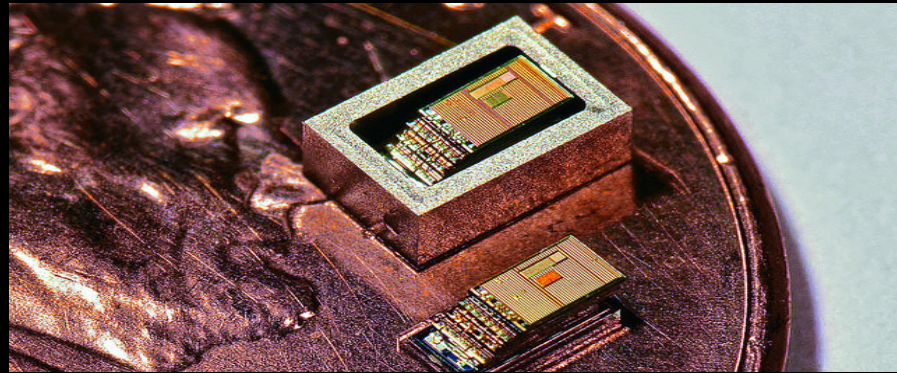
Freescale Kinetis KL03
June 2014

32-bit ARM Microcontroller
48 MHz
32KB Flash
8K ROM
2KB RAM

\$0.75 (USD), quantity 100K

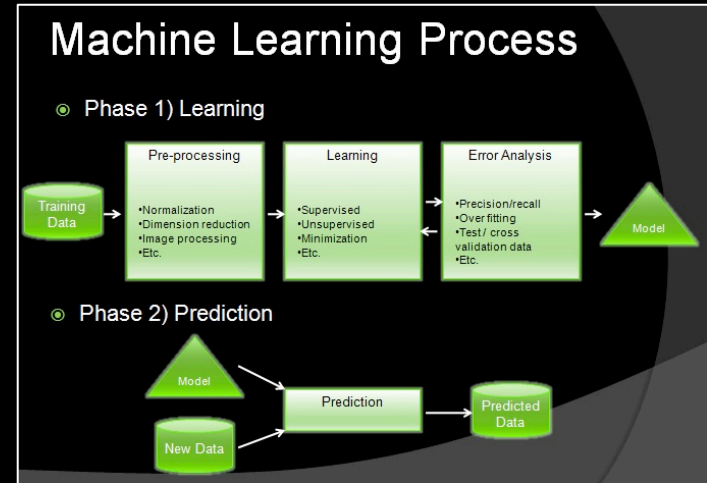
Smart dust?

Michigan Micro Mote



New Software Techniques

- Machine Learning
- “Block chains”
- Big Data
- Federated Computing



<http://www.codenproject.com/Articles/336147/Large-Scale-Machine-Learning-using-NVIDIA-CUDA>

Era

“spans of time, before and after which the practices or fashions **change** to a significant degree” — Wikipedia

Fundamental Change

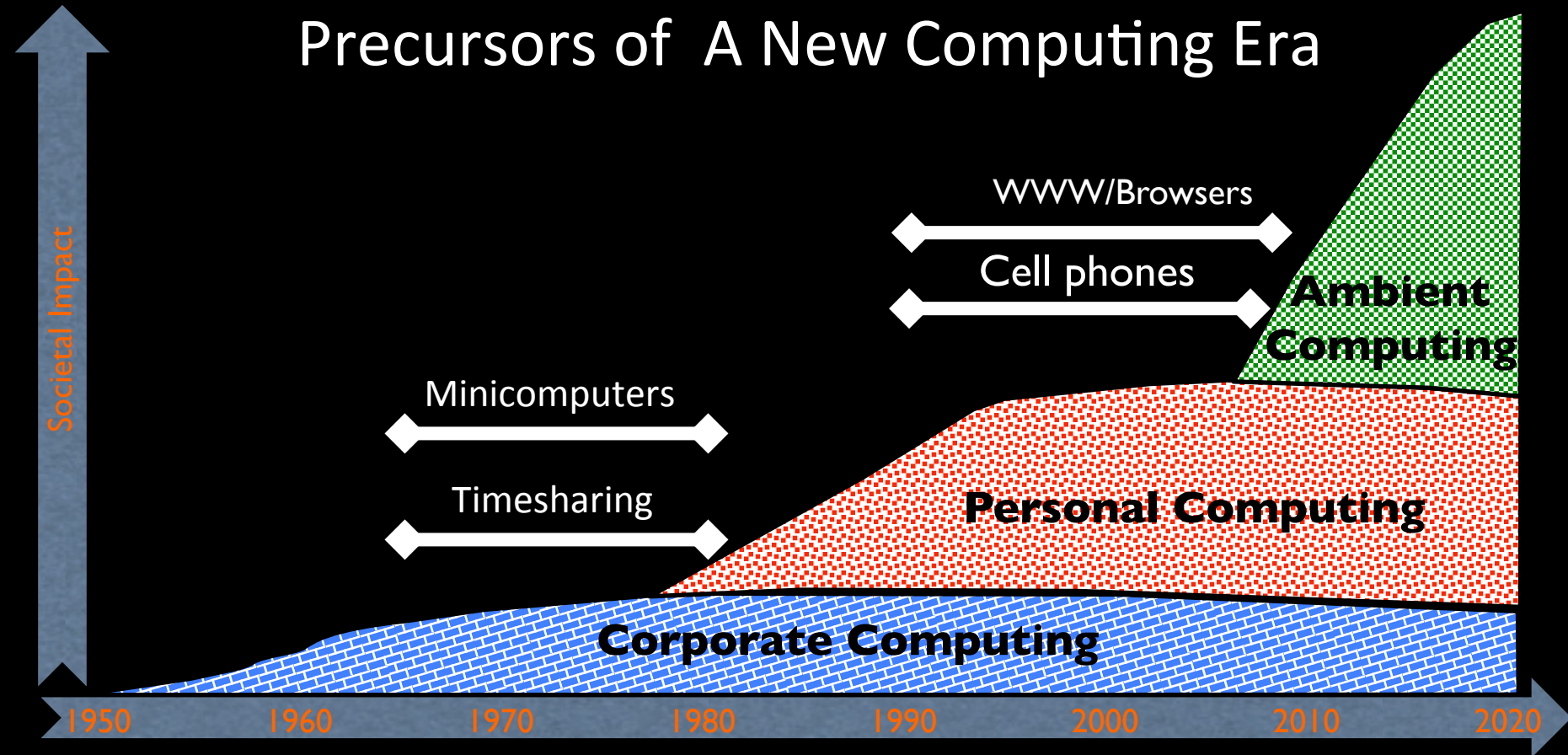


- We're mostly used to incremental, evolutionary change
- Fundamental change is rare and hard to recognize
- Usually can't prepare for major discontinuities and shouldn't worry about them...
- ... except if you are in the midst of such change

Forces

Transitional Technologies

Precursors of A New Computing Era



Transitional Technologies

Precursors of A New Computing Era

Societal Impact



WWW/Browsers

Cell phones

Ambient Computing

Personal Computing

Corporate Computing

1950

1960

1970

1980

1990

2000

2010

2020

New Perspectives are needed but the previous era thinking can be blinding

- “I think there is a world market for maybe five computers.” – T.J. Watson Sr, President IBM, 1943 (but probably misattributed)
- “There is no reason anyone would want a computer in their home” – Ken Olson, Founder and CEO Digital Equipment Corp, 1977
- “There’s no chance that the iPhone is going to get any significant market share.”, Steve Ballmer, CEO Microsoft, 2007

Transitional Early Products

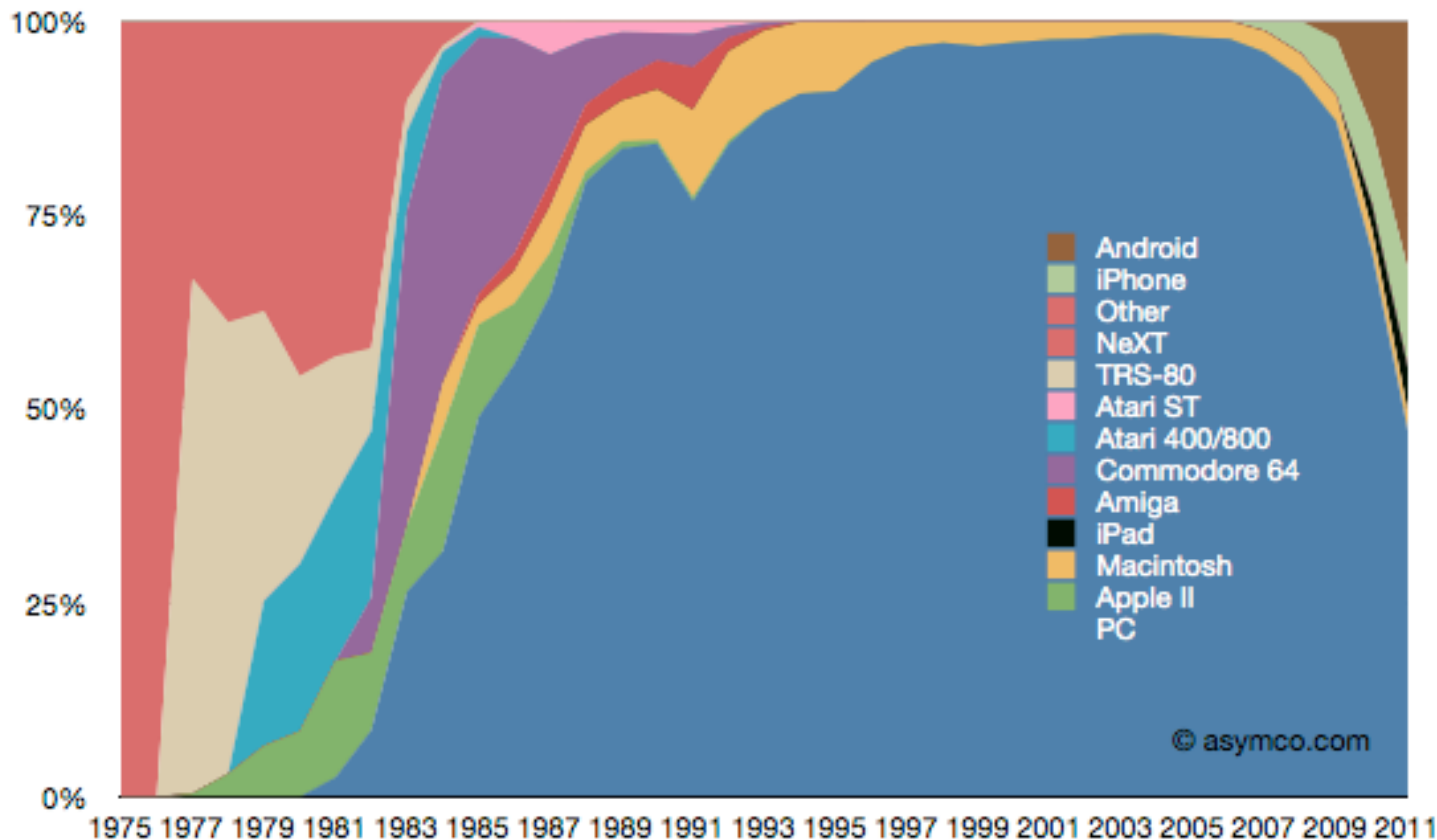


Change is incremental but accumulates rapidly



Chaos Precedes Stability

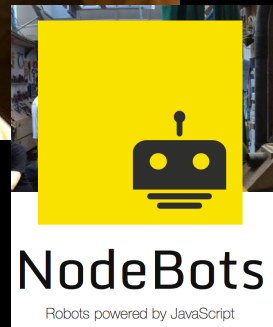
The Rise and Fall of Personal Computing



Smartphones and Tablets are the starting point not the end point



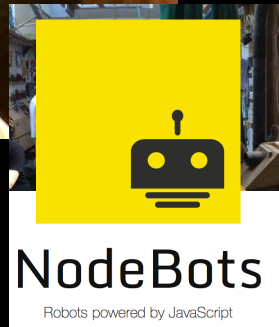
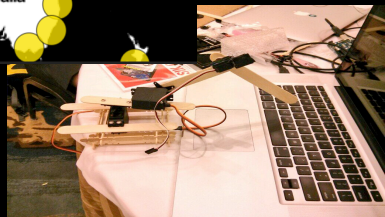
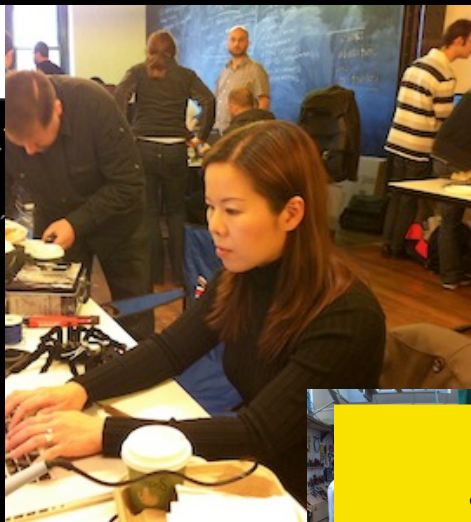
Grass Roots Innovation



<http://nodebots.io/>

Grass Roots Innovation

Find a meetup near you



<http://nodebots.io/>

C11 (L) TOTAL 25

A	B	C	D
ITEM	NO.	UNIT	COST
MUC	4	12	55
BUNG	1	400	100
TONER	25	400	1248
EYE	2	4	9
RAKE			
CUT			
TONER			
SNUFF			
SUBTOTAL			13155.50
9.75% TAX			1282.66
TOTAL			14438.16



A: SAMPLE.TXT PAGE 1 LINE 1 COL 01

CURSOR: ^A=left word ^S=left char ^D=rig
 ^E=up line ^X=down line
 SCROLL: ^Z=up line ^W=down line ^C=up
 DELETE: DEL=char left ^G=char right ^T=wor
 OTHER: ^V=insert off/on ^I=tab RETURN=
 ^N=insert a RETURN ^B=reform to end para
 HELP: ^J displays menu of information commands
 PREFIX KEYS ^Q ^J ^K ^O ^P display menus of add

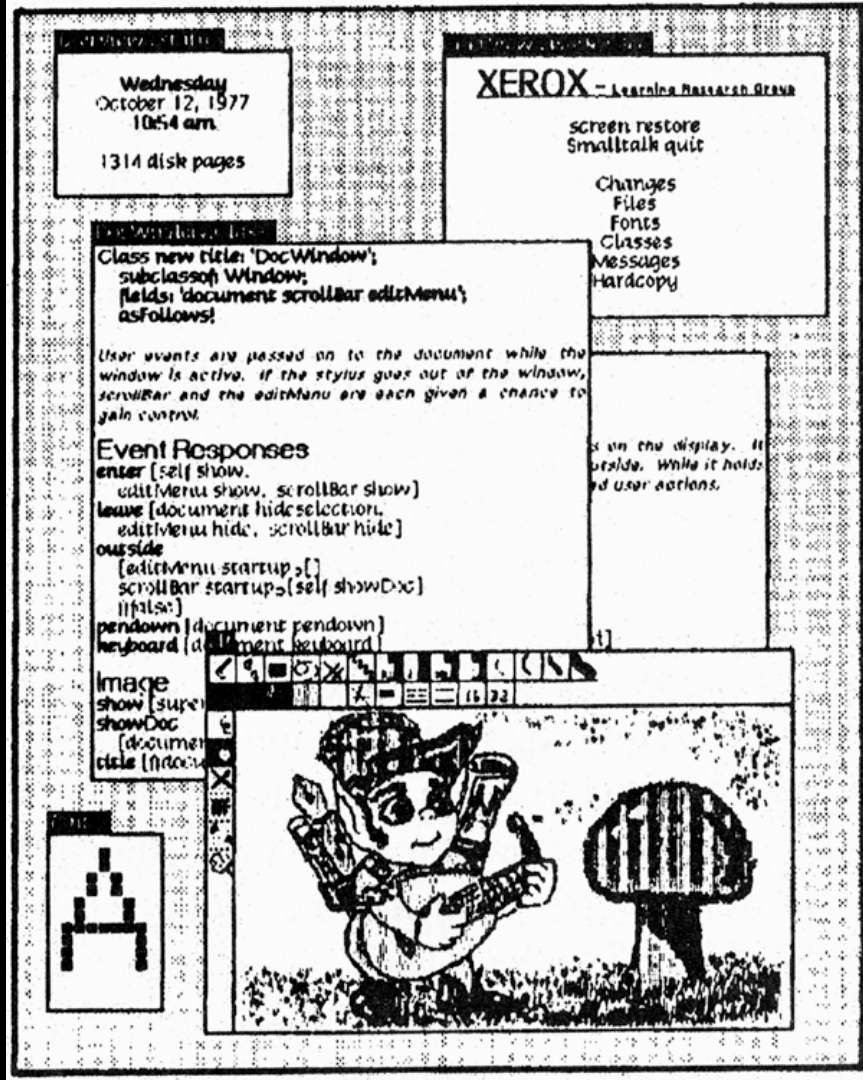
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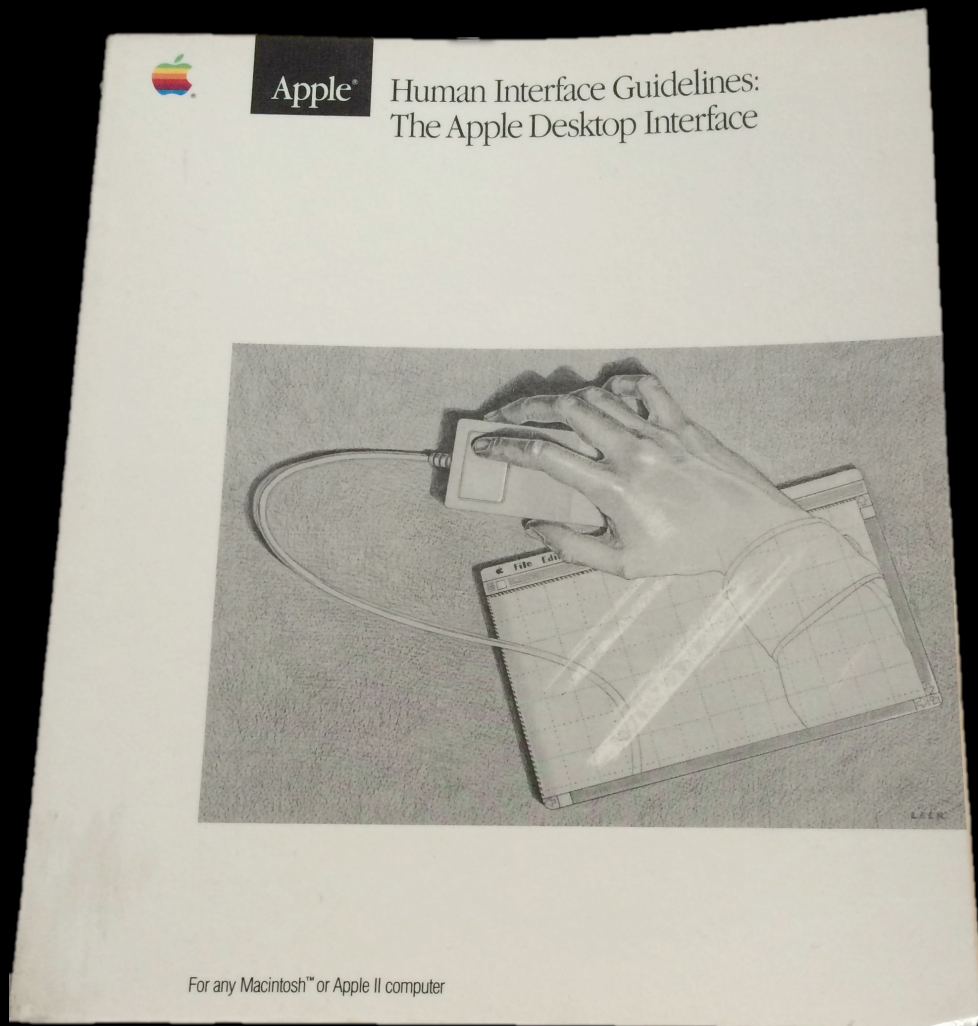
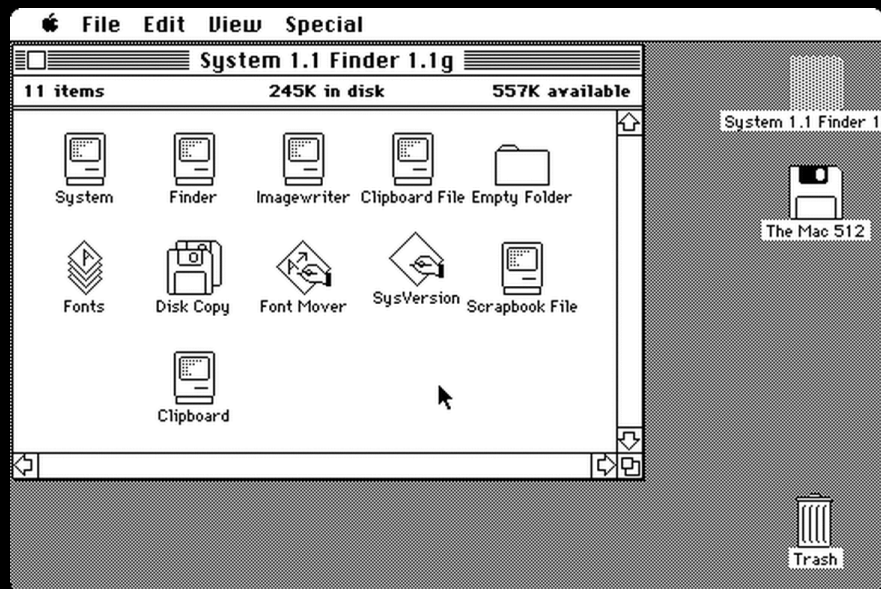
^BSAMPLE TEXT^B

^SWordStar^S is a CP/M compatible, screen-oriented processing system with integrated printing capabilities. Both the initial entry of text and the alteration of previously entered text are displayed directly on the screen, as you should be able to see. Most formatting functions take place immediately, resulting in the display of a true print image; additional enhancements are performed during printing, if desired. ^Bosborne Comput Corporation^B provides ^SMailMerge^S with ^SW

New Metaphors Drive Adoption



Metaphors then Pattern Languages

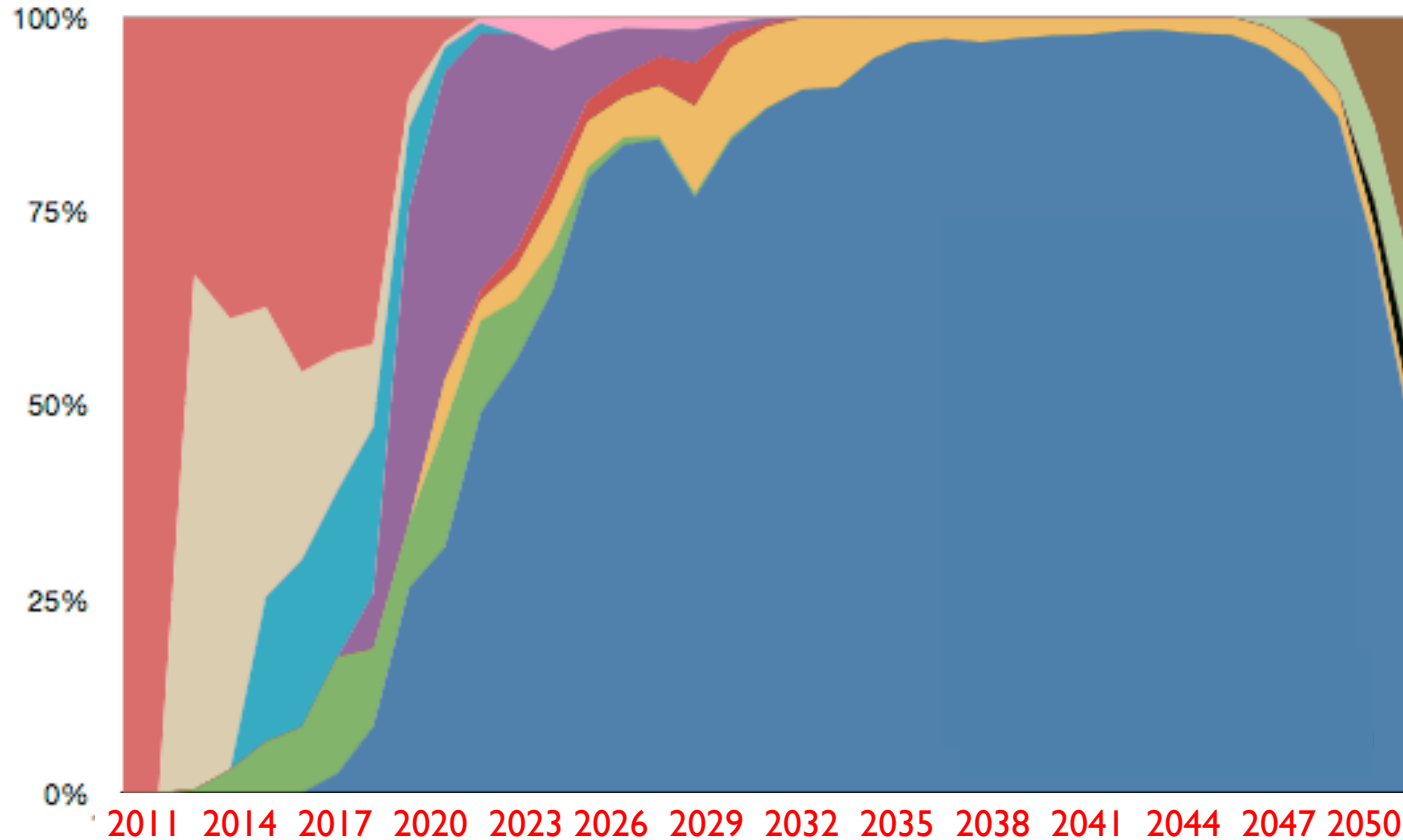


From Chaos Emerges

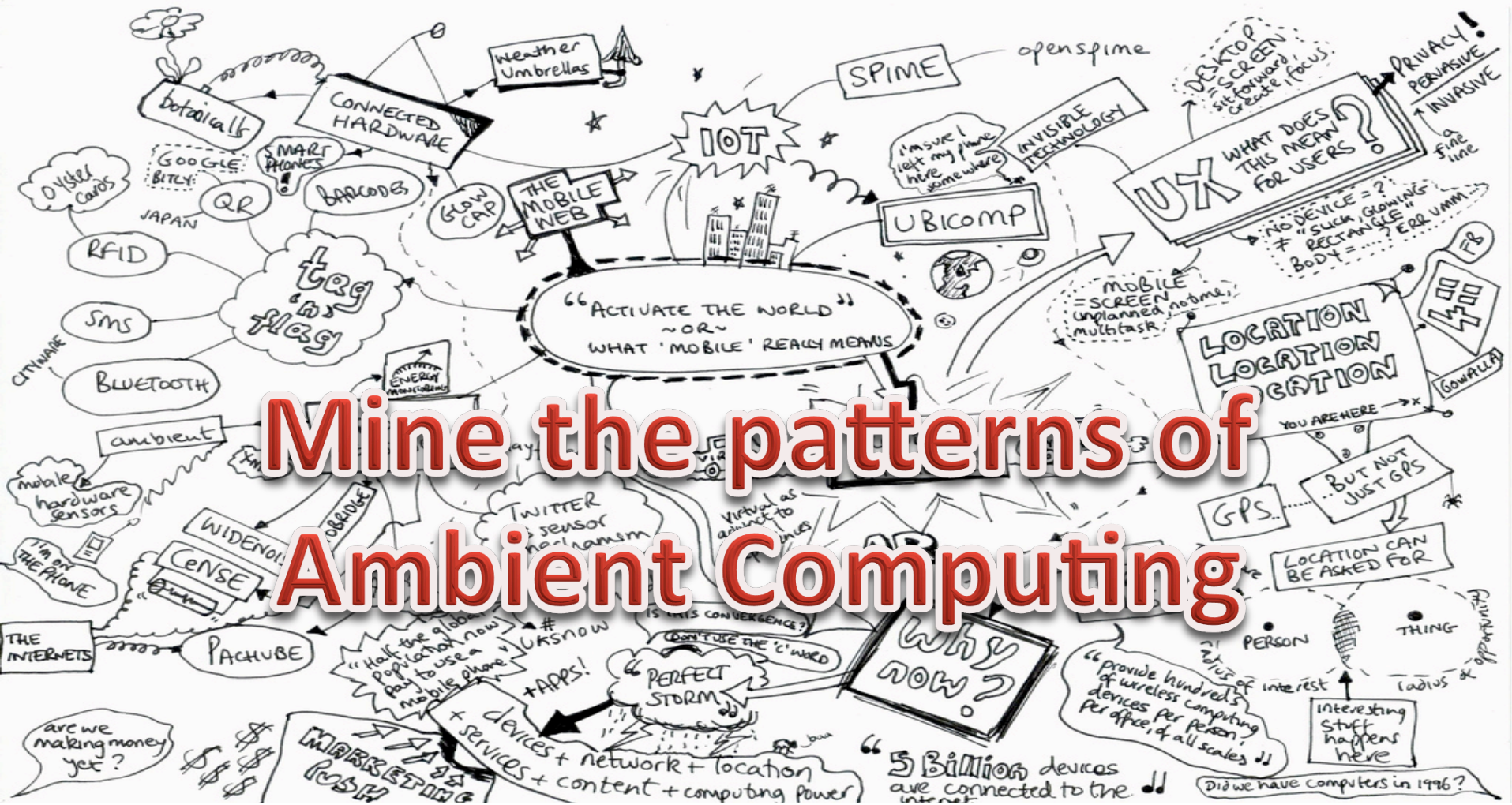
- New Business Models
- “Killer Applications”
- New Corporate Winners and Losers
- Dominant hardware and software platforms
- Dominant technologies
- Emergent Synergistic Combinations
- Regulations

Ultimately New Stability

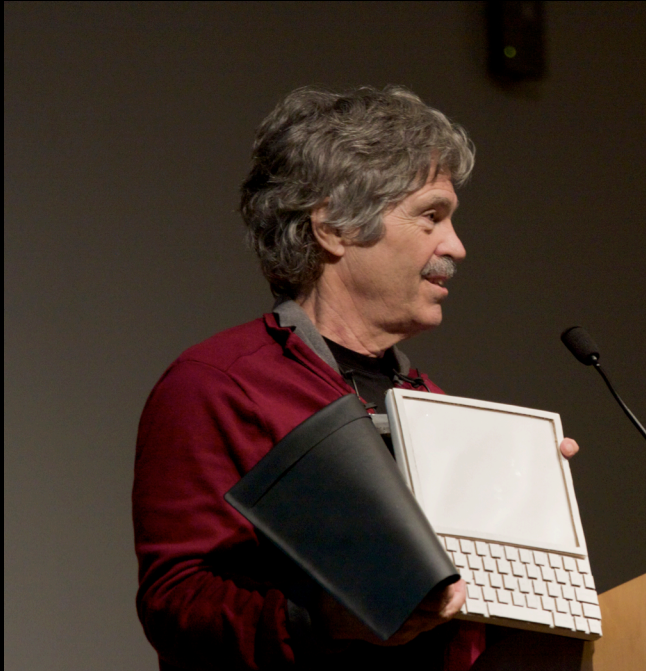
The Rise and Fall of **Ambient** Computing



A New Era of Opportunities for the Pattern Community



Assist invention of the key metaphors and pattern languages of the ambient computing era?



“Don’t worry about what anybody else is going to do... **The best way to predict the future is to invent it.**”

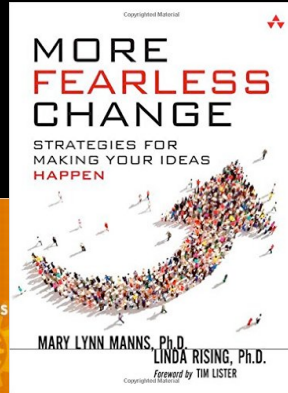
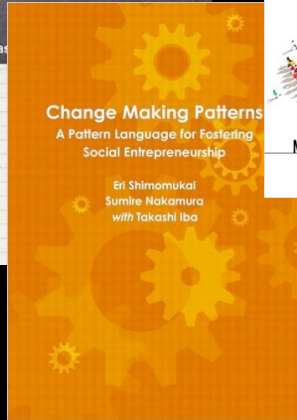
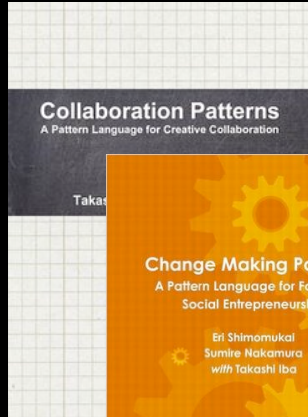
Alan Kay

A Pattern Language for Inventing the Future?

- Look 20 years into the future
- Extrapolate technology
- Focus on people
- Create a vision
- A team of dreamers and doers
- Prototype the future
- Live within the prototype
- Make it useful to you
- Amaze the world



Social Pattern Languages



Patterns for
living in a
computer
augmented
world
???

A Pattern
Language for
ambiently
connecting
people
???

Pattern Languages for Ambient Computing Technologies

Design Patterns for Ontologies in IoT



MARK UNDERWOOD | KRYPTON BROTHERS

@KNOWLENGR @KRYPTONBROTHERS

CO-CHAIR NIST BIG DATA WORKING GROUP, SECURITY & PRIVACY SUBGROUP

DOWNLOAD : KRYPTONBROTHERS.COM/MEDIA/IOTDAY2015.ZIP

9 APR 2015

PRESENTATION FOR IOT DAY 2015 - M UNDERWOOD - KRYPTON BROTHERS - @KNOWLENGR V1.2

2



Node.js Design Patterns

Get the best out of Node.js by mastering a series of patterns and techniques to create modular, scalable, and efficient applications

Mario Casciaro

PACKT open source

Decompose that WAR! A pattern language for microservices

Chris Richardson

Author of POJOs in Action

Founder of the original CloudFoundry.com

✉ @crichardson

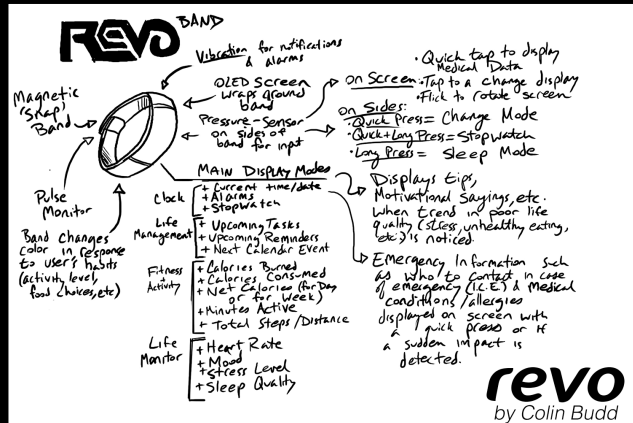
chris@chrisrichardson.net

<http://plainoldobjects.com>

<http://microservices.io>

QCon
SAO PAULO 2015

Pattern Languages for Ambient Computing Metaphors

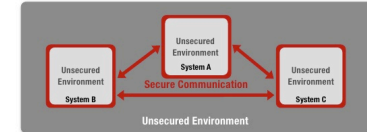


<http://colin-budd.com/>



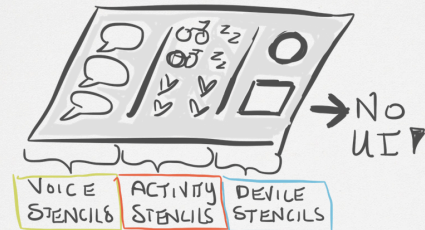
Security Patterns

- Security Integration Patterns provide common solutions to implement secure information exchanged across system/subsystems
- The most commonly used security pattern in integration is the combination of the Border Security Model with Secure data Tunneling



<http://www.slideshare.net/Angelo.Corsaro/integration-patterns-for-mission-critical-sys>

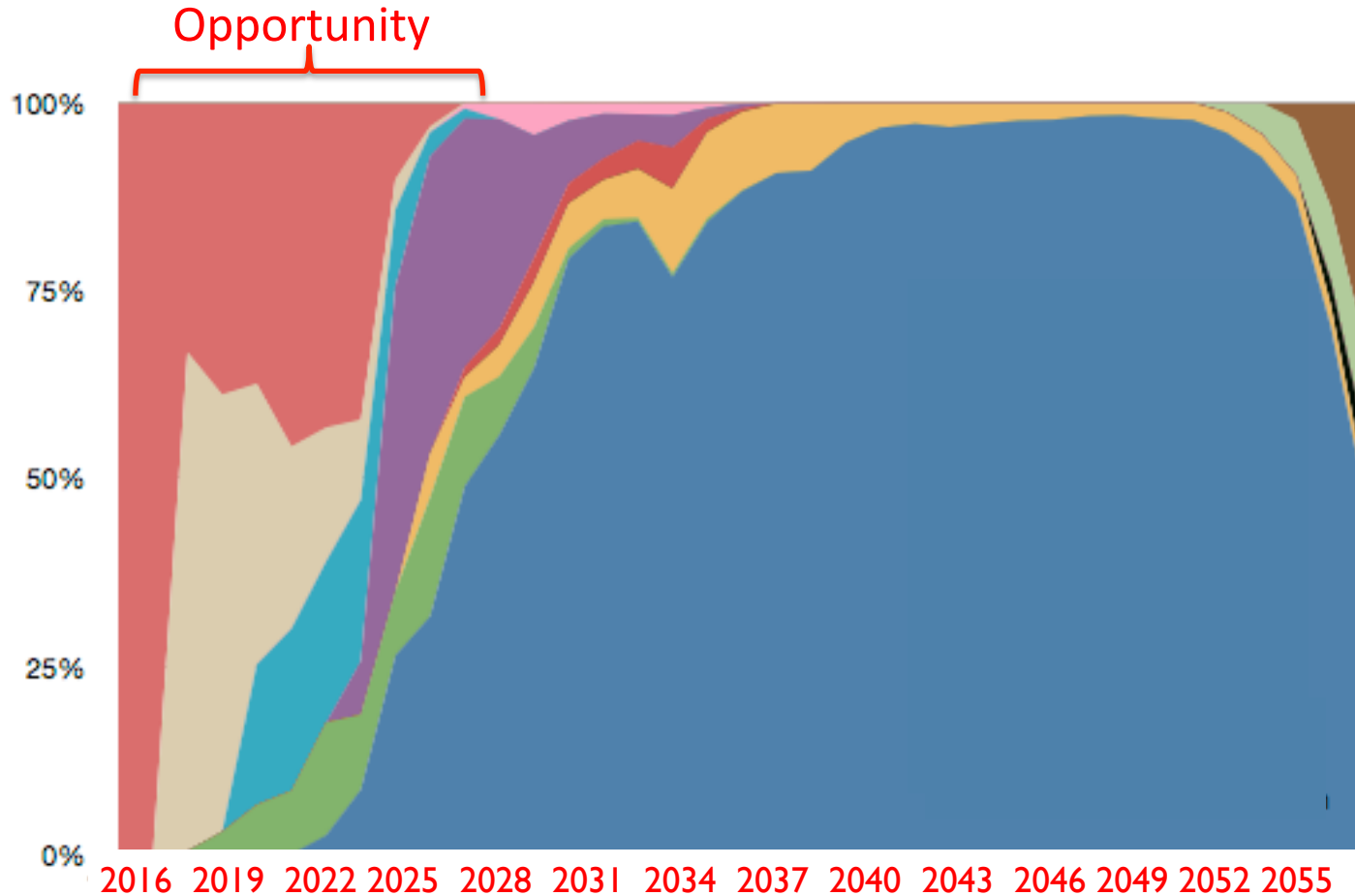
Sketching Wearable Apps



THE UI IS A SMALL PART...
IT'S REALLY ABOUT THE USER'S LIFE.

<http://www.kryshiggins.com/designing-for-wearables-sketchnotes-from-google-io/>

The Rise of Ambient Computing



Enjoy!



PC, Tablet, Network PCs and Smartphone

Sales in Millions

