

Information and Communication Tech (ICT) & Sustainability

1. Research & Projects
2. ICT & Economic Context
3. ICT as an Instrument for Sustainability





*Michael A. Herzog (ed):
Economics of Communication.
ICT Driven Fairness and Sustainability for Global
and Local Marketplaces, GITO 2015*



10/01
2017



ecoocom¹³

Ökonomie der Kommunikation
Kommunikation in Wirtschaftskreisläufen

<http://www.eco-com.net>

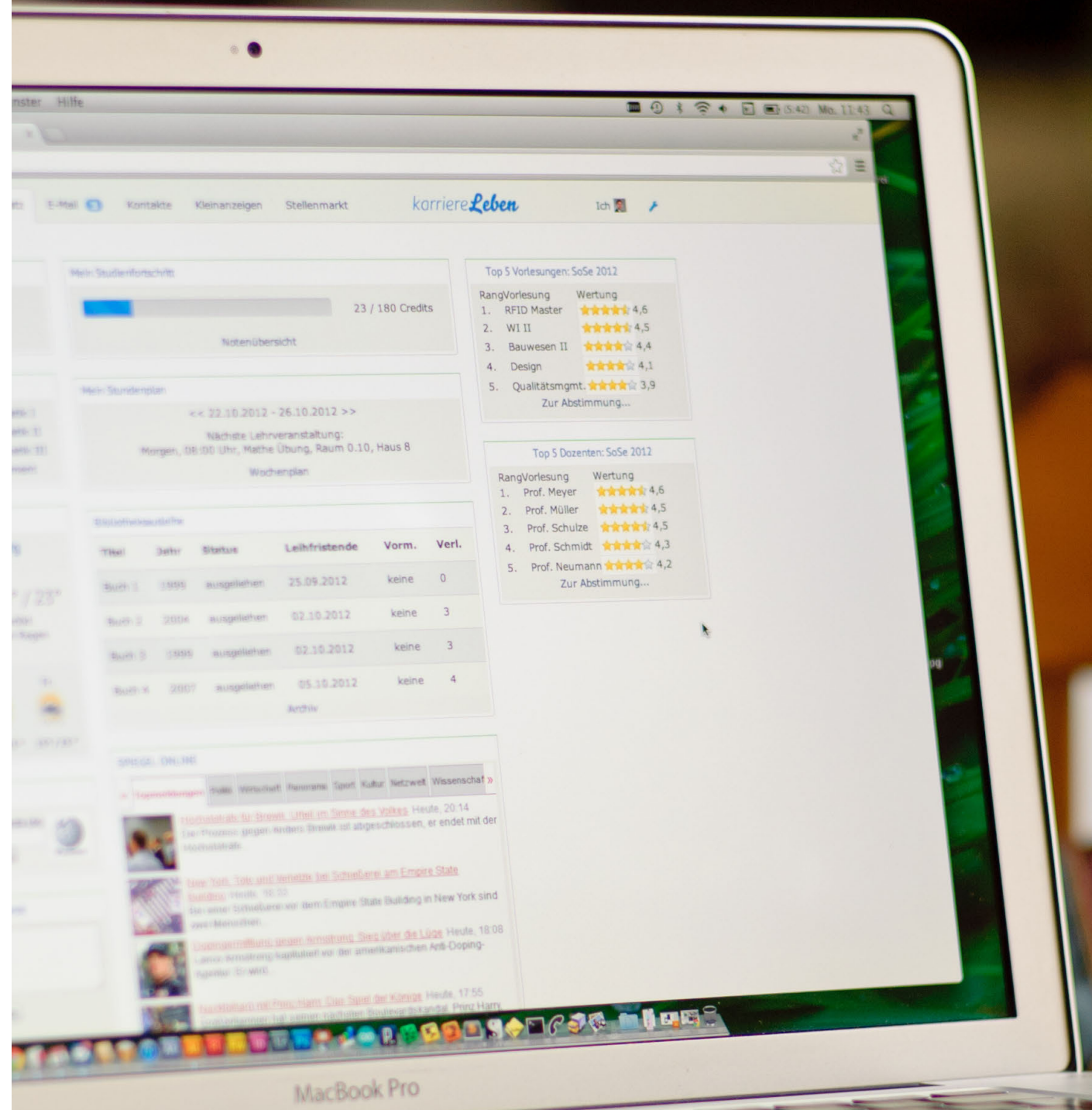
1


Research & Projects

- ▶ SPiRIT Group Magdeburg
- ▶ Lab
- ▶ ROSI-3D
- ▶ Empirical Analytics
- ▶ Conferences

karriereLEBEN

SocialMedia-Portal for Career- and Alumni-Development



 Bundesministerium für Bildung und Forschung

gefördert durch:




Research group
Science Projects in Radio and Information Technology

ROSI-3D

RFID locating in consideration of moving objects in a radio field with 3D-simulation

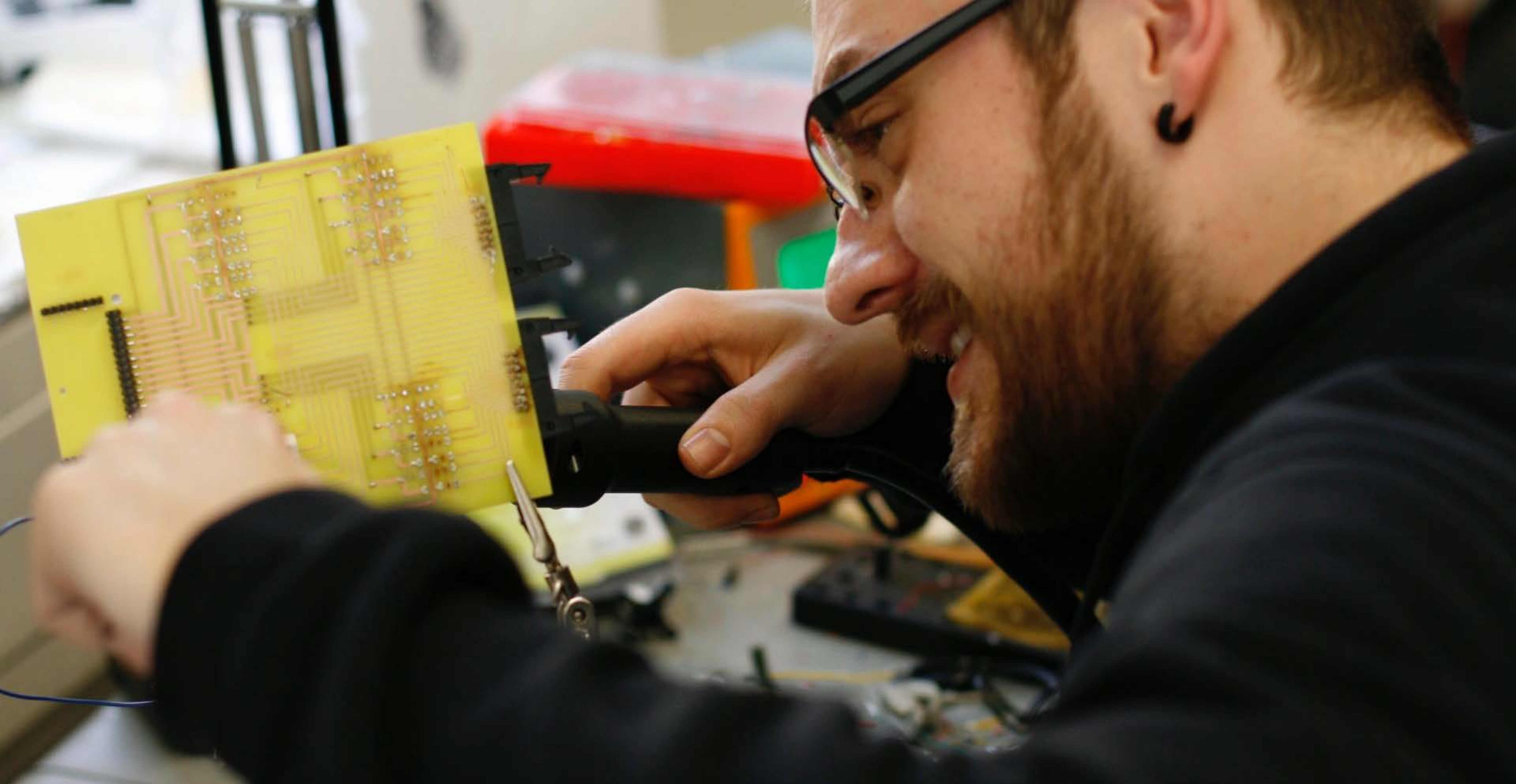


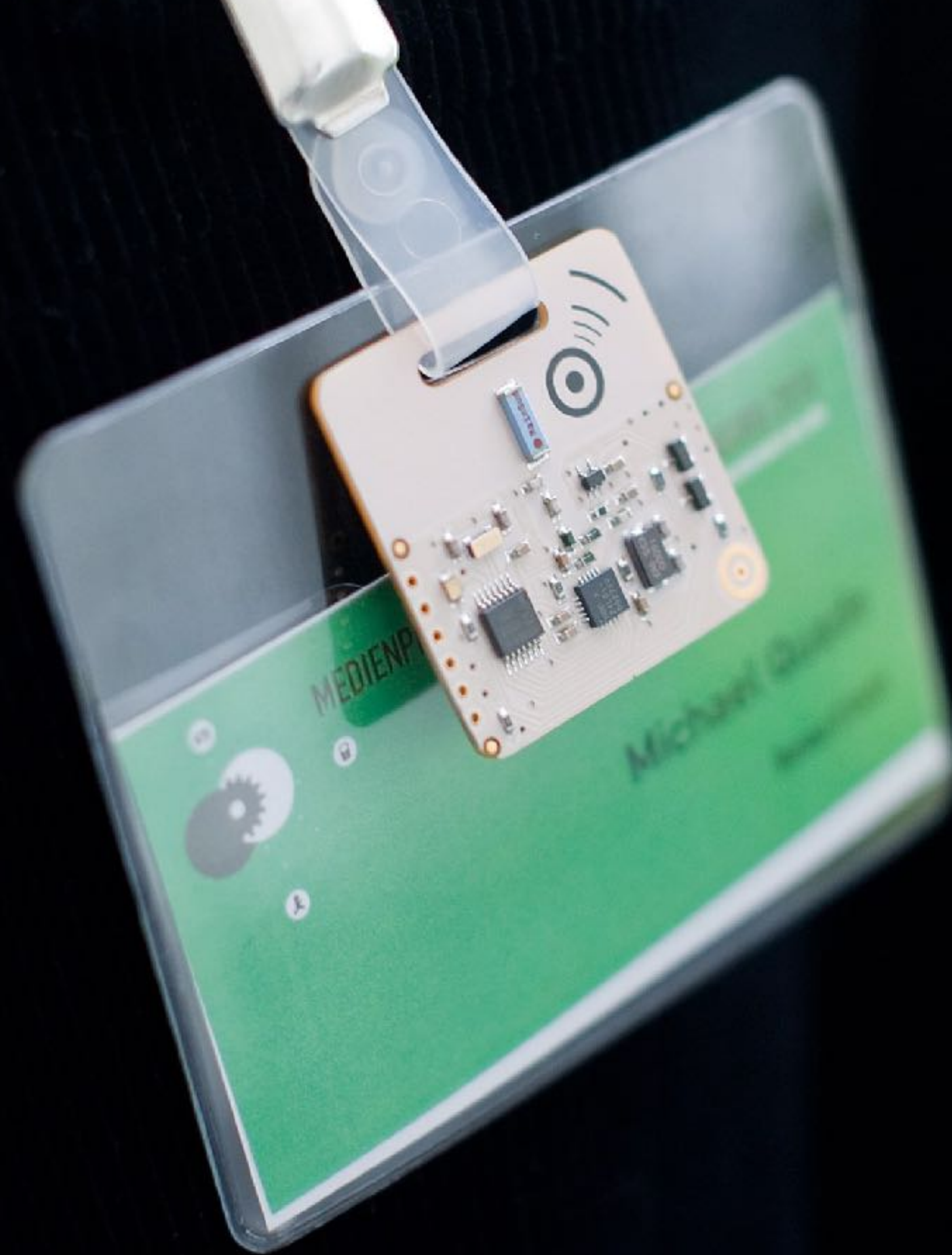
 Bundesministerium für Bildung und Forschung

gefördert durch:

profUnt 
Forschung an Fachhochschulen mit Unternehmen







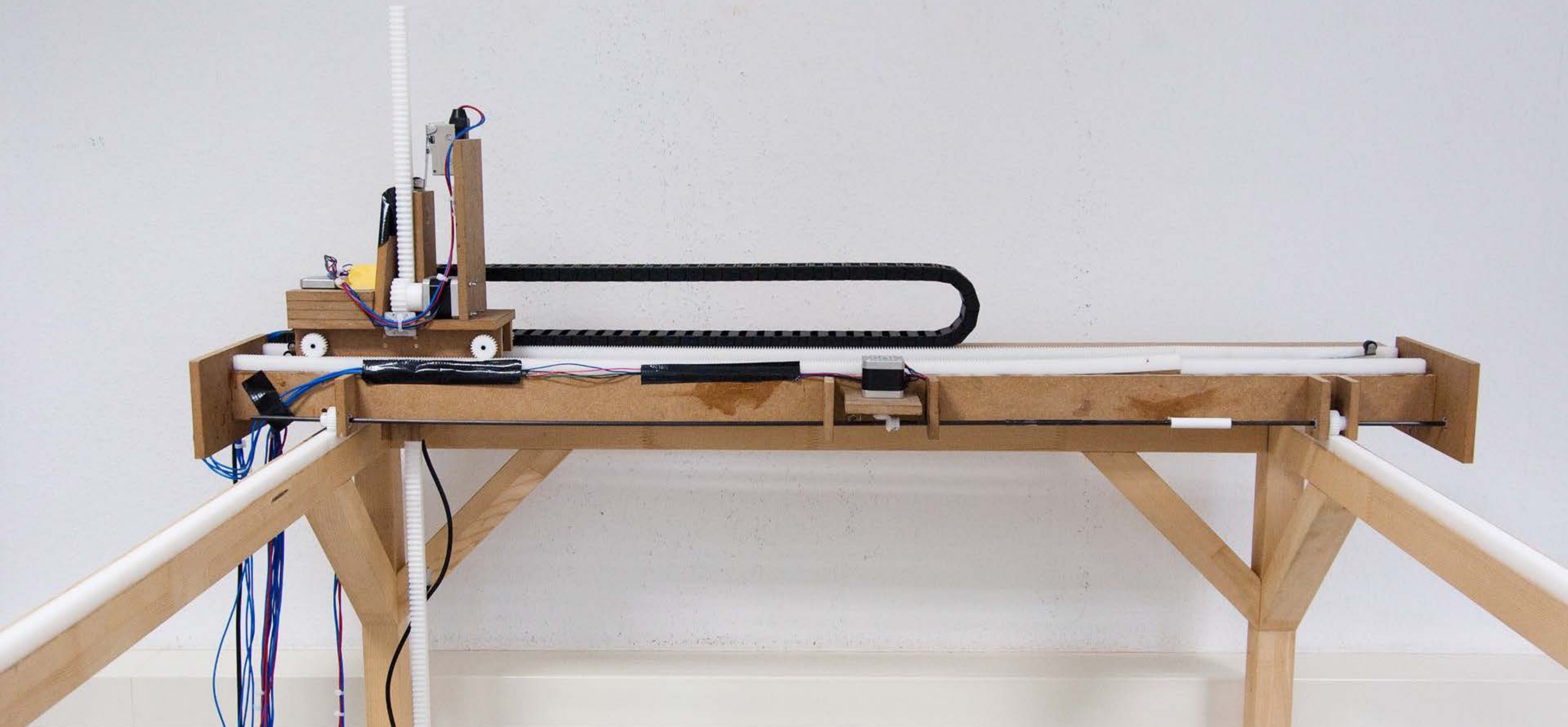


LIVE-ANSICHT

ALLE BENUTZER

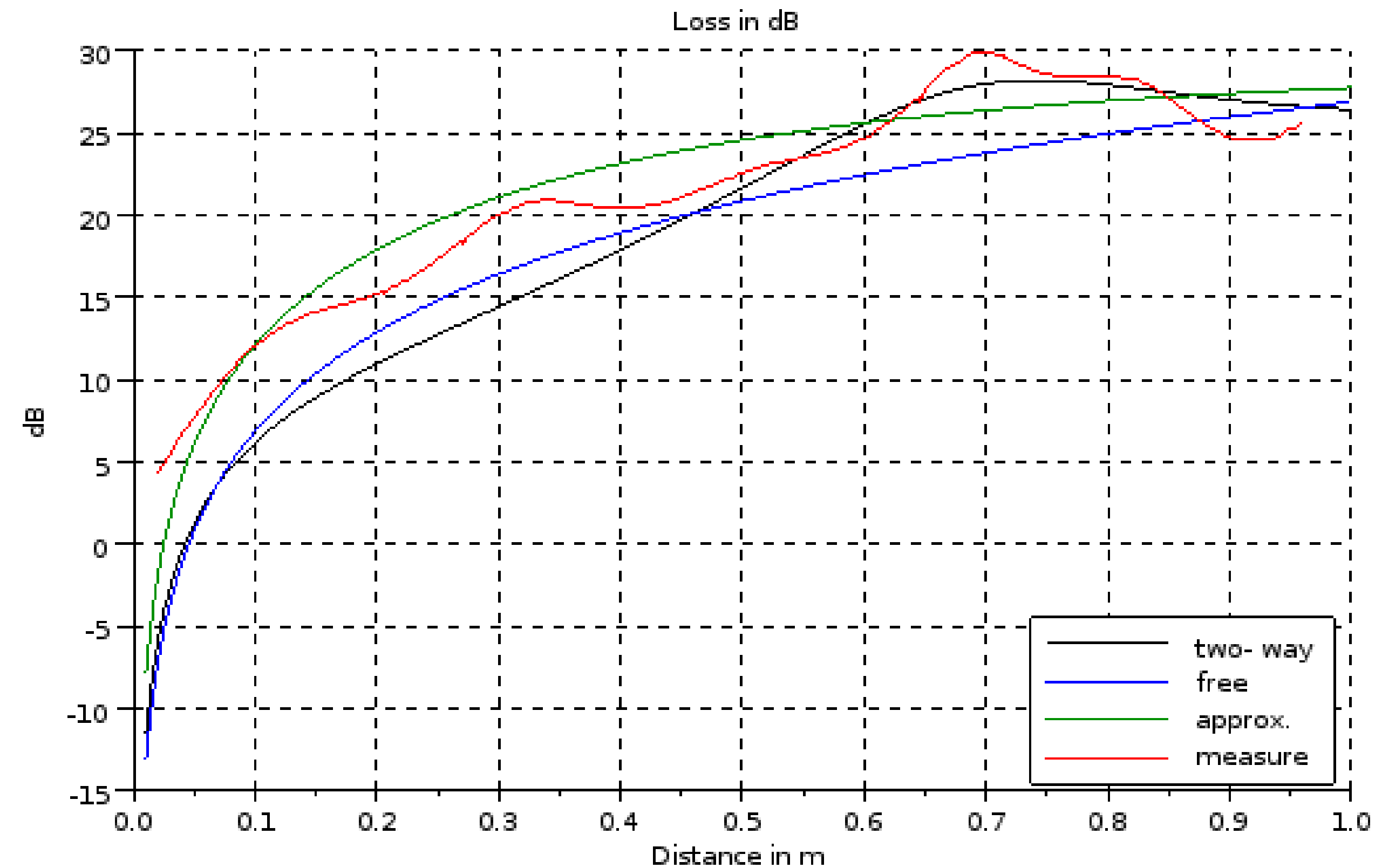
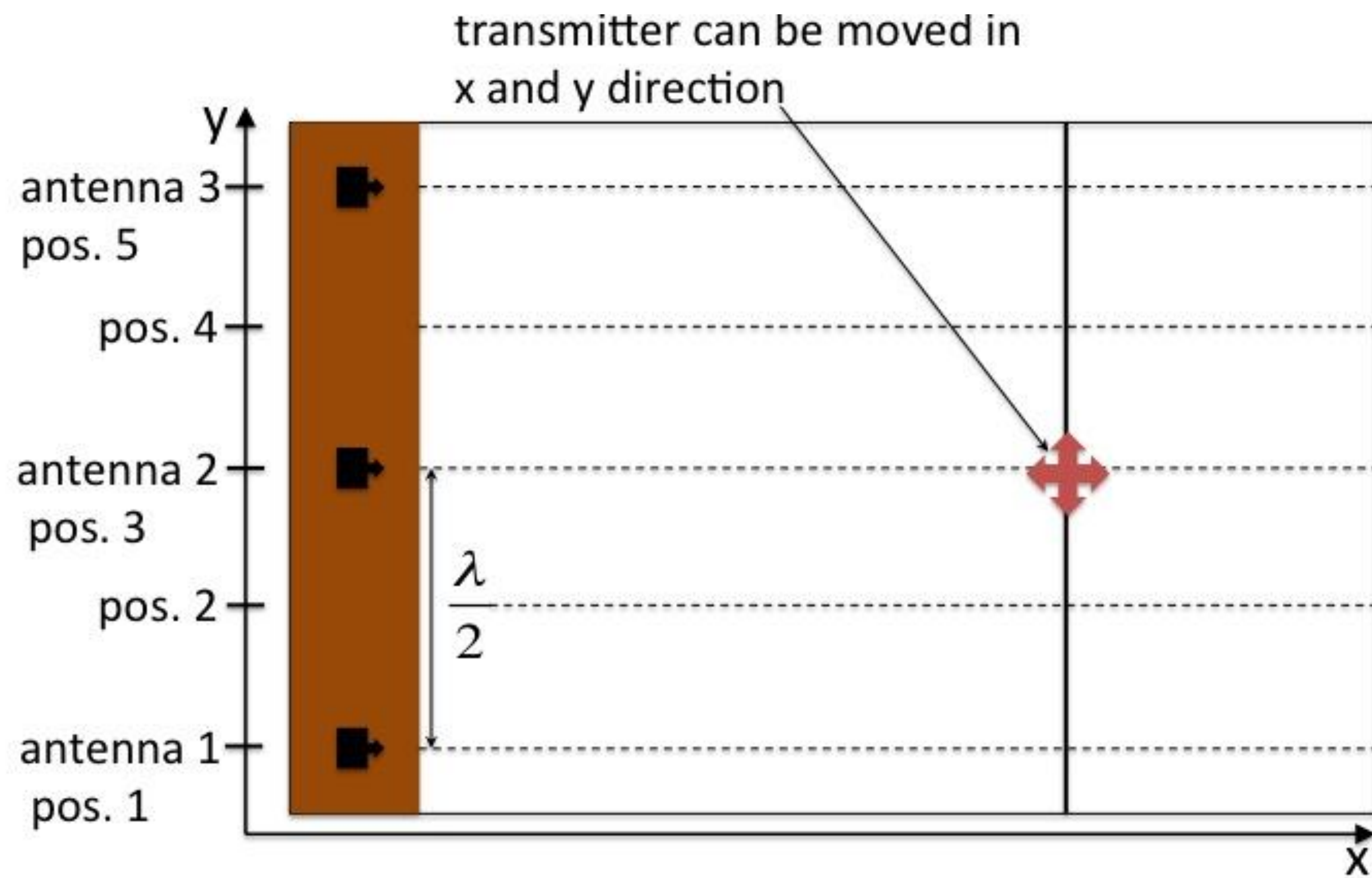


Analysis of the Radio Propagation Model at RFID Applications



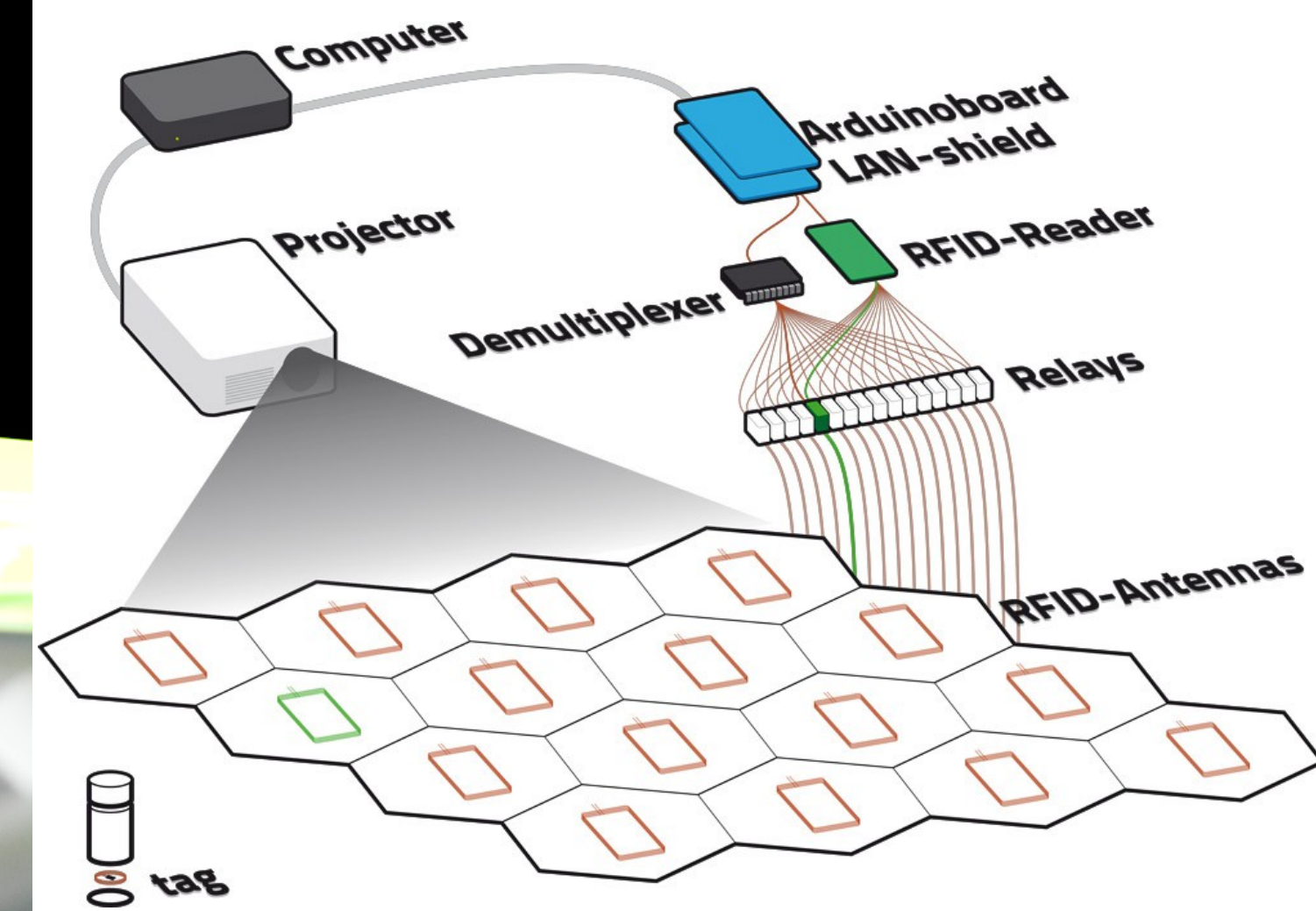
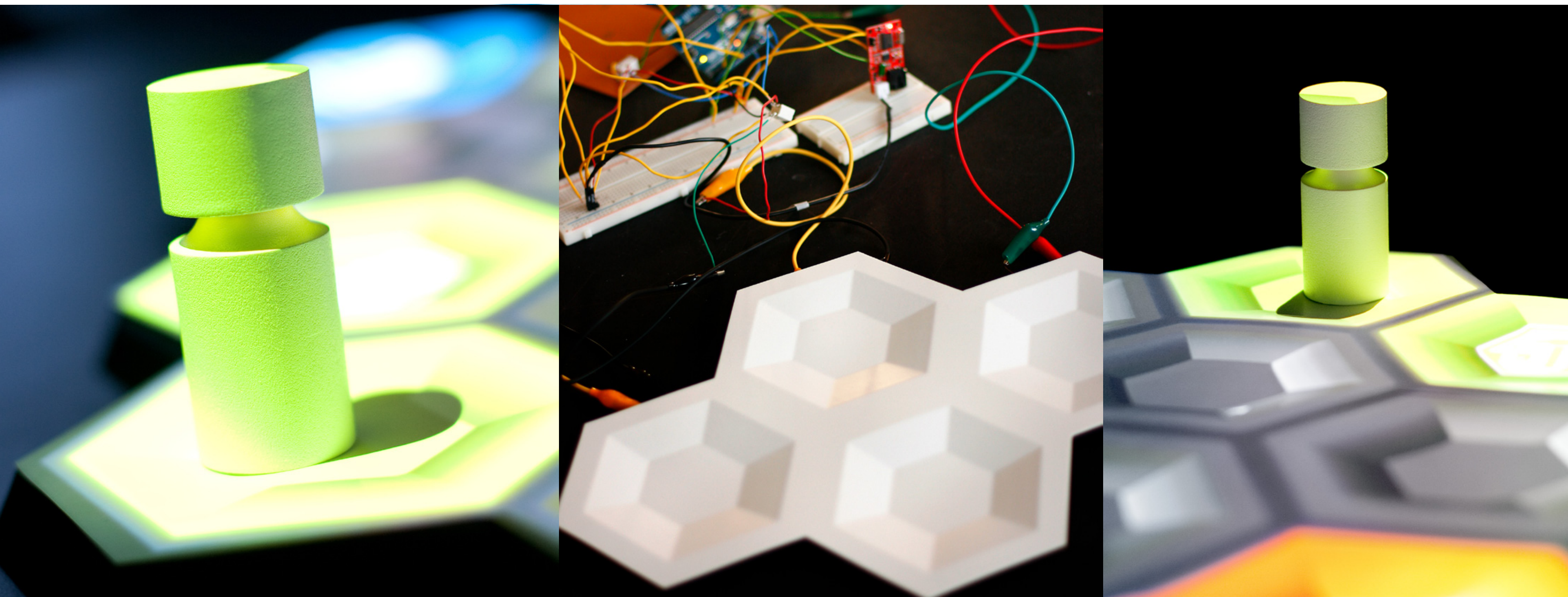
Analysis of the Radio Propagation Model at RFID Applications

$$L_{mp} = g_s g_r \left(\frac{4\pi d}{\lambda} \right)^2 \left| 1 + \sum_{n=1}^N \Gamma_n \frac{d}{d_n} e^{-jk(d_n - d)} \right|^2$$



Friedewald, O., Papenbrock, J., Herzog, M.: Analysis of the Radio Propagation Model at RFID Applications
 In: VDE ITG/IEEE European Conference on Smart Objects, Systems and Technologies, Smart Systec 2013

DiTAG: A digital-analog interface for board games



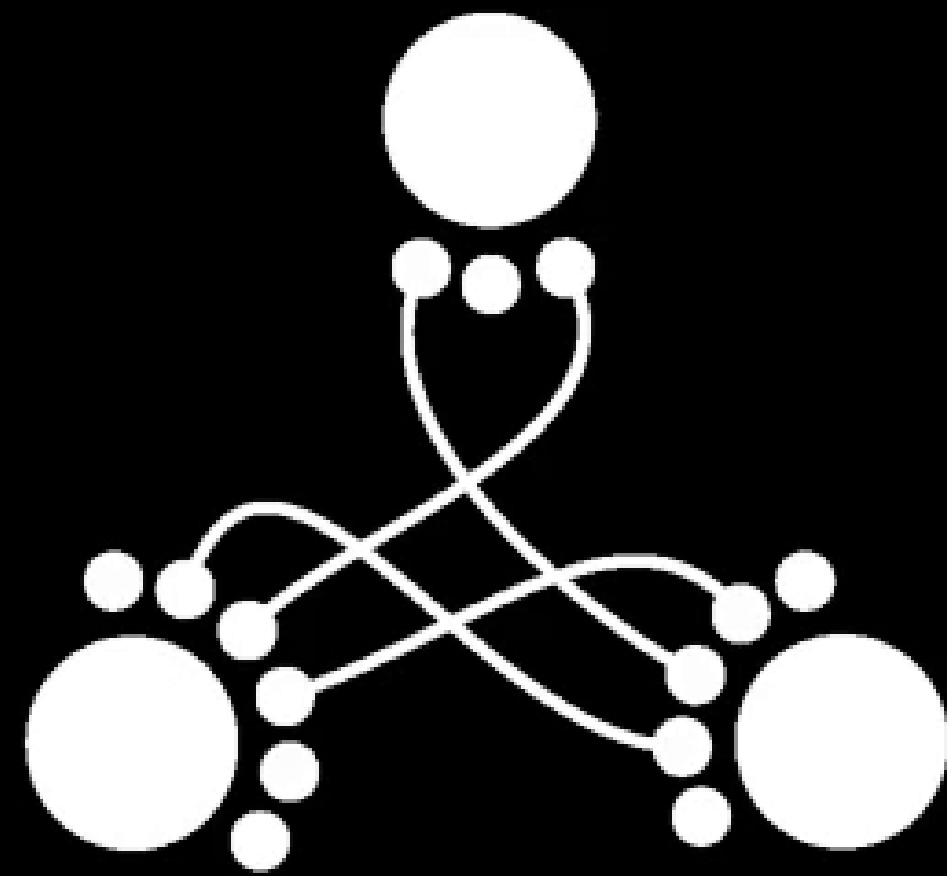
Krause, R., Haase, M., Hatscher, B., Herzog, M., Goutrié, C.: Computerspiele zum Anfassen: Ein digital-analoger Baukasten für Brettspiele. Proceedings "Mensch und Computer" Bremen 2013



A 3D rendering of a board game board with various pieces and tokens. The board is composed of grey hexagonal tiles arranged in a circular pattern. Several colored pieces are placed on the board: a yellow piece with a white token, a blue piece with a white token, a red piece with a white token, and a green piece. There are also several grey rectangular tiles scattered around the board. The word "Brettspiele" is written in large, white, bold letters across the center of the image.

Brettspiele

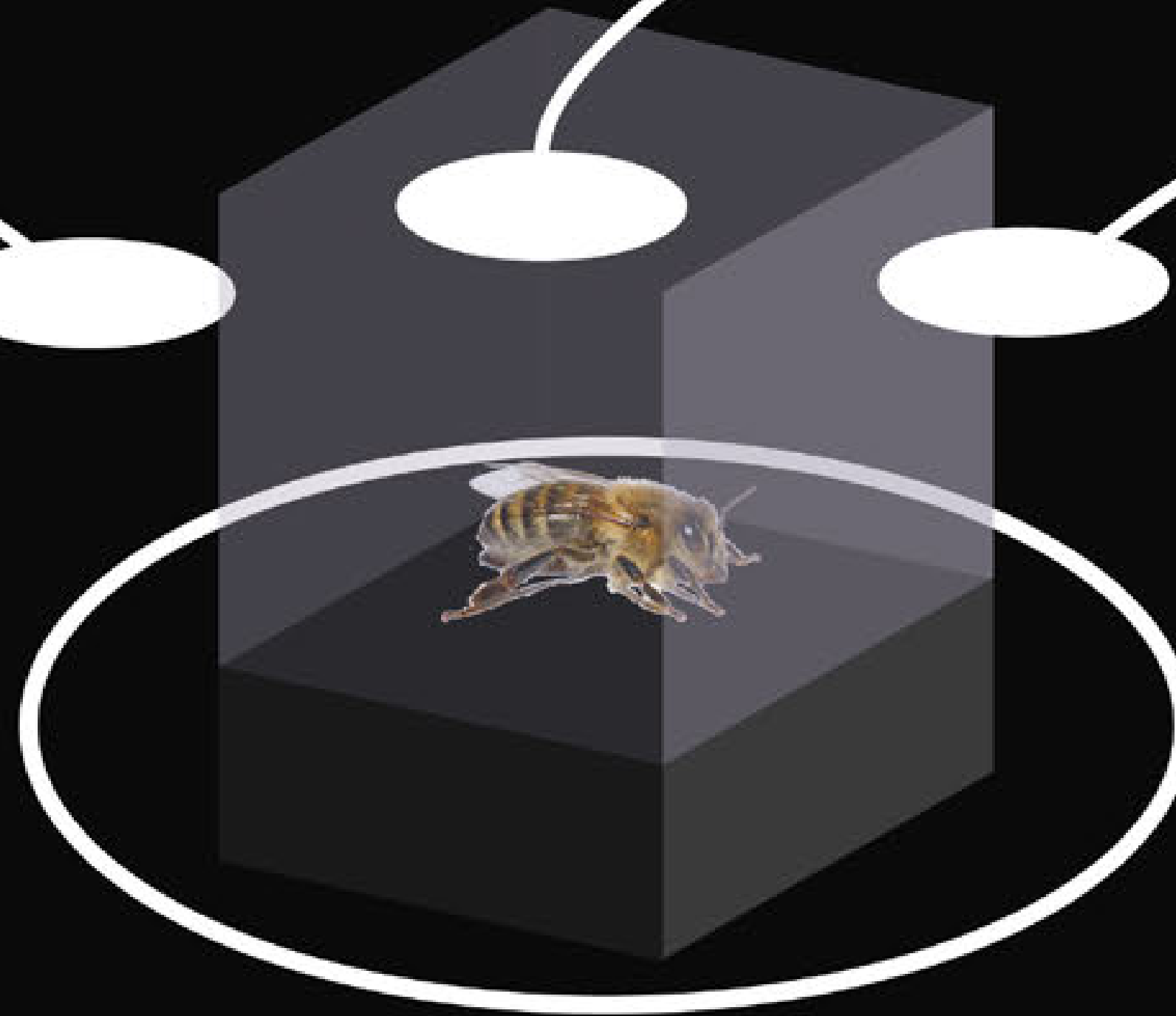
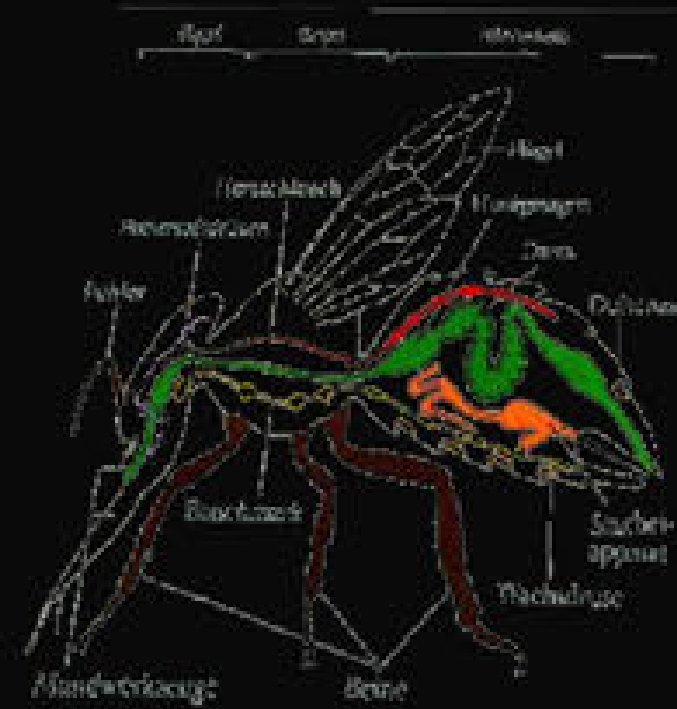




connectibition

<https://medium.com/extended-exhibition>

Technical setting: Keep it as simple as possible!



Die Westliche Honigbiene (*Apis mellifera*), auch Europäische Honigbiene, meist einfach Biene oder Honigbiene genannt, gehört zur Familie der Echten Bienen (Apidae), innerhalb derer sie eine Vertreterin der Gattung der Honigbienen (*Apis*) ist. Ihr ursprüngliches Verbreitungsgebiet war Europa, Afrika und Vorderasien. Da sie Honig erzeugt, wird sie durch den Menschen genutzt (Imkerei) und wurde weltweit verbreitet; so bereits während der Kolonialisierung anderer Kontinente durch die Europäer. Für die Landwirtschaft ist die durch die Westliche Honigbiene erfolgte Bestäubung der Blüten von Bedeutung, was sie zu einem der wichtigsten Nutzinsekten macht.

L.u.m.e.n.

L.u.m.e.N.



Project **Extended Exhibition**, Jens Wunderling, Michael Herzog et. al. 2016



<https://medium.com/extended-exhibition>

L.U.M.E.N Mareike Gabele, Robert Klank, Nicolas Pepping, Eric Schmieder



SACHSEN-ANHALT



6



Nieders

leza

EPRE

FZI

Interdisciplinary Security Research
Solutions for Leveraging
Added Multicore Computing
Real Time Big Data
Industrial Internet of Things
Safety for Smarter Mobility
Utilizing multi-core
for safety, efficiency
KASTEL - Kerckhoffs' principle Software Prot
Augmented Reality for
Smart Data Analytics in Industry 4.0
Gesture Com

Bundesministerium
für Bildung
und Forschung

CeBIT
INNOVATION
AWARD 2014



Nicolas

Mareike

Jens

Miriam

Michael

Robert



The Team behind »Extended Exhibition«project

(paper authors marked)

Kontextsensitivität, Kontextadaptivität

		Malerczyk, 2004 [8]	Rudametkin, et al, 2008 [7]	Zabulis, et al., 2010 [9]	Suh, et al., 2011 [6]	Rocchetti, et al., 2014 [14]	Tesoriero, et al., 2014 [5]	Bohnert, et al., 2014 [10]	Confalonieri, et al., 2015 [12]	Alletto et al., 2016 [11]	L.U.M.E.N	I.D.C.	S.I.V.E.	Connectibition
Seamless integration	use of mobile devices / BYOD		■		■	■	■				■	■		
	seamless integration of technology	■		■							■	■	■	■
	explorative access to information	■		■	■		■			■		■	■	■
	navigation support						■				■			
User Experience / Personalization	influence / communicate with exhibits			■							■	■	■	■
	adjustment to needs of individual user	■		■			■	■		■		■		■
	personal configuration using locating technology		■	■			■	■		■	■	■	■	■
	addressing specific target groups		■	■							■	■		
	narration / storytelling	■		■							■		■	
	establishing connection between subjects	■												■
Expanding exhibition space	access to new kinds of exhibition formats			■			■				■		■	■
	reactive / interactive exhibition ground			■								■	■	■

Herzog, M.A., Wunderling, J., Gabele, M., Klank, R., Landenberger, M., Pepping, N.: Context Driven Content Presentation for Exhibition Places. Four Interaction Scenarios Developed for Museums. Electronic Imaging & the Visual Arts Conference EVA 2016, St. Petersburg

»PRODUKT«

Machbarkeit
Implementierung

Technik

Interaktions
design

Form +
Funktion
Interaktion
Attraktivität

Geschäfts
modell

Märkte
Prozesse
Wirtschaftlichkeit
Gesellschaftliche Entwicklungen

Entwicklung der Wirtschaftlichen Verwertung

- ▶ Systematische Geschäftsmodellentwicklung
- ▶ Marktanalysen, Kalkulationen, Projektplanung



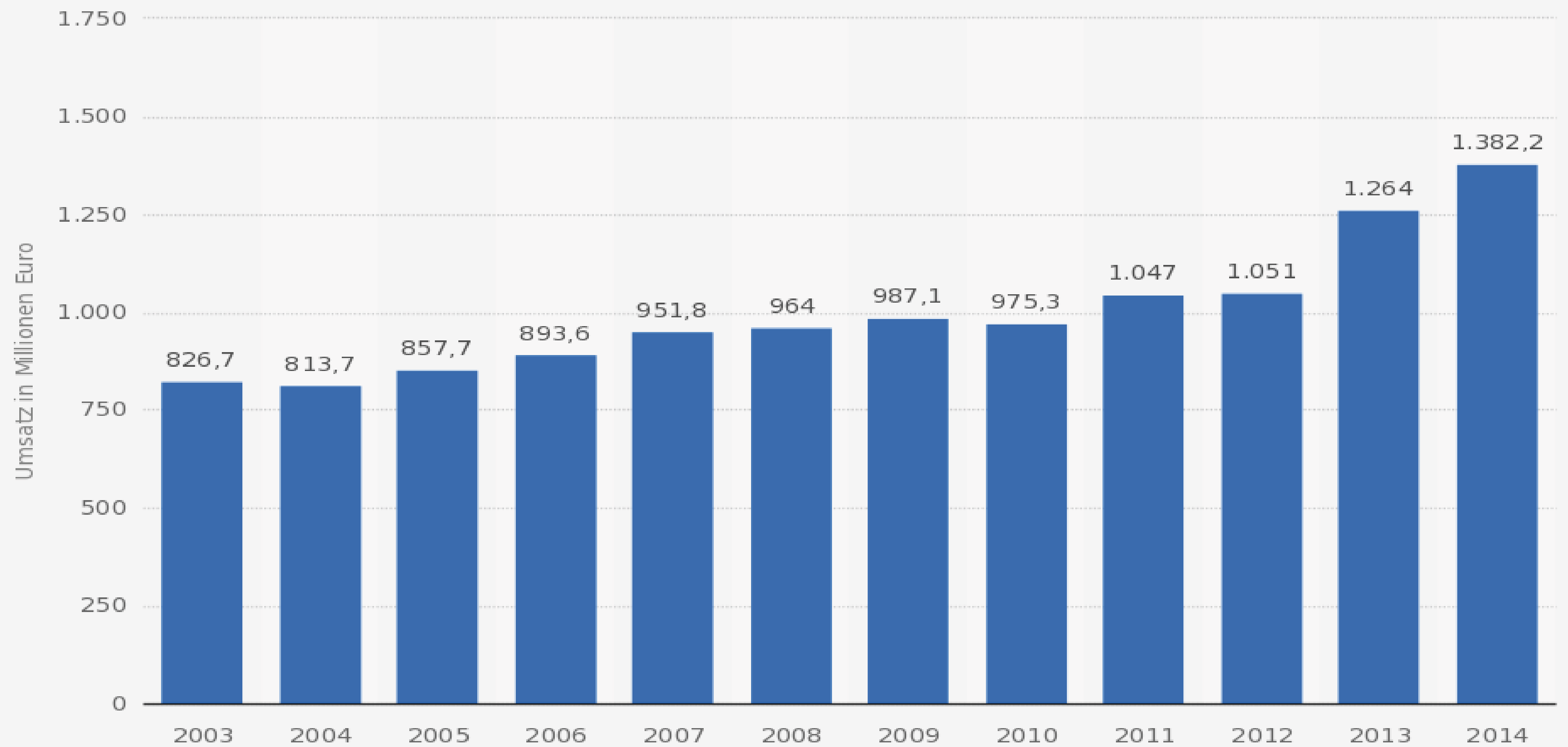
Museumsmarkt?



Andere Märkte adressieren



Umsatz der Vergnügungs- und Themenparks* in Deutschland von 2003 bis 2014 (in Millionen Euro)



Quelle:
Statistisches Bundesamt
© Statista 2016

Weitere Informationen:
Deutschland

Ertragsmechanik konstruieren

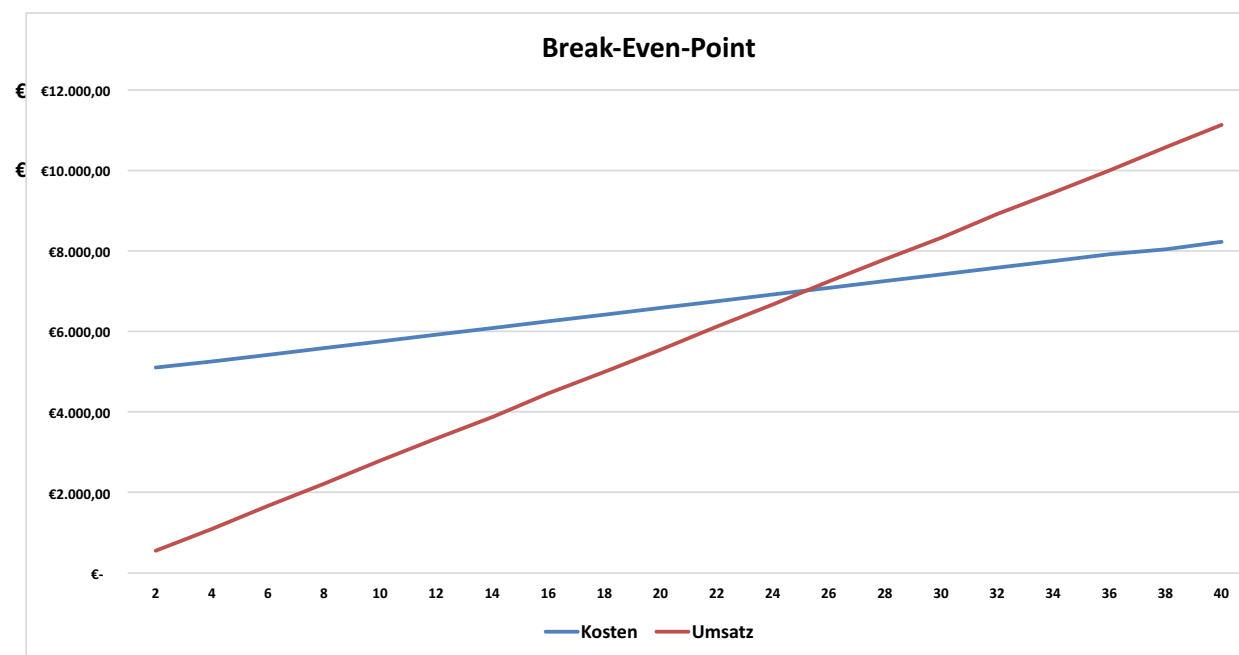
Kostenrechnung LUMEN

Rohstoffe		Jahreszins:	2,07%
LED	4,49 €	Preis vor Gewinn:	190,00 €
Kühlkörper	1,03 €	Gewinnzuschlag:	120%
Linse	2,29 €	Gesamter Kredit:	100.000,00 €
Arduino	21,45 €	Unterdeckung für Menge X	231,96 €
Bluetoothmodul	5,67 €	UST	19%
Akku	21,90 €		
Lautsprecher	4,99 €	https://www.conrad.de/de/25-zoll-breitband-lautsprecher-chassis-visaton-fr-7-5-w-4-305266.html	
Kompassensensor	2,36 €	https://www.conrad.de/de/linearer-positionssensor-honeywell-ss495a-45-105-vdc-sip-505291.html	
GPS-Empfänger	12,99 €	https://www.conrad.de/de/gps-empfaenger-navilock-nl-69atsma-3m-378865.html	
SD-Karte	4,00 €		
SD-Adapter	1,00 €		
Summe	82,17 €		
Audiokosten			
Tonstudio	1.000 € pro Stunde	100,00 €	
Synchrone Sprecher	3.500 € 20min Text	350,00 €	Investitionskosten
			7560,00

BGA		Personal	Pro h	Pro Monat Brutto	Lohn Nebenkosten
Möbel	1.000,00 €	Handwerker	10,50 €	1.365,00 €	1.631,22 €
Computer	500,00 €	Bürokräft	10,50 €	1.820,00 €	2.174,96 €
Telefon	40,00 €				
Internet	20,00 €	Laufende Kosten monatl.			
Büro 3 Räume	750 € monatl.		4.722 €	Für Lampen	100
Versicherungen	91,67 €				12.939,02 €
Strom/Wasser	40,00 €				129,39 €
Abfallgebühren	34,17 €				174,68 €
Kautions	1.500,00 €				

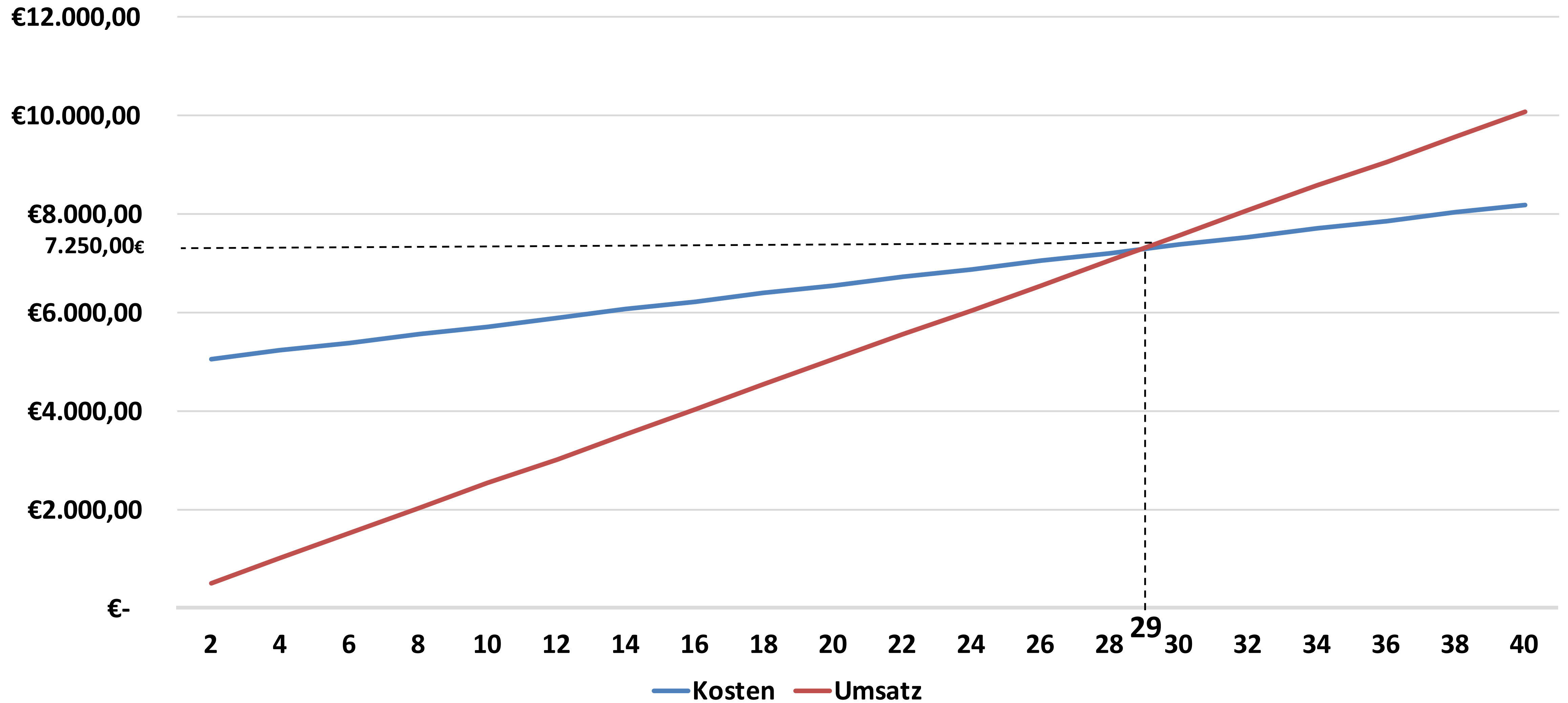
Freizeitparknachfrage 36millionen 2mio mehr als das Jahr davor

	Januar	Februar	März	April	Mai	Juni	Juli	August	September	Oktober	November	Dezember	Januar	Februar	März	April	Mai	Juni	Juli	August	September	Oktober	November	Dezember				
Eigenkapital	10.000,00 €	10.000,00 €	10.000,00 €	10.000,00 €	10.000,00 €	10.000,00 €	10.000,00 €	10.000,00 €	10.000,00 €	10.000,00 €	10.000,00 €	10.000,00 €	10.000,00 €	10.000,00 €	10.000,00 €	10.000,00 €	10.000,00 €	10.000,00 €	10.000,00 €	10.000,00 €	10.000,00 €	10.000,00 €	10.000,00 €	10.000,00 €				
Investition	7.560,00 €	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
Abschreibung Inv. (13J.)	48,46 €	48,46 €	48,46 €	48,46 €	48,46 €	48,46 €	48,46 €	48,46 €	48,46 €	48,46 €	48,46 €	48,46 €	48,46 €	48,46 €	48,46 €	48,46 €	48,46 €	48,46 €	48,46 €	48,46 €	48,46 €	48,46 €	48,46 €	48,46 €				
Laufende Kosten	4.722 €	4.722 €	4.722 €	4.722 €	4.722 €	4.722 €	4.722 €	4.722 €	4.722 €	4.722 €	4.722 €	4.722 €	4.722 €	4.722 €	4.722 €	4.722 €	4.722 €	4.722 €	4.722 €	4.722 €	4.722 €	4.722 €	4.722 €	4.722 €				
Stückkosten	82,17 €	82,17 €	82,17 €	82,17 €	82,17 €	82,17 €	82,17 €	82,17 €	82,17 €	82,17 €	82,17 €	82,17 €	82,17 €	82,17 €	82,17 €	82,17 €	82,17 €	82,17 €	82,17 €	82,17 €	82,17 €	82,17 €	82,17 €	82,17 €				
Stückmenge	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	30				
Ca. benötigter Absatz:	64,64	32,79	32,79	32,79	32,79	32,79	32,79	32,79	32,79	32,79	32,79	32,79	32,79	32,79	32,79	32,79	32,79	32,79	32,79	32,79	32,79	32,79	32,79	31,73				
Förderkredit	100.000,00 €	99.827,50 €	99.655,00 €	99.482,50 €	99.310,00 €	99.137,50 €	98.965,00 €	98.792,50 €	98.620,00 €	98.447,50 €	98.275,00 €	98.102,50 €	97.930,00 €	97.757,50 €	97.585,00 €	97.412,50 €	97.240,00 €	97.067,50 €	96.895,00 €	96.722,50 €	96.550,00 €	96.377,50 €	96.205,00 €	96.032,50 €				
Kreditzinsen	172,50 €	172,50 €	172,50 €	172,50 €	172,50 €	172,50 €	172,50 €	172,50 €	172,50 €	172,50 €	172,50 €	172,50 €	172,50 €	172,50 €	172,50 €	172,50 €	172,50 €	172,50 €	172,50 €	172,50 €	172,50 €	172,50 €	172,50 €	172,50 €				
Verfügbares Kapital	109.827,50 €	103.846,88 €	99.618,14 €	96.968,78 €	95.898,79 €	96.408,19 €	98.496,96 €	102.165,12 €	107.412,65 €	114.239,56 €	122.645,85 €	132.631,53 €	144.196,58 €	157.341,01 €	172.064,81 €	188.368,00 €	206.250,57 €	225.712,51 €	246.753,84 €	269.374,54 €	293.574,63 €	319.354,09 €	346.712,93 €	375.651,15 €				
Break-Even-Preis	231,96 €	231,96 €	231,96 €	231,96 €	231,96 €	231,96 €	231,96 €	231,96 €	231,96 €	231,96 €	231,96 €	231,96 €	231,96 €	231,96 €	231,96 €	231,96 €	231,96 €	231,96 €	231,96 €	231,96 €	231,96 €	231,96 €	231,96 €	231,96 €				
Plus Gewinn 20%	278,35 €	278,35 €	278,35 €	278,35 €	278,35 €	278,35 €	278,35 €	278,35 €	278,35 €	278,35 €	278,35 €	278,35 €	278,35 €	278,35 €	278,35 €	278,35 €	278,35 €	278,35 €	278,35 €	278,35 €	278,35 €	278,35 €	278,35 €	278,35 €				
19% UST	331,23 €	331,23 €	331,23 €	331,23 €	331,23 €	331,23 €	331,23 €	331,23 €	331,23 €	331,23 €	331,23 €	331,23 €	331,23 €	331,23 €	331,23 €	331,23 €	331,23 €	331,23 €	331,23 €	331,23 €	331,23 €	331,23 €	331,23 €	331,23 €				
Umsatz	9.185,51 €	9.185,51 €	9.185,51 €	9.185,51 €	9.185,51 €	9.185,51 €	9.185,51 €	9.185,51 €	9.185,51 €	9.185,51 €	9.185,51 €	9.185,51 €	9.185,51 €	9.185,51 €	9.185,51 €	9.185,51 €	9.185,51 €	9.185,51 €	9.185,51 €	9.185,51 €	9.185,51 €	9.185,51 €	9.185,51 €	8.350,46 €				
Kosten	14.993,63 €	7.606,13 €	7.606,13 €	7.606,13 €	7.606,13 €	7.606,13 €	7.606,13 €	7.606,13 €	7.606,13 €	7.606,13 €	7.606,13 €	7.606,13 €	7.606,13 €	7.606,13 €	7.606,13 €	7.606,13 €	7.606,13 €	7.606,13 €	7.606,13 €	7.606,13 €	7.606,13 €	7.606,13 €	7.606,13 €	7.359,62 €				
Kum. Überschuss	-	5.808,12 €	-	4.228,74 €	-	2.649,36 €	-	1.069,98 €	509,40 €	2.088,78 €	3.668,15 €	5.247,53 €	6.826,91 €	8.406,29 €	9.985,67 €	11.565,05 €	13.144,43 €	14.723,81 €	16.303,19 €	17.882,57 €	19.461,95 €	21.041,33 €	22.620,70 €	24.200,08 €	25.779,46 €	27.358,84 €	28.938,22 €	29.929,06 €
Monatl. Kreditrate	3.459,12 €	nach	Freijahren																									
Stückzahl	2	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40								
Kosten	5.107,32 €	5.271,66 €	5.436,00 €	5.600,34 €	5.764,68 €	5.929,02 €	6.093,36 €	6.257,70 €	6.422,04 €	6.586,38 €	6.750,72 €	6.915,06 €	7.079,40 €	7.243,74 €	7.408,08 €	7.572,42 €	7.736,76 €	7.901,10 €	8.065,44 €	8.229,78 €								
Umsatz	556,70 €	1.113,39 €	1.670,09 €	2.226,79 €	2.783,49 €	3.340,18 €	3.896,88 €	4.453,58 €	5.010,28 €	5.566,97 €	6.123,67 €	6.680,37 €	7.237,07 €	7.793,76 €	8.350,46 €	8.907,16 €	9.463,85 €	10.020,55 €	10.577,25 €	11.133,95 €								

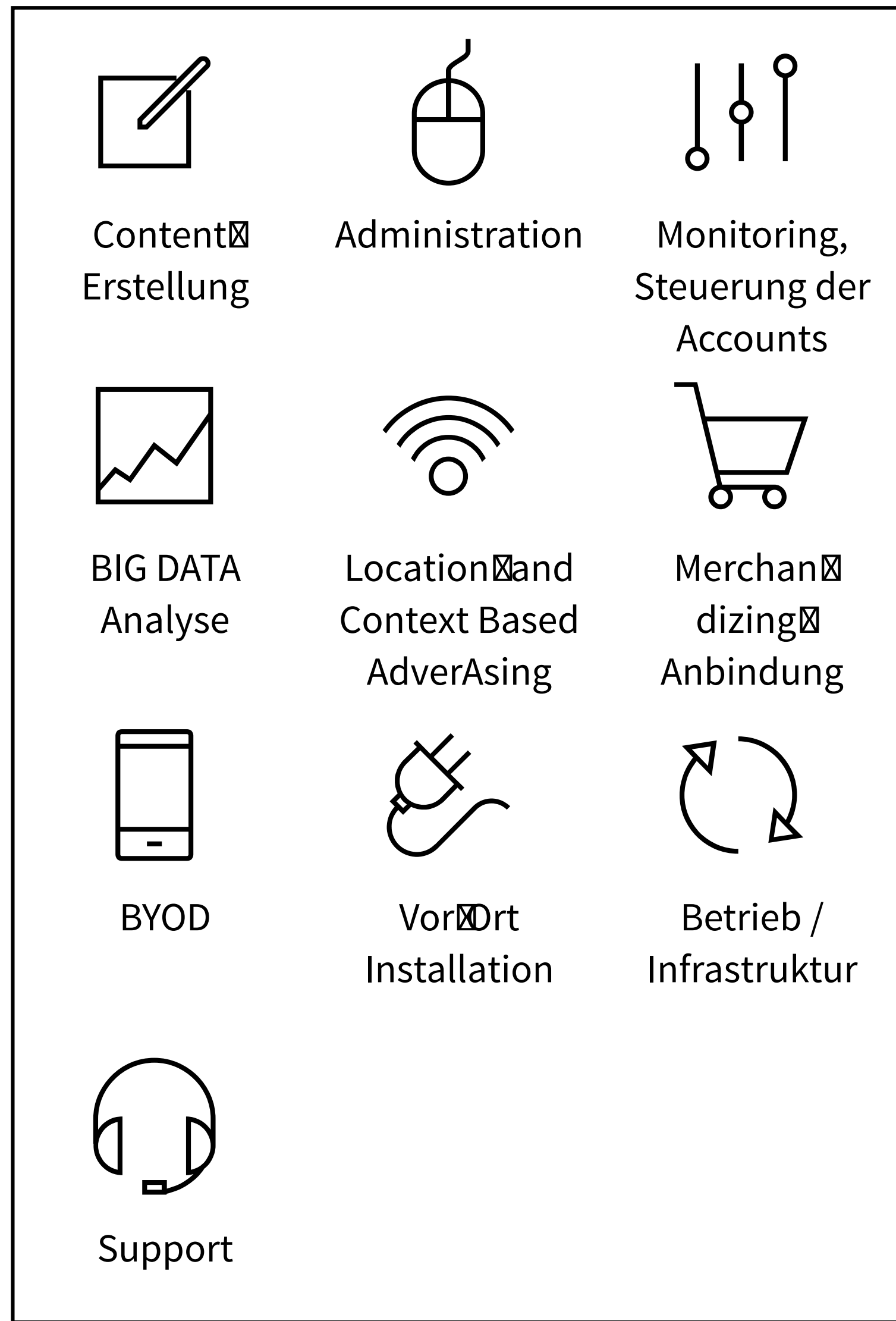


Ertragsmechanik konstruieren

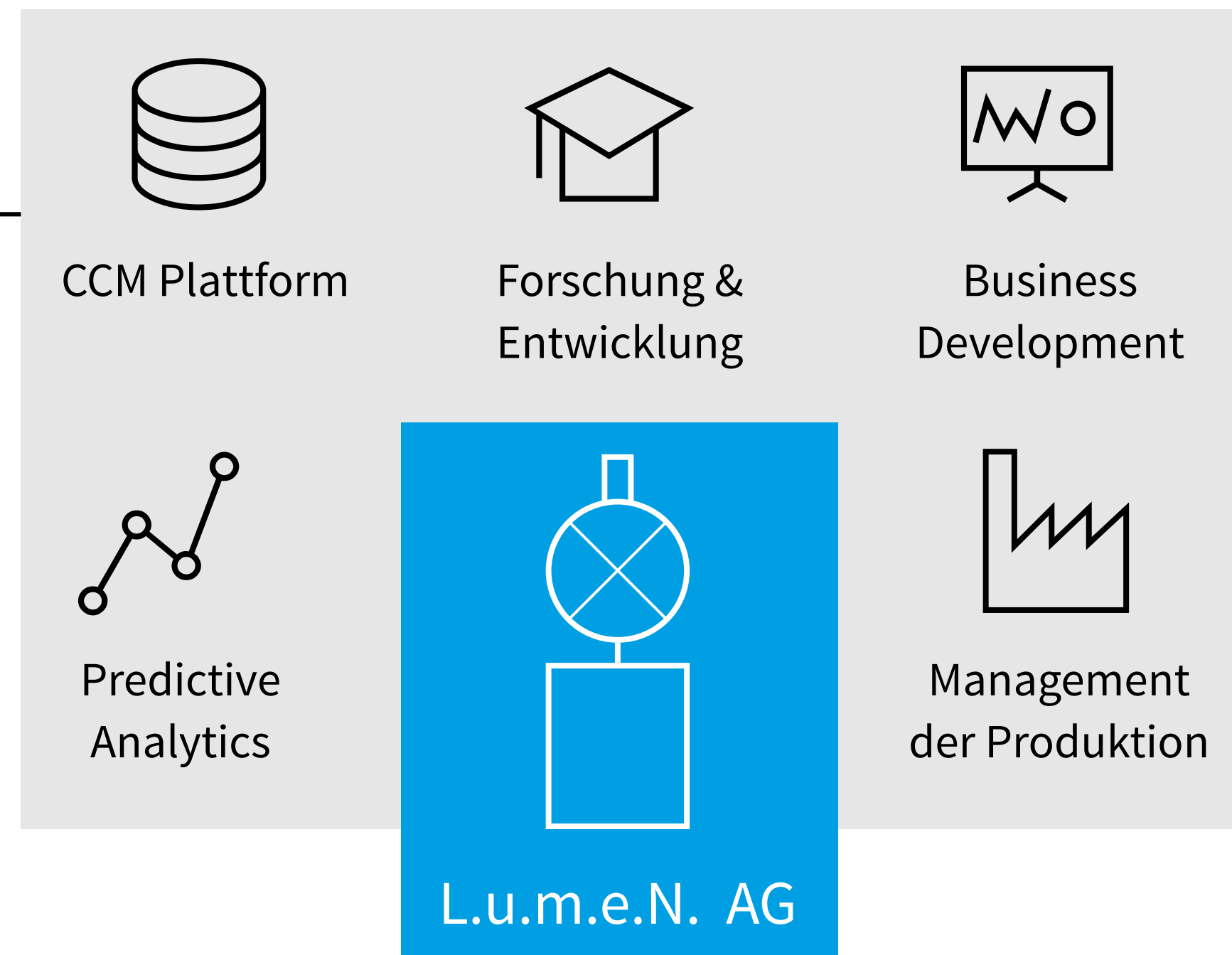
Break-Even-Point



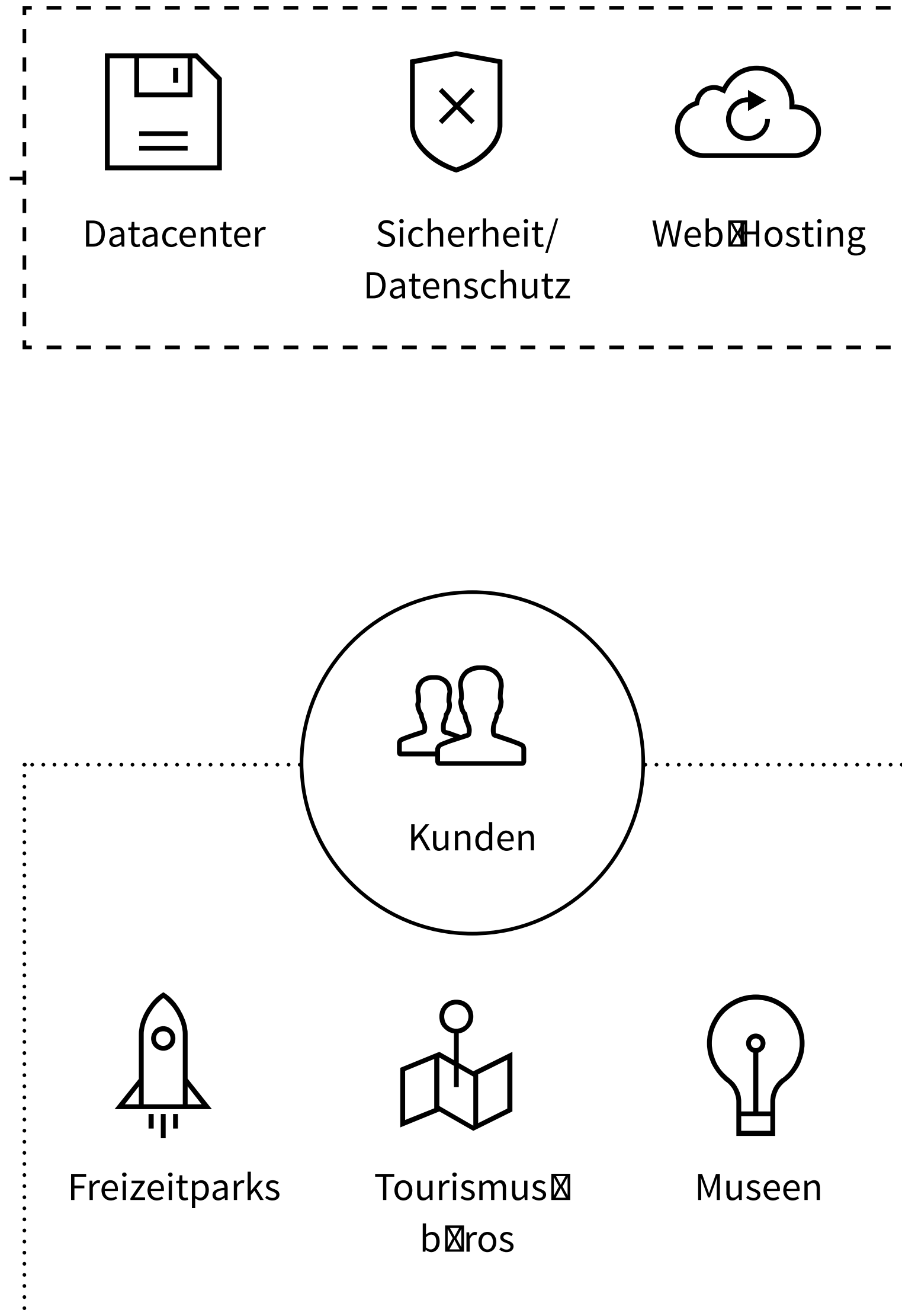
Dienstleistungssystem



Kernkompetenzen



Basisleistungen Outsourcing






SACHSEN-ANHALT
Ministerium für Wirtschaft,
Wissenschaft und Digitalisierung



HUGO
JUNKERS
PREIS

RECHEN
FABRIK
DEER

Jes
anw

M

ANMELDU

»PRODUKT«

Machbarkeit
Implementierung

Technik

Interaktions
design

Form +
Funktion
Interaktion
Attraktivität

Geschäfts
modell

Märkte
Prozesse
Wirtschaftlichkeit
Gesellschaftliche Entwicklungen

MyUniversity: »To all information from one interface«. E-Portfolio. Alumni-Portal.

My h2

Activity | Blogs | Bookmarks | Files | Groups | More

Search

Add widgets

Michael Herzog
 Profile Type: Mitarbeiter und Professoren
Studium
 Studienrichtung: Informatik
Adresse
 Website: http://www.mherzog.com
Job
 Firma: Hochschule Magdeburg-Stendal
 von: Mon 04 Jan 2010
 Position: Professor
 Standort: Magdeburg

Edit avatar
 Edit profile

Blogs
 Bookmarks
 Files
 My Classmates
 Pages
 Photo Albums
 Photos
 Pinboards
 Wire posts

RSS Feed
 tagesschau.de – Die Nachrichten der ARD
 Wetter
 WetterOnline
 Das Wetter für Magdeburg
 Mehr auf wetteronline.de

Group membership
 E-Portfolio-Arbeit
 More groups

Cafeteria diet
 Montag / Monday, 16.06.2014
 Putens Steak mit Rahmsauce
 Gyros mit Tzatziki, Krautsalat und Fetaheint
 Blumenkohl-Gästelier mit Tomatensoße

Pages
 Dokumentation zur E-Portfolio-Arbeit
 Das ist eine Musterseite. Hier kann man seine Inhalte wie in einem Textverarbeitungsprogramm erstellen und auch Bilder, Links usw. einfügen.

Activity
 Michael Herzog is now a friend with Christian Neumann 106 days ago
 Michael Herzog is now a friend with Erwin Albers 108 days ago

My h2

Activity | Blogs | Bookmarks | Files | Groups | More

Search

Pinboards > Erika Mustermann > Über mich

Über mich

Schreiben ist wie Reisen...
 ... ein Abenteuer mit ungewissem Ausgang nach einem oft mühseligen Weg.

Abschlüsse
 2007 Promotion in Kulturwissenschaften (magna cum laude), Europa-Universität Viadrina
 2007 Zertifikat wissenschaftliche Schreibberatung, PH Freiburg
 2000 Magistra Artium Neuere Deutsche Literatur, Deutsch als Fremdsprache, Hispanistik, Humboldt-Universität zu Berlin
 1990 Abitur, Dietrich-Bonhoeffer-Gymnasium Hilden

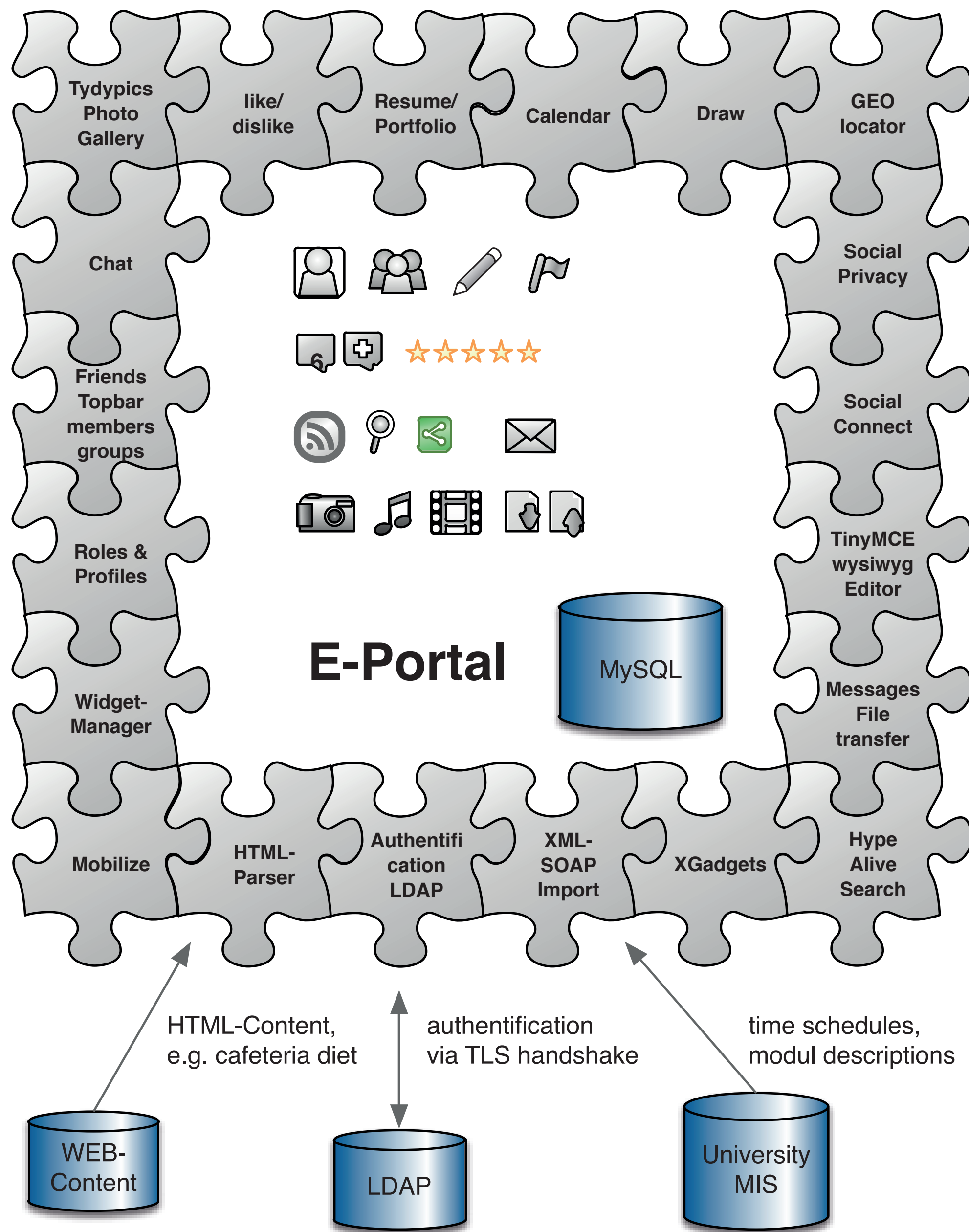
Freiberufliche Tätigkeiten
 seit 2000 gebe ich Trainings für wissenschaftliches Schreiben und coache Schreibgruppen, insbesondere für Promovierende. Auftraggeber sind u.a.
 • Career Center Universität Hamburg
 • Scrimto Mentoring-Programm für Nachwuchswissenschaftlerinnen in den Naturwissenschaften in Hessen
 • CoachingPlus für angehende ProfessorInnen den Universitäten Bochum, Duisburg-Essen und Bochum
 seit 1991 stiftete ich Menschen zum literarischen und biographischen Schreiben an, u.a. im Rahmen von
 • Schreibreisen (kreative Stadtrundgänge mit Stift- und Papier in Berlin)
 • Friedrichshainer Kaleidoskop der Erinnerungen (generationsübergreifende biografische Schreibgruppen)
 • Theodoras Literatursalon

Universitäre Tätigkeiten (Auswahl)
 seit September 2012: wiss. Leitung Zentrum für Schlüsselkompetenzen und Forschendes Lernen, Europa-Universität Viadrina, Projekt Peer Tutoring (i. Vertr.)
 seit 2011: Habilitationsprojekt "Strategien zur erfolgreichen Implementierung von Schreibzentren an Hochschulen", 2011-2012 Forschungsaufenthalt USA mit DFG-Förderung zur Datenerhebung
 seit 2009: Konzeptionelle und ausführende Mitarbeit im internationalen Konsortium „International Literacy Management“, Implementierung Weiterbildung "Schreibzentrumsarbeit und Literacy Management"
 2007-2010: Gründung, Aufbau und Leitung des Schreibzentrums an der Europa-Universität Viadrina
 2007-2008: Konzeption und Leitung Promovierendenprogramm "Wissenschaftskompetenz durch

Interview zu meiner Schreibzentrumstätigkeit
 Susanne Diehm hat mich für das Buch "Die Macht der Worte" interviewt. Das sehr empfehlenswerte Buch über Schreibberufe ist erschienen im mitp-Business Verlag.
 Zum Interview (mit freundlicher Genehmigung von mitp).

Helmich, O., Herzog, M., Neumann, C.: Seamless and secure integration of SocialMedia, E-Portfolio and Alumni services into University Information Architecture.

In: International Journal of Computing, CISJ. 2014, Vol. 13, Issue 2



Helmich, O., Herzog, M., Neumann, C.: Seamless and secure integration of SocialMedia, E-Portfolio and Alumn services into University Information Architecture. In: International Journal of Computing, CISJ. 2014, Vol. 13, Issue 2





ROSI-3D

- ▶ RFID-Ortung unter Berücksichtigung ortsveränderlicher Objekte im Funkfeld mit einer 3D-Simulation
- ▶ 11/2012-03/2016, 330 TEUR
- ▶ 5 Partner
 - Hochschule Magdeburg-Stendal
 - Centiveo GmbH Magdeburg
 - metraTec GmbH Magdeburg
 - ifak - Institut für Automation und Kommunikation e.V. Magdeburg
 - Otto von Guericke Universität, Fakultät für Informatik (FIN), Prof. Dr. Myra Spiliopoulou

gefördert durch:

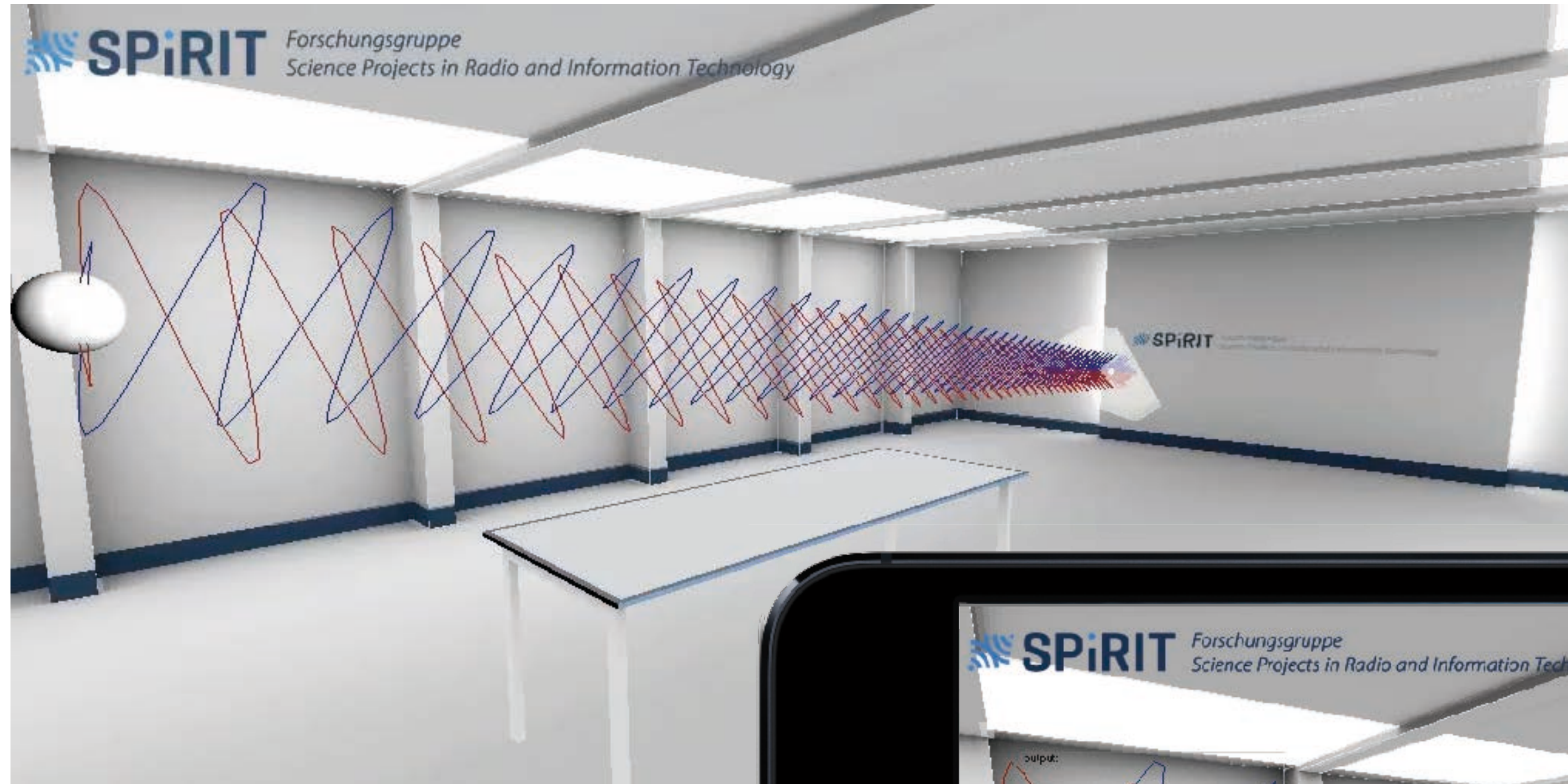


Bundesministerium
für Bildung
und Forschung

profUnt 

Forschung an Fachhochschulen mit Unternehmen

Localization and Simulation



ROSI-3D

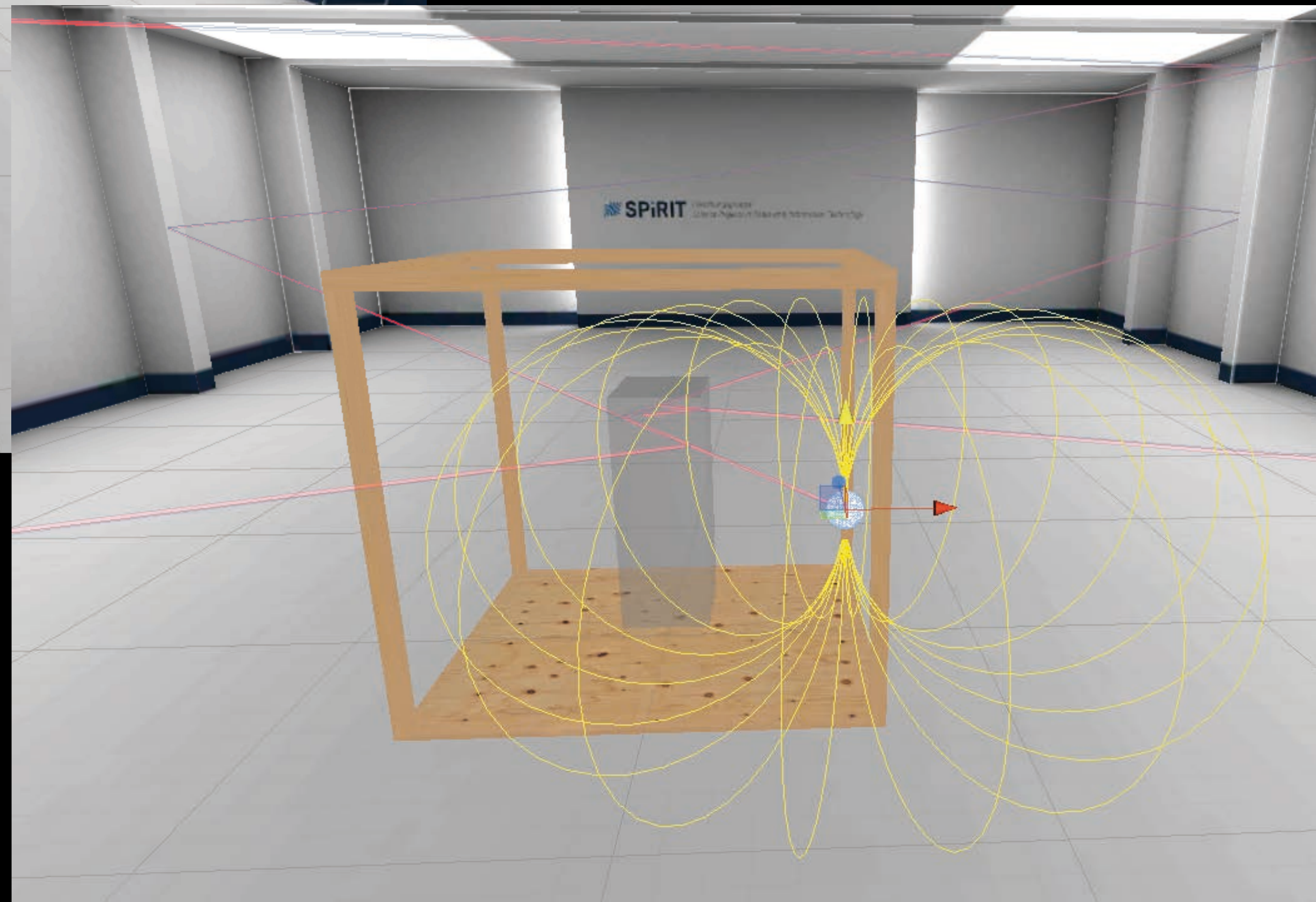
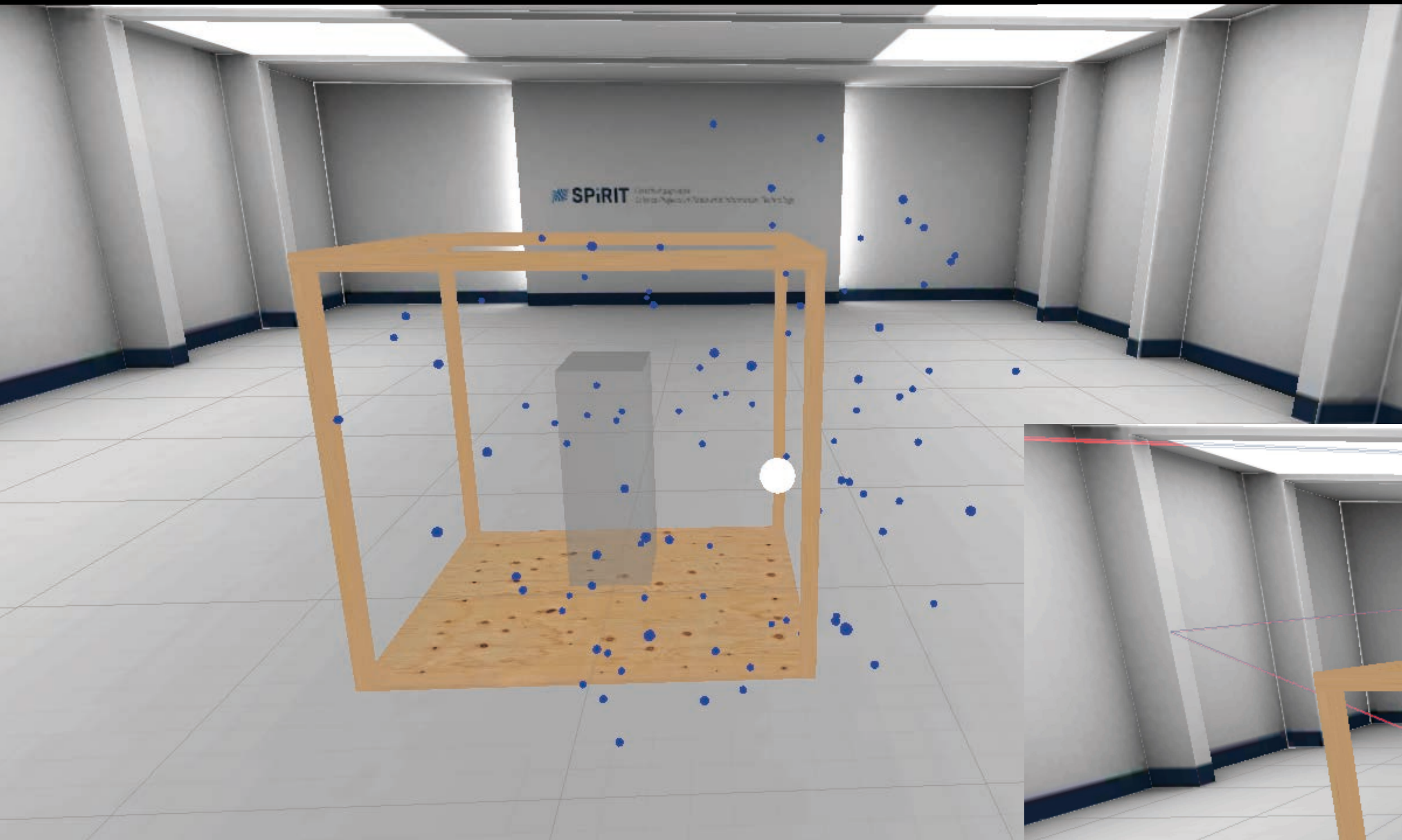
RFID locating in consideration of moving objects in a radio field with 3D-simulation

gefördert durch:



Bundesministerium
für Bildung
und Forschung





Hatscher, B., Herzog, M.: Partikel- oder Wellensimulation?
Zwei Ansätze zur Indoor-Lokalisierung auf Basis passiver
RFID-Technik, Von der Digitalen Fabrik zu Industrie 4.0,
Multikonferenz Wirtschaftsinformatik (MKWI) 2016



Hatscher, B., Herzog, M.: Partikel- oder Wellensimulation? Zwei Ansätze zur Indoor-Lokalisierung auf Basis passiver RFID-Technik, Von der Digitalen Fabrik zu Industrie 4.0, Multikonferenz Wirtschaftsinformatik (MKWI) 2016



Empirical Work

▶ CrossTeaching Survey, a cooperation with Linz University (JKU) since 2010

- N>760, 15 Publications, etc.
- Katzlinger, E., Herzog, M.: Wiki Based Collaborative Learning in Interuniversity Scenarios. In: Ciussi, M. (ed): The Electronic Journal of e-Learning EJEL, Volume 12 Issue 2, pp 149-160, ECEL, Academic Publishing International, May 2014
- Katzlinger, E., Herzog, M.: Intercultural collaborative learning scenarios in e-business education. Media competencies for virtual workplaces. In: Issa, T., Isaias P., Kommers, P.: Multicultural Awareness and Technology in Higher Education: Global Perspectives. IGI Global Press, 2014
- Herzog, M., Katzlinger, E.: The Multiple Faces of Peer Review in Higher Education. Five Learning Scenarios developed for Digital Business. In: EURASIA Journal of Mathematics Science and Technology Education. Jan 2017

▶ SocialMedia Study Saxony-Anhalt 2012, 2016

- Sens, L., Herzog, M., Albers, E.: Chancen und Risiken sozialer Medien im Unternehmen. Eine Studie mit Schwerpunkt in Sachsen-Anhalt. In: Fischer, A.: 14. NWK, VWH Verlag 2013

▶ ICT Sustainability since 2013

- Herzog, M (ed.): Economics of Communication. ICT driven fairness and sustainability for local and global marketplaces. GITO Verlag 2015

▶ AutoID + IoT Study Health 2015/16 (in progress)

The Economics of Communication Communication in Business Cycles



Web and Internet technologies initiated the fourth Industrial revolution in less than 20 years since their entry into mainstream communication scenarios, significantly changing economics and society. **Digitization** and mobile technologies speed up **communication** and

The conference was held on November, 8th 2013. Location: Landesvertretung Sachsen-Anhalt in Berlin, close to Berlin Central Station.

[▶ Video statements of speakers and committee](#)

Our Partners

Alcatel-Lucent Stiftung for Communications Research, Joint Competence Center, Berlin
German Informatics Society (GI)
Ministry of Economics and Sciences of the State of Saxony-Anhalt



Impressionen und Bilder vom Barcamp
Berichte im Bereich Presse



<http://h2bc.de>

Speed Dating: Scholarly Communication Meets Digital Archiving

Lunch lecture*

The area of digital scholarly communication has been studied extensively over the last decade and continues to be the focus of numerous international research projects at scale. This helps to improve our understanding of, for example, relationships between scientific disciplines based on the analysis of co-authorship, shared references, and usage data.

Digital preservation efforts such as Europeana or the Digital Public Library of America (DPLA) have been initiated to preserve our cultural heritage. It is (mostly) understood that we need sustainable, scalable, and business-oriented preservation models for the vast amount of digital content we create today.

In this talk I will touch upon the nexus of these two areas. As digital scholarship is no longer just a single PDF document but is rather becoming a complex object with references to websites, datasets and software, we are in need of enhanced preservation approaches. I will provide examples to motivate this need and demonstrate pro-active solutions available today to the conscious scholar. And yes, I will talk about time travel!

7.11.2013

12:00 Uhr - 13:00 Uhr
Hörsaal HS4, Haus 14

about Martin Klein

Martin Klein received his Diploma in Computer Science from the University of Applied Sciences Berlin (2002) and his Ph.D. in Computer Science from Old Dominion University (2011). From 2002 to 2005, he was a scientist at the University of Applied Sciences in Berlin conducting research in the realm of e Learning and mobile computing. At Old Dominion University, he was part of the Web Science and Digital Libraries Research Group and a part-time lecturer in the Computer Science Department. He currently is a Postdoctoral Research Associate at the Research Library of the Los Alamos National Laboratory. His research interests include scholarly communication, digital preservation, temporal aspects of the web, and information retrieval and extraction.



For more information see: <http://www.cs.odu.edu/~mklein/>

* Der Referent steht bei einem gemeinsamen Lunch direkt im Anschluss für individuelle Gespräche zur Verfügung.



SPiRiT Forschungsgruppe
Science Projects in Radio and Information Technology

E-Business Financing Lehrstücke aus dem Silicon Valley

Lunch lecture*

Was kann ein StartUp Entrepreneur über unterschiedliche Financing Modelle und Strategien vom Silicon Valley lernen? Sollte es das erklärte Ziel jedes deutschen StartUps sein von Silicon Valley Venture Capitalists Funding zu bekommen und welche Vorteile bringt das? US Venture Kapital oder Minimalfinanzierung vor Ort? Existenziell oder solides langfristig geplantes KMU?

Die Verwerfungen in der Szene sind längst nicht mehr nur durch eine neue Internet Bubble definiert das Konzept 'StartUp' erfordert ein grundlegendes Ueberdenken und neue innovative Wirtschaftsformen haben gerade in Deutschland bessere mittelfristige Chancen.

24.6.2014

14:00 Uhr - 15:00 Uhr
Haus 14, Hörsaal 5
Campus Herrenkrug

about Florian T. Brody

Digital media specialist | Advisor for marketing and strategy
Brody & Partners, San Francisco

Florian Brody is an international marketing and digital media specialist with more than 20 years of experience in his field of business. He has been working as an adviser for a huge number of known companies in a wide range of industries. Moreover, he has co-founded several startUps and has acquired a reputation as an internationally acclaimed speaker. Brody co-invented the first electronic books and built the multimedia market for Apple Austria. Furthermore, he teaches courses in digital media, entrepreneurship and mobile payment strategies at universities in Austria, Germany and the US. He began his career in Vienna where he studied computer linguistics, worked at the Cinéma du Francaise in Paris and as a fashion photographer.



For more information see: <http://www.brody.org>

* Der Referent steht bei einem gemeinsamen Kaffee direkt im Anschluss für individuelle Gespräche zur Verfügung.

Moderation der Veranstaltung: Prof. Dr. Michael A. Herzog



SPiRiT Forschungsgruppe
Science Projects in Radio and Information Technology

Digital Preservation

Lunch lecture

Intro: Prof. Dr. Michael A. Herzog

18.09.2015

13:30 - 14:30

House 7, R 0.06

Campus Herrenkrug

Web Archiving: A Brief Introduction

The Web is present in a broad range of fields of our lives including education, research, governance, news, entertainment, communication, publishing, shopping, social interactions, and many more. We collectively create and consume the Web more than ever before and are truly living in the Web era. However, the Web has a volatile nature. Very often web services disappear and content gets modified, deleted, or moved to other places. We need to preserve our trail on the Web in order for the historians of the future generations to know about us accurately. Apart from the long term preservation of the history there are other advantages and use cases of the archived Web such as personal satisfaction, storytelling, legal evidences, and many more.

In this talk we will briefly discuss the following:

- Archiving and Web archiving
- Purpose and importance of the Web archiving
- Scope of the web archiving (personal or institutional)
- Issues and challenges
- Tools and techniques
- Memento: Time Travel for the Web
- Archive X-Ray: High level summary of the archives' holdings
- Research opportunities in Web archiving
- Our Web Science and Digital Libraries Research Group

about Sawood Alam

Sawood received his B.Tech. degree in Computer Science from Jamia Millia Islamia, New Delhi, India in 2008 and his M.Sc. in Computer Science from Old Dominion University, Norfolk, Virginia in 2013. His Master's Thesis title was "HTTP Mailbox - Asynchronous Restful Communication". Sawood is currently working on his Ph.D. thesis titled, "Archive X-Ray - Web Archive Profiling for Efficient Memento Aggregation". Apart from his academic research in Web Science and Web Archiving field, he is also interested in solving technical challenges of Urdu and other Right-to-Left complex script languages.



A full list of his publications, presentations, research, and development efforts can be found at <http://www.cs.odu.edu/~salam/>.

Using Web Archives to Enrich the Live Web Experience Through Storytelling

The web has become an integral part of our lives, shaping how we get news, shop, and communicate. When critical events occur, social media and news websites cover the stories as they break and continually revise them as the story evolves. Unfortunately, much of the content around these stories is vulnerable and prone to loss. Thus, web archives have become a significant repository of our recent history and cultural heritage. Meanwhile, "storytelling" is becoming a popular technique in social media for selecting representative tweets, videos, web pages, etc. and arranging them in chronological order to support a particular narrative or "story".

I will explain how to (semi-)automatically integrate archived collections with social media to create stories that summarize the holdings in these archived collections through identifying a set of resources that best represent the topic of the collection, then place this set of resources in an interface that users are already familiar with, such as Storify (a storytelling service that allows users to create their narratives). We can sample from the collections and provide one or more summaries or abstracts of the entire collection.

about Yasmin AINOamany

Yasmin is a researcher and Ph.D. Candidate at Old Dominion University in USA majoring in Computer Science with a focus on Information retrieval and Web Preservation. She received her Bachelor's and Master's Degrees in Computer Science from Mansoura University in Egypt. Yasmin had two internships at the Internet Archive, one of the largest and oldest public web archives in the world, in San Francisco as a software engineer in 2014/2015. She has multiple awards from the academic field, such as "the best teaching assistant award" from the college of science and "the best student paper award" in the International Conference on Theory and Practice of Digital Libraries (TPDL) in Sept. 2013. Her research interests include digital preservation, web mining, information retrieval, and digital humanities.



More information: <http://www.cs.odu.edu/~yasmin/>



SPiRiT Research group
Science Projects in Radio and Information Technology

Old Dominion University, Norfolk, VA, USA





Grilles

Grilles

trip lines
levants
graphed out
estimated pros
position up







Veranstaltung
Fernurst und Wissensweh
»Forschen, Lehren und Leben in Virginia«
19.1.2017, 12:00 Uhr
Campus Magdeburg

2

ICT & Economic Context



10/01
2017

ICT & Sustainability

Michael A. Herzog | FB Wirtschaft | Hochschule Magdeburg-Stendal

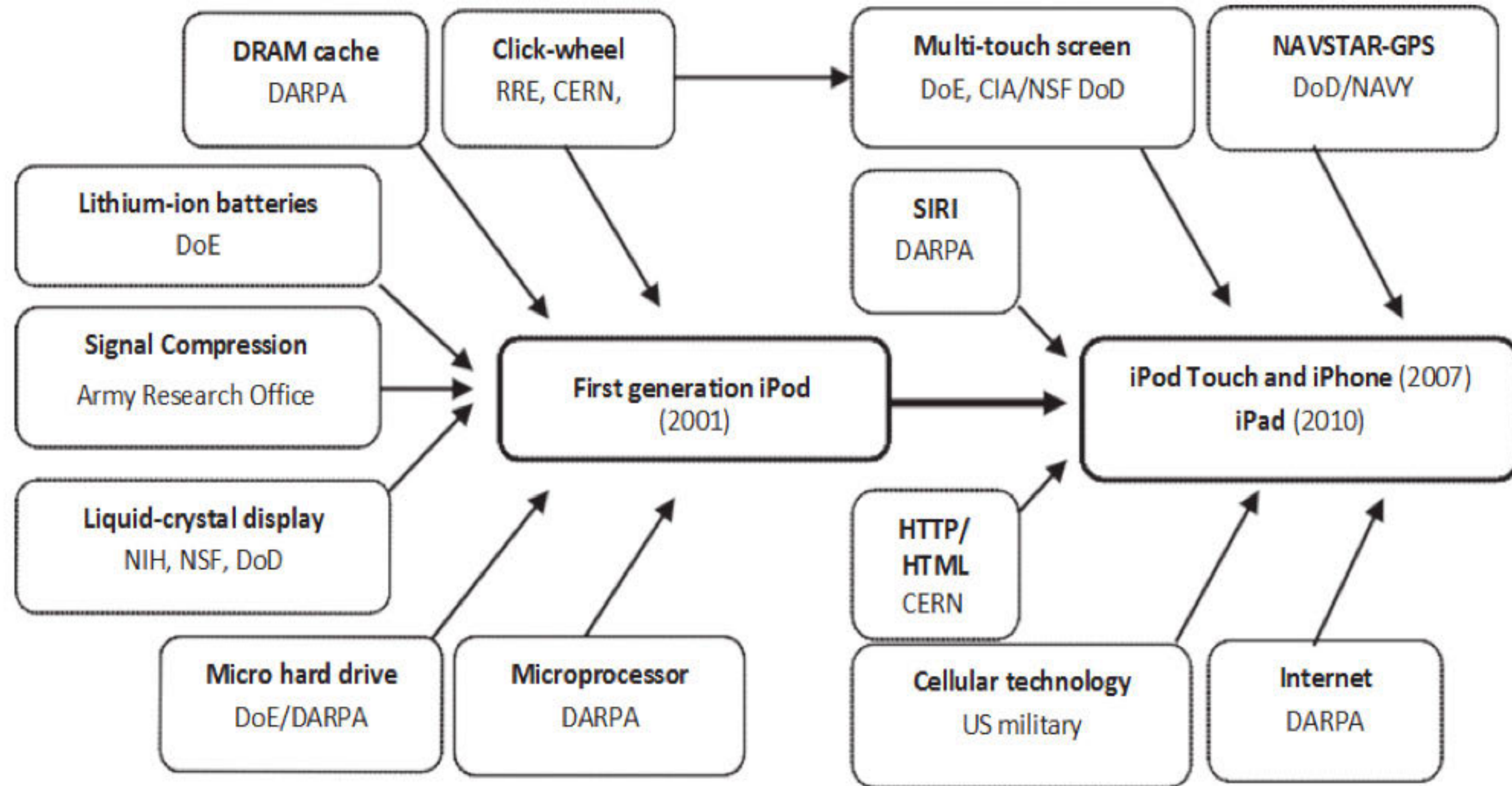
Device Convergence Timeline

	2005	2010	2015
Vision	<p>One Bill, Triple Play</p> 	<p>One Device, 1000s of Apps</p> 	<p>One Ecosystem, 10s of Screens</p> 
Focal Point	Network	Device	Ecosystems
Compete Based On	Price of Service	Number of Apps	Experience Roaming

[Grafik: Detecon, Daniel Kellmerit, 2014]

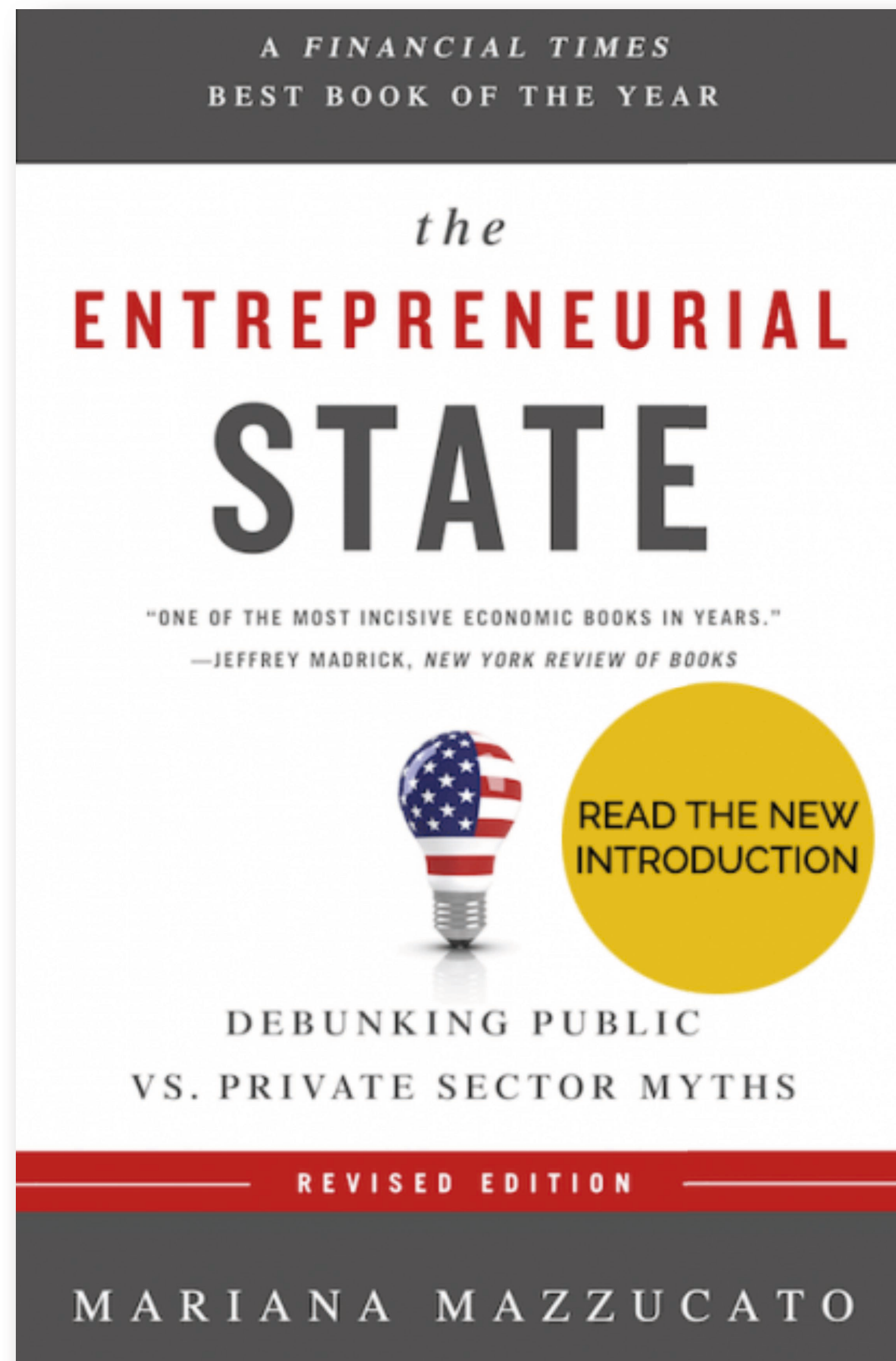
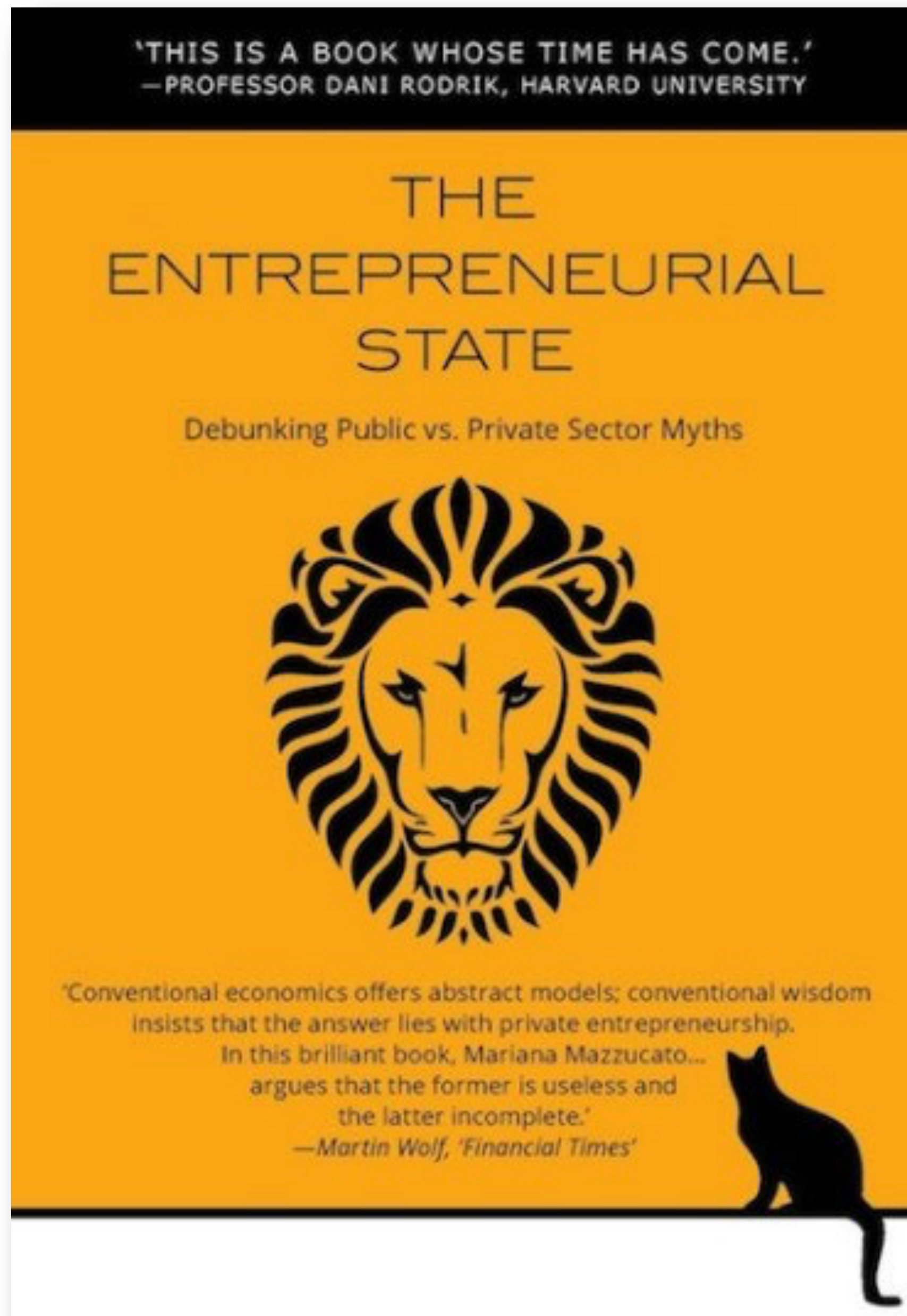
Yesterday 10 years ago: Birthday of iPhone 1

What Makes the iPhone so Smart?



<http://marianamazucato.com/the-entrepreneurial-state/>

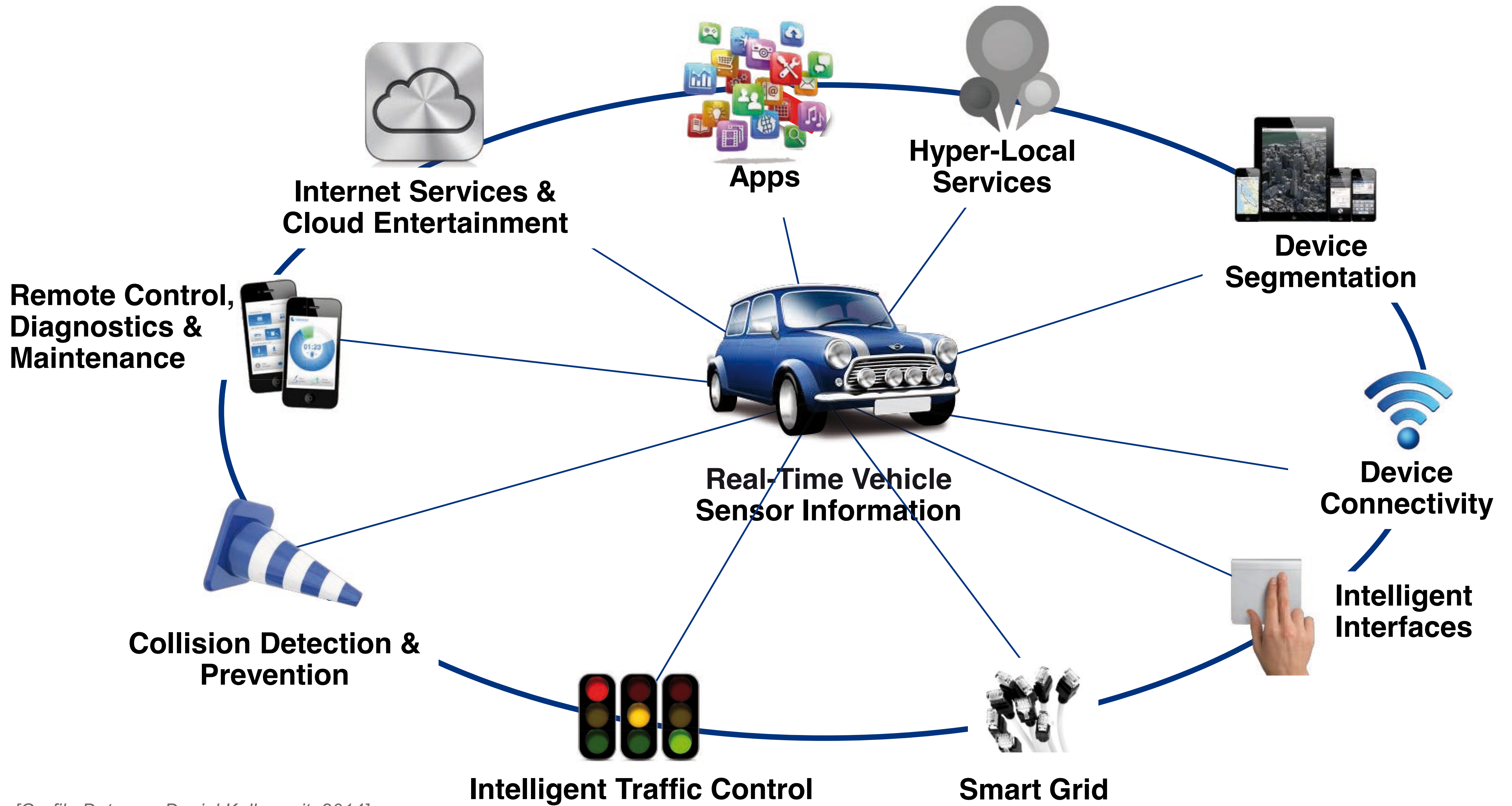
Figure 13 from *The Entrepreneurial State: debunking public vs. private sector myths* (2015, p. 116)



The myth of a lumbering, bureaucratic state versus a dynamic, innovative private sector.



<http://marianamazzucato.com/the-entrepreneurial-state/>



[Grafik: Detecon, Daniel Kellmerit, 2014]

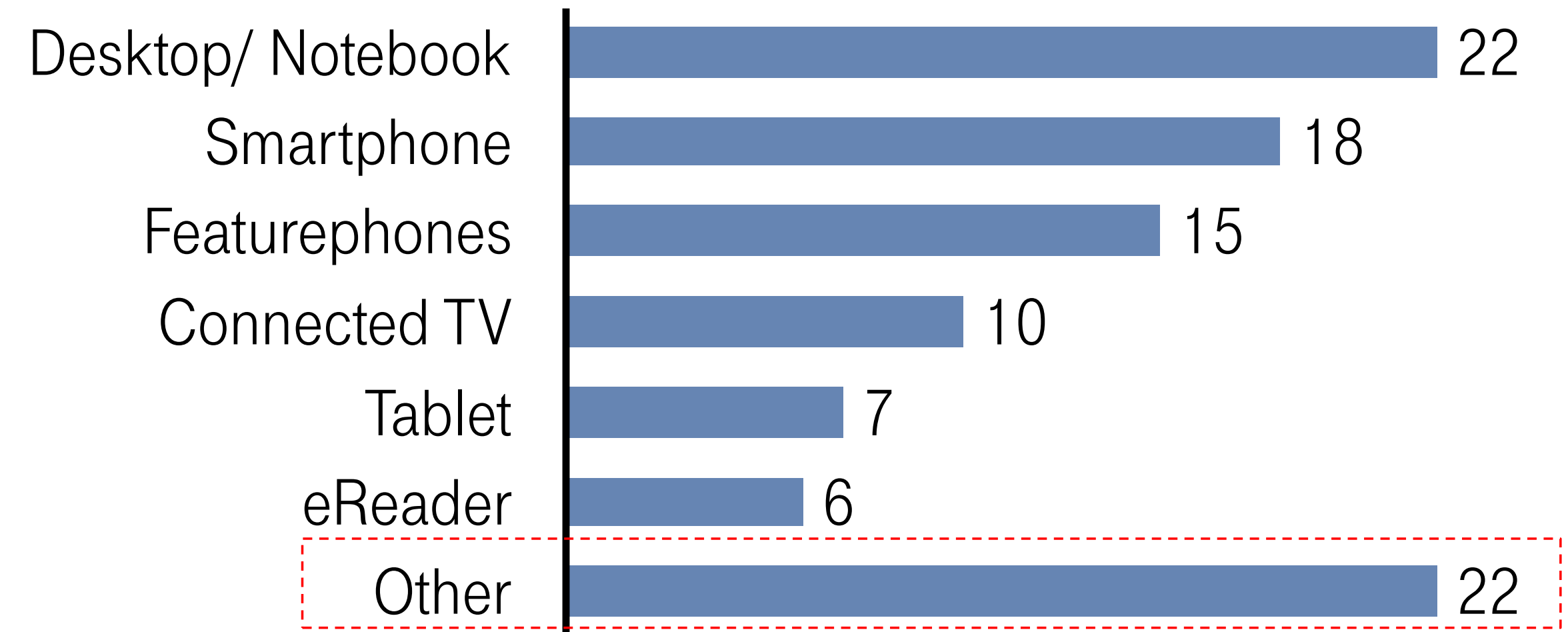
Bluetooth

~2B Bluetooth-Enabled Devices Shipped globally in 2012E, Up 87X in 10 Years

Wi-Fi

~1.5B WI-Fi Enabled Devices Shipped Globally in 2012E, Up 5X in 4 Years

Connected devices in the United States in 2012, by device type



■ % of Connected Devices in US (Q3'12)

nest™



Vacation & Real Estate Sharing



Skill Sharing & Micro Jobs



Car Sharing



Everything & Anything



[Grafik: Detecon Analysis, Daniel Kellmereit, 2014]



Personalized Remote Treatment

- Cloud connected devices
- Analytics for diagnosis



Research and Trials

- Data continuously fedded
- 3rd party APIs for research



Public health

- Geolocated data
- Solutions for mass diseases

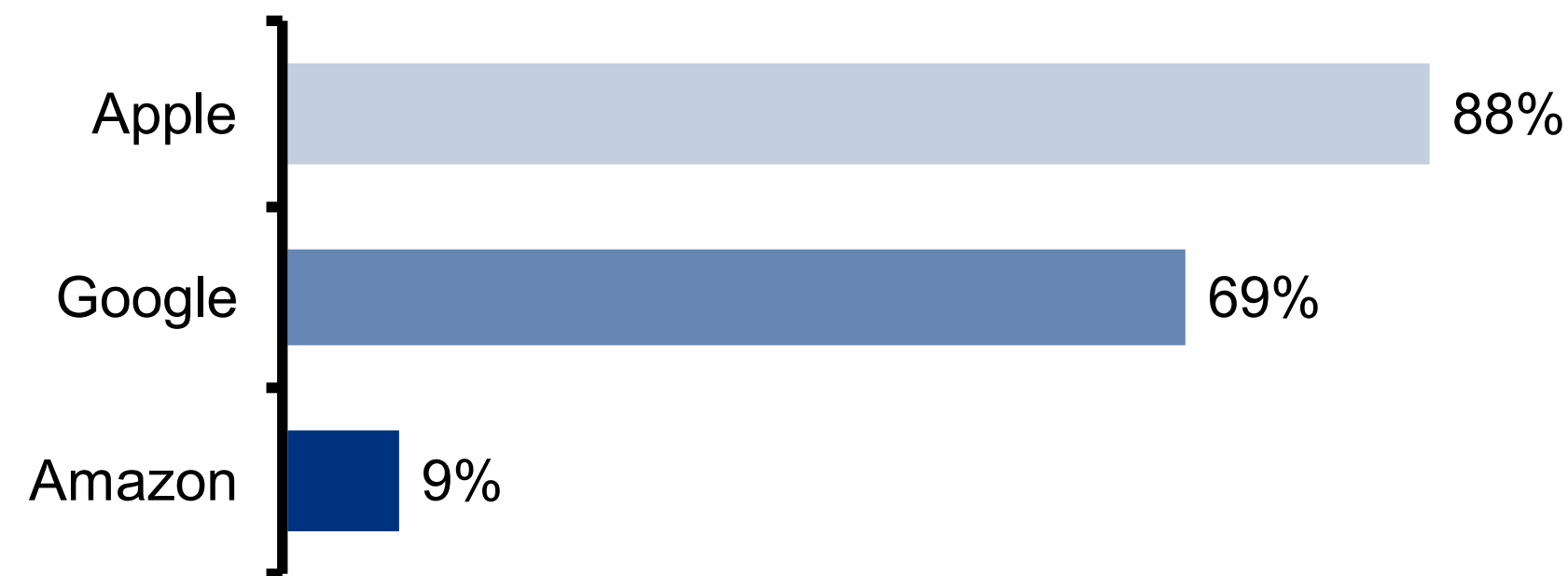


Intelligent assistant

- AI for doctors
- Help in decision making

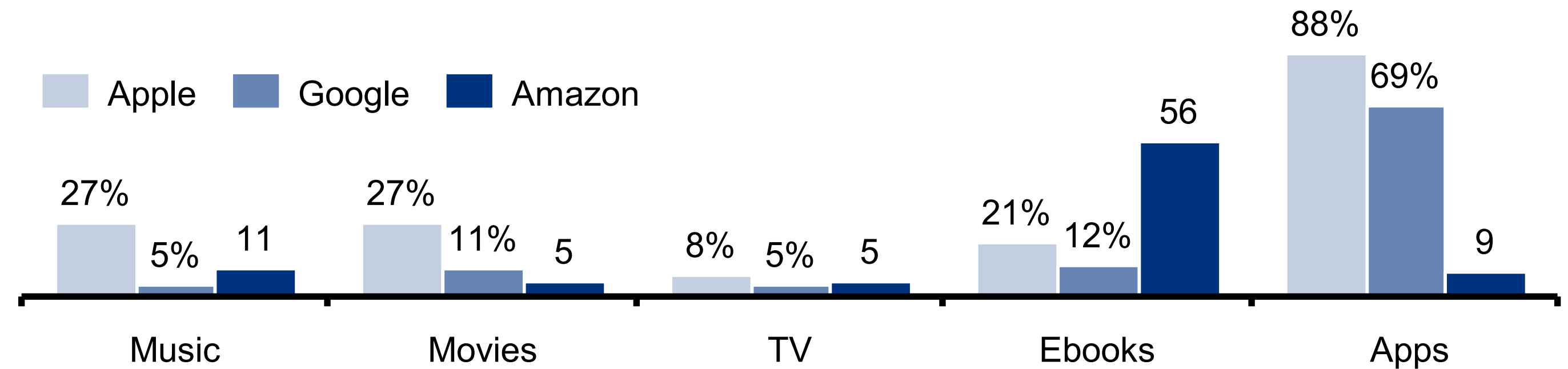


Access to World Population
(% of World Population)



Source: Macstories 2012

Access to World Population by Type of Service
(% of World Population)



Player	Cloud Services	Connected Devices	Sales Channels and Billing	On-demand content	Value-add Services	Targeted Advertising
	●	●	●	●	●	●
	●	●	●	●	●	●
	●	●	●	●	●	●

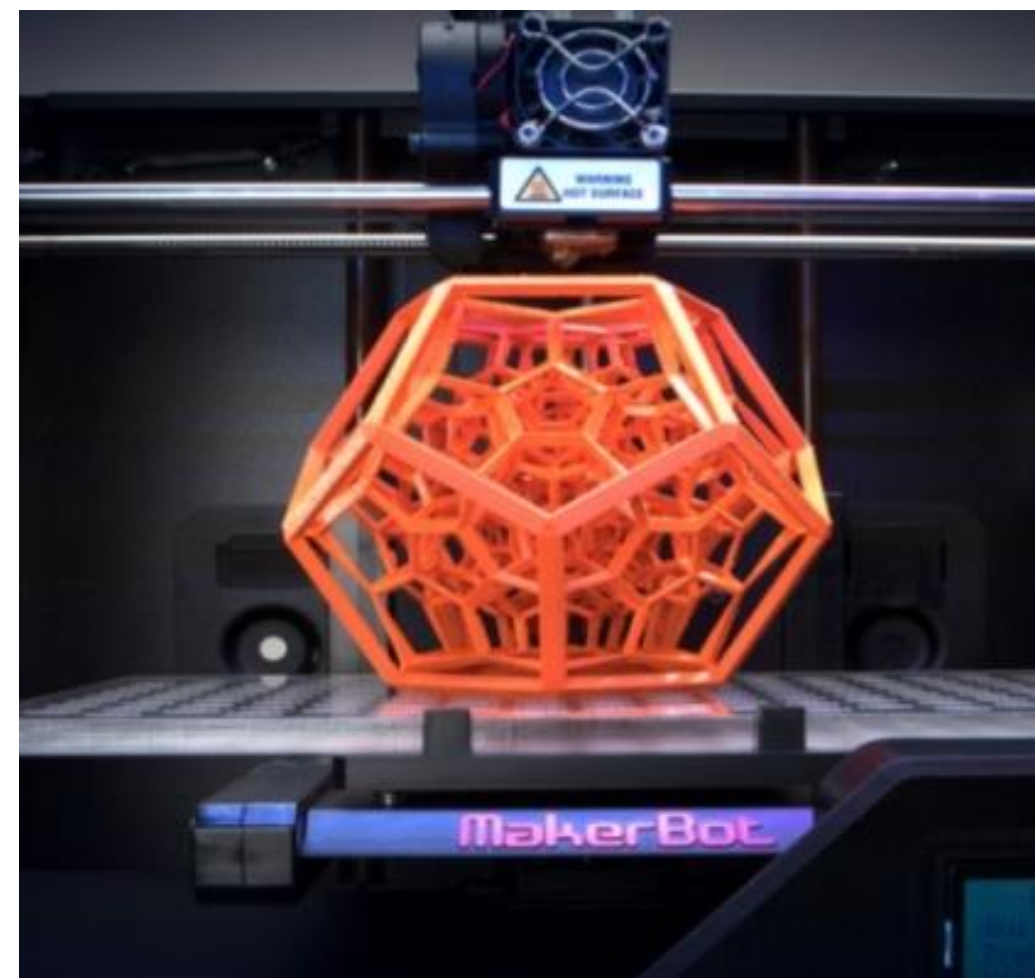
Source: Detecon Analysis (2012)



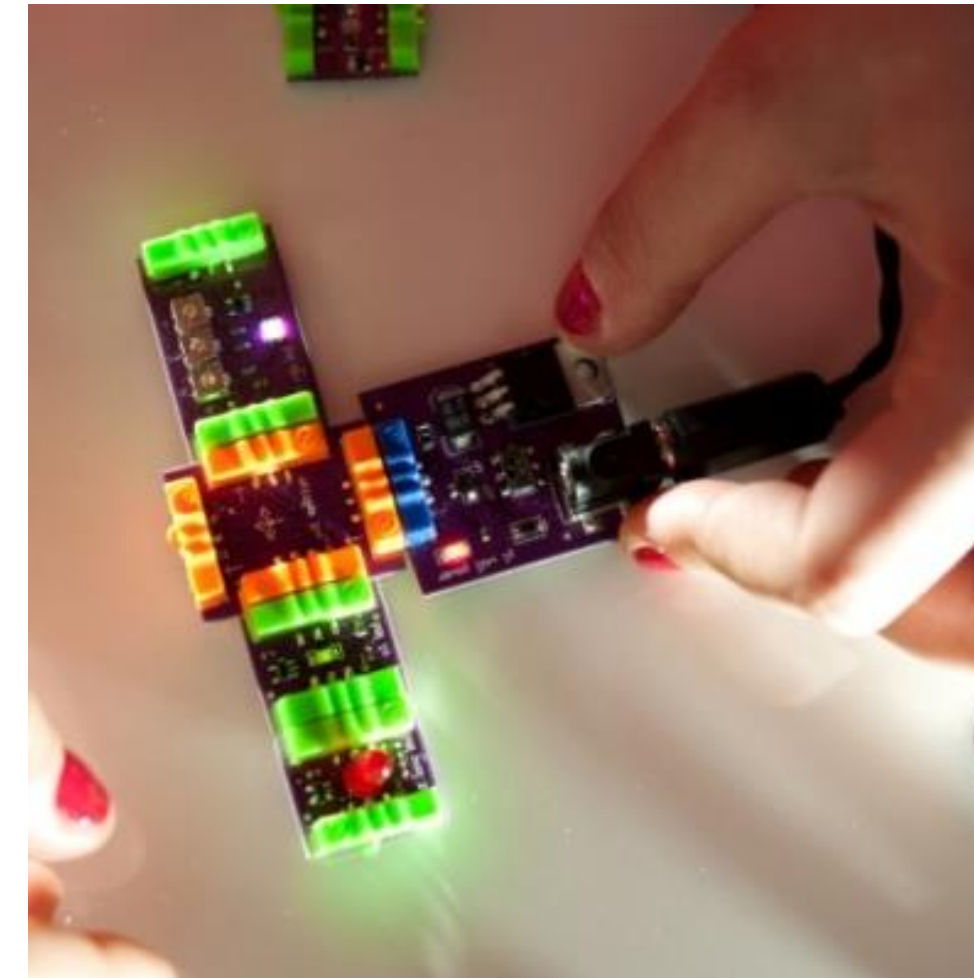
Personal Drones



3D printing in The Home



Build your own Gadget



Disruptive AI

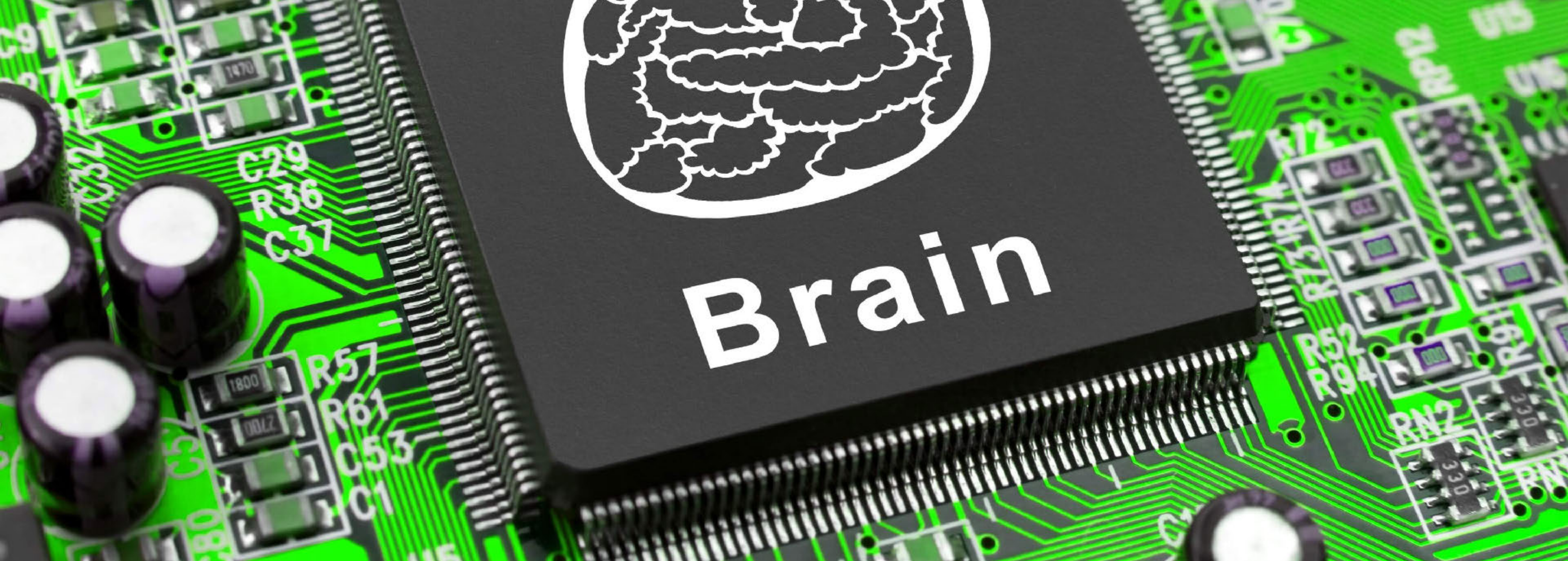


[Grafik: Detecon Analysis, Daniel Kellmereit, 2014]

Robotics

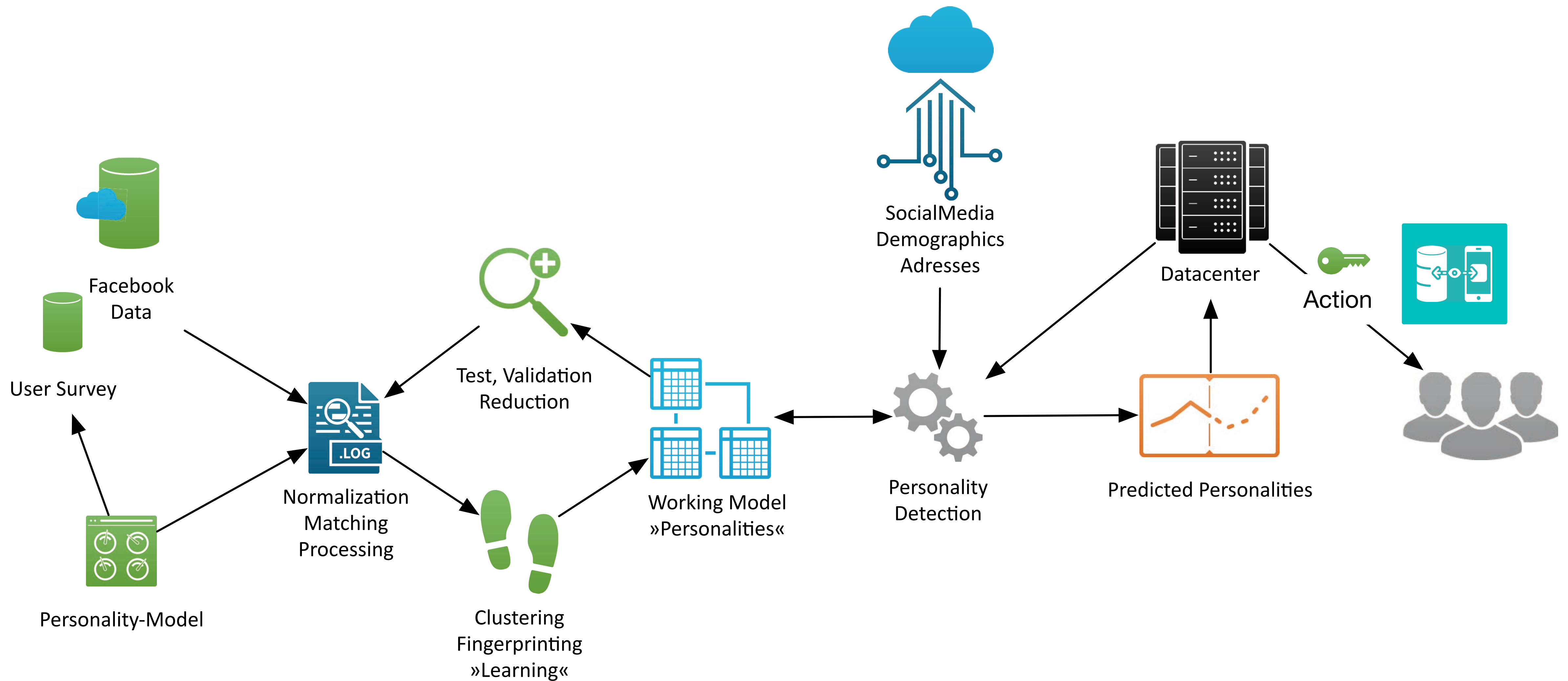


<https://youtu.be/Xrtl9wNPdr0>

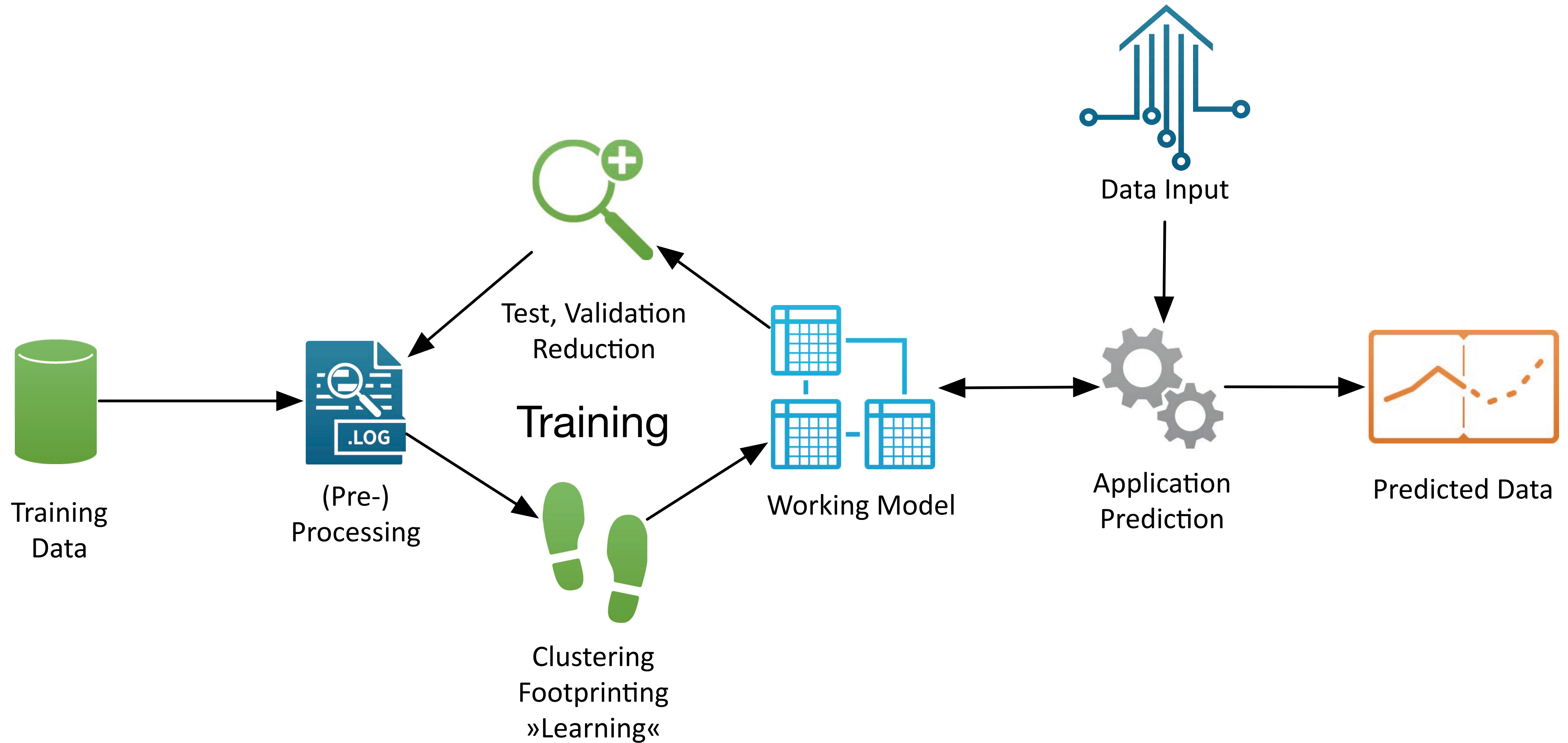


Artificial Intelligence,
Big Data, Neural Networks,
Machine Learning, Deep Learning

Cambridge Analytica Case (US Election, Brexit, 2016)



Machine Learning Principle



Our Jobs!?

Computerizable Jobs

Select occupations ranked according to their probability of becoming automatable.

Position	Probability of automation
Loan Officers	98%
Receptionists and Information Clerks	96%
Paralegals and Legal Assistants	94%
Retail Salespersons	92%
Taxi Drivers and Chauffeurs	89%
Security Guards	84%
Cooks, Fast Food	81%
Bartenders	77%
Personal Financial Advisors	58%
Computer Programmers	48%
Reporters and Correspondents	11%
Musicians and Singers	7.4%
Lawyers	3.5%
Elementary School Teachers	0.4%
Physicians and Surgeons	0.4%

Bottlenecks to Computers

Machines are unable to match humans in tasks that require social and creative skills and in jobs that require dexterity or getting into cramped spaces. Some examples of occupations that have low probabilities of automation in the near future.

1. Manipulation

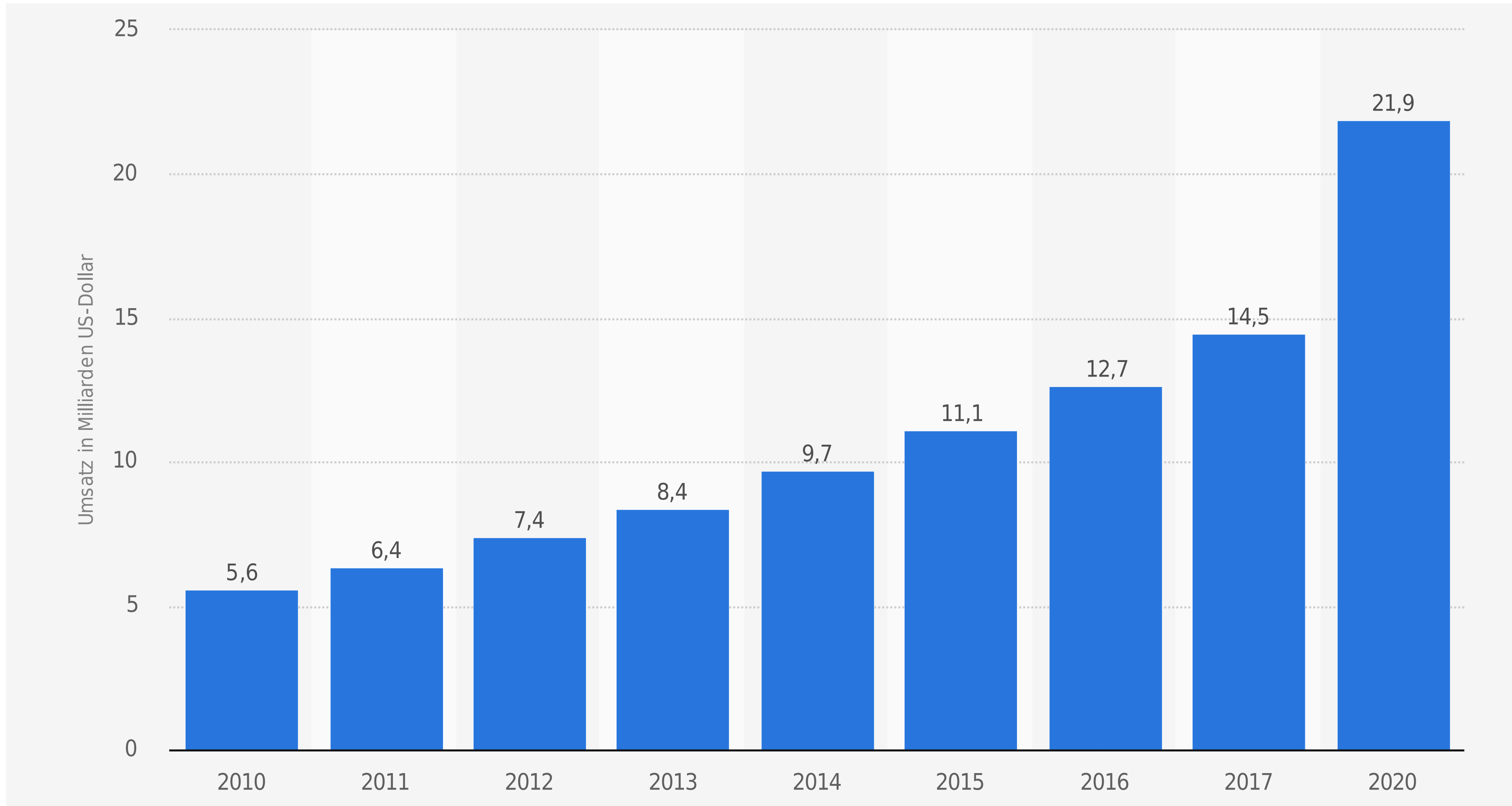


Oral surgeons	0.36%
Makeup artists	1%
Chiropractors	2.7%
Fire fighters	17%

2. Creativity



Prognose zum weltweiten Umsatz mit RFID-Transpondern



*University of Jyväskylä.
Internet-of-Things
Market, Value
Networks, and
Business Models: State
of the Art Report 2015,
p 16, via statista*

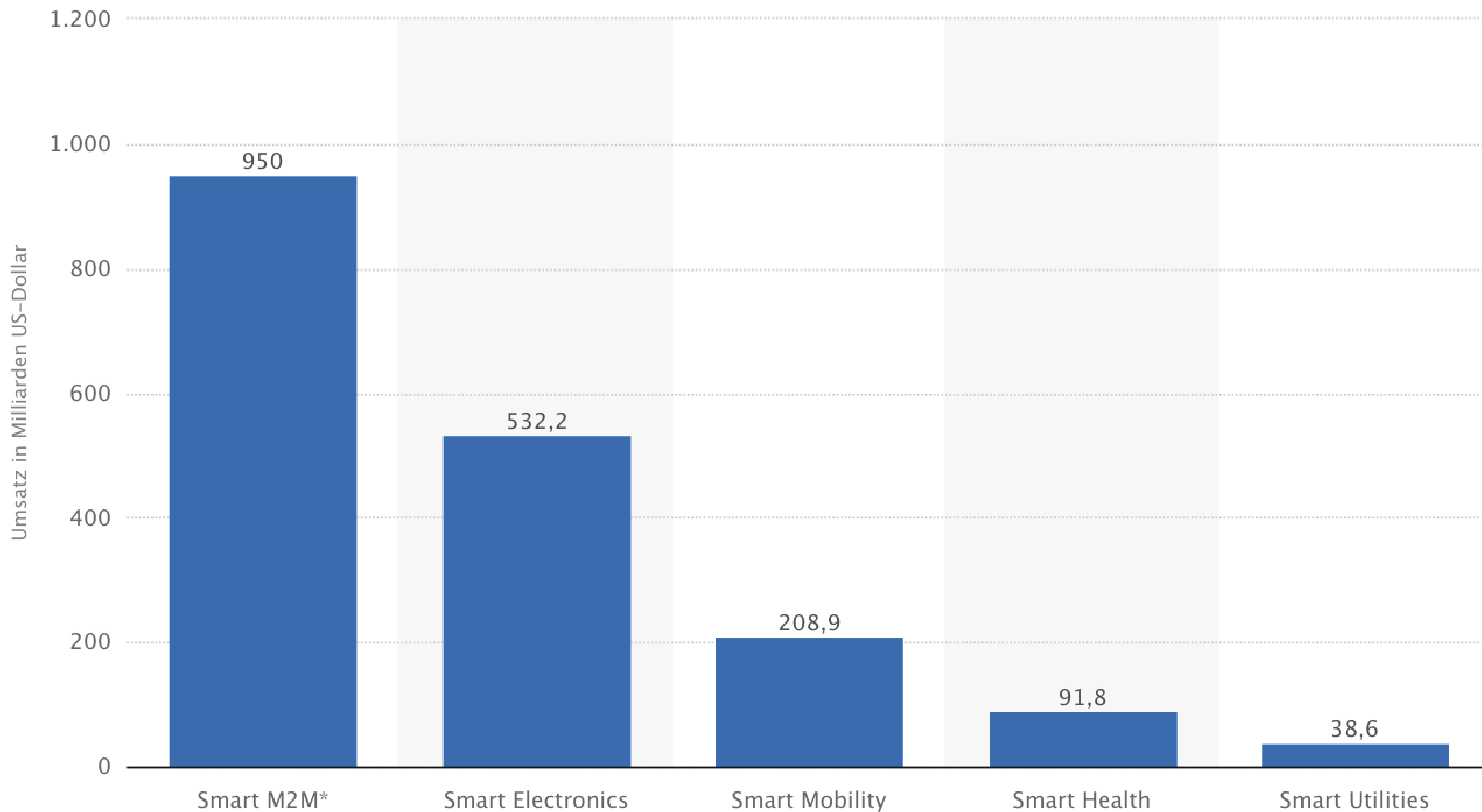


10/01
2017

ICT & Sustainability

Michael A. Herzog

Prognose zum weltweiten Umsatz mit vernetzten Geräten nach Sektor im Jahr 2020



*University of Jyväskylä.
Internet-of-Things
Market, Value
Networks, and
Business Models: State
of the Art Report 2013,
p 16, via statista*

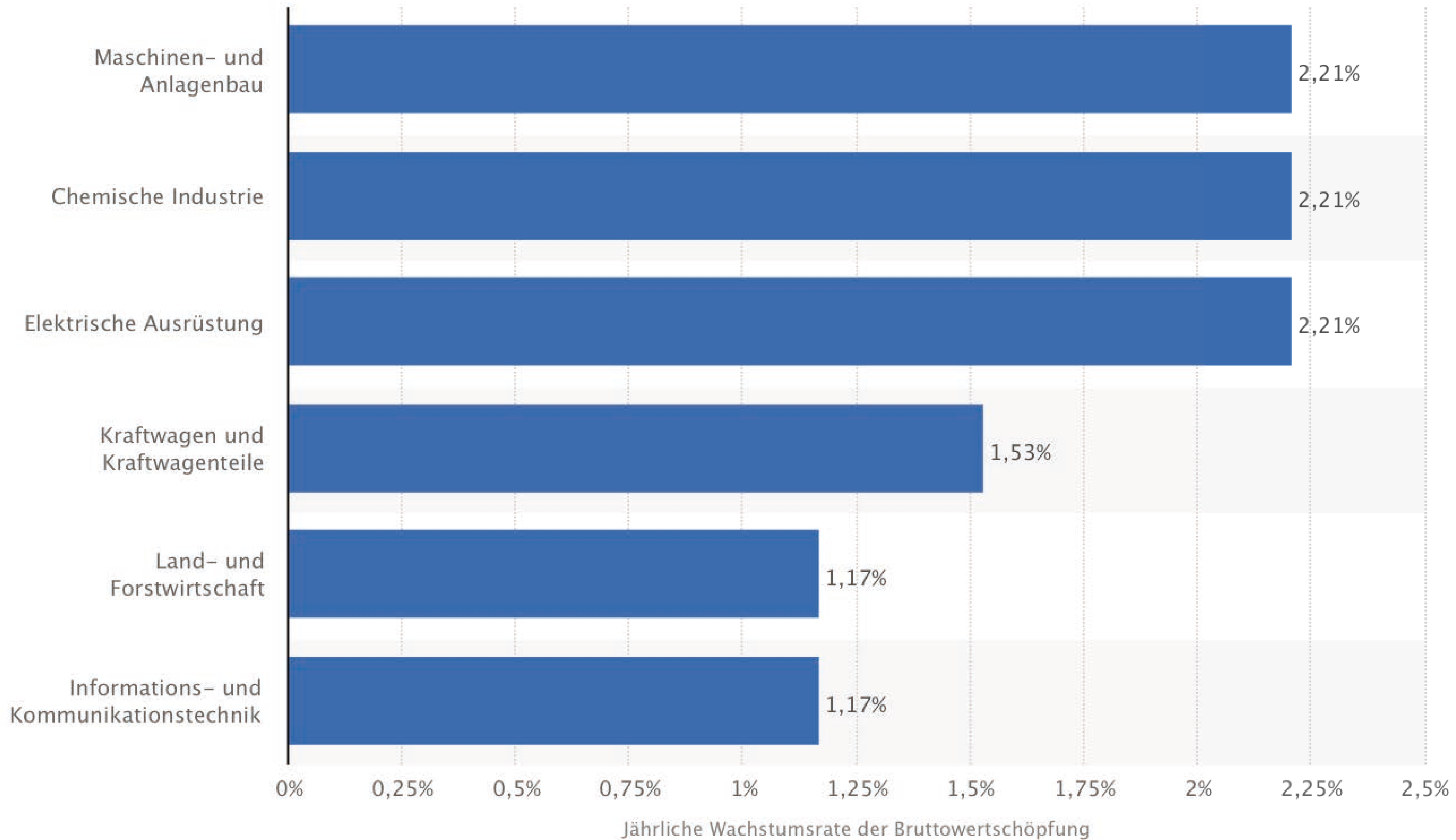


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ICT & Sustainability

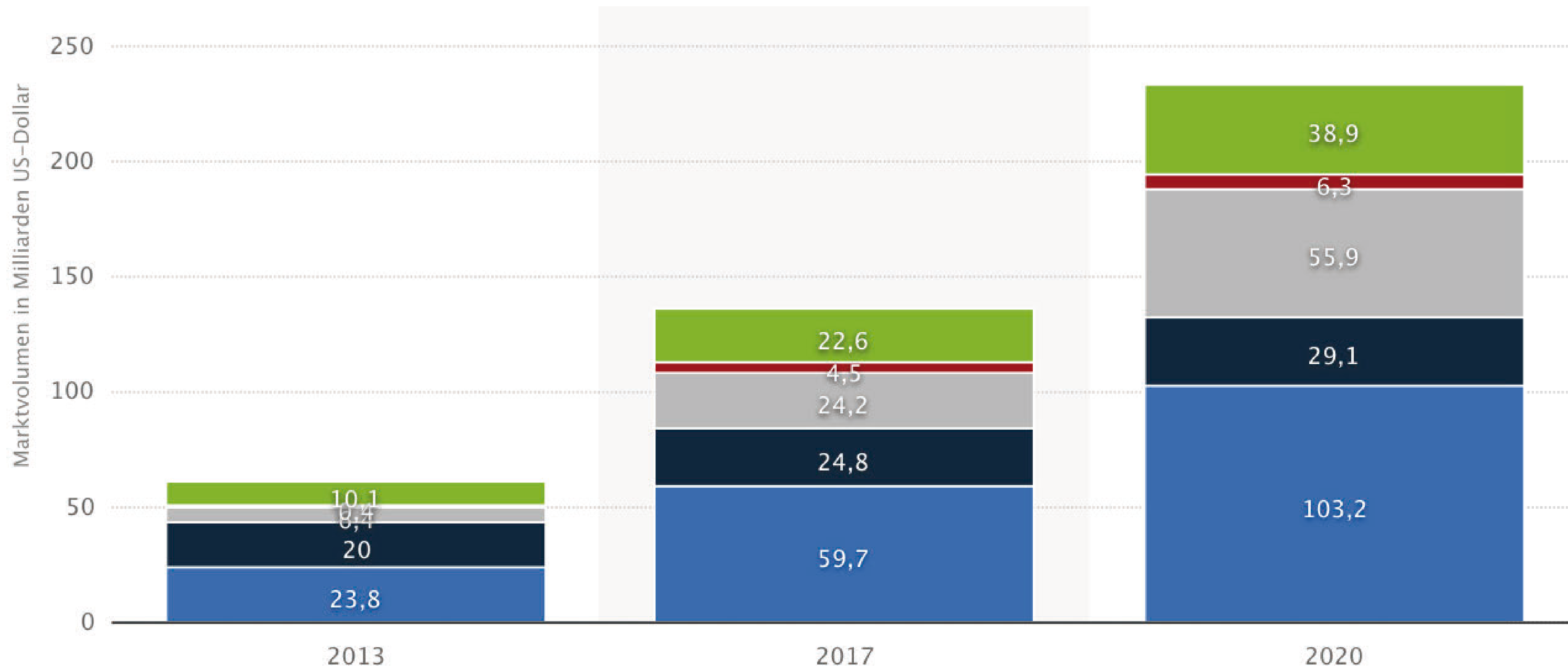
Michael A. Herzog

Jährliche Steigerungsrate der Bruttowertschöpfung durch Industrie 4.0 in Deutschland, 2013 bis 2025



[BITKOM; Fraunhofer IAO: Industrie 4.0 - Volkswirtschaftliches Potenzial für Deutschland, Seite 36, April 2014 via statista]

Umsatzprognose zum weltweiten digitalen Gesundheitsmarkt



Wireless Health EHR/ EMR Mobile Health Telehealth Andere

[Arthur D. Little:
Succeeding with Digital
Health - Winning
Offerings and Digital
Transformation, p. 4,
7/2014 via statista]

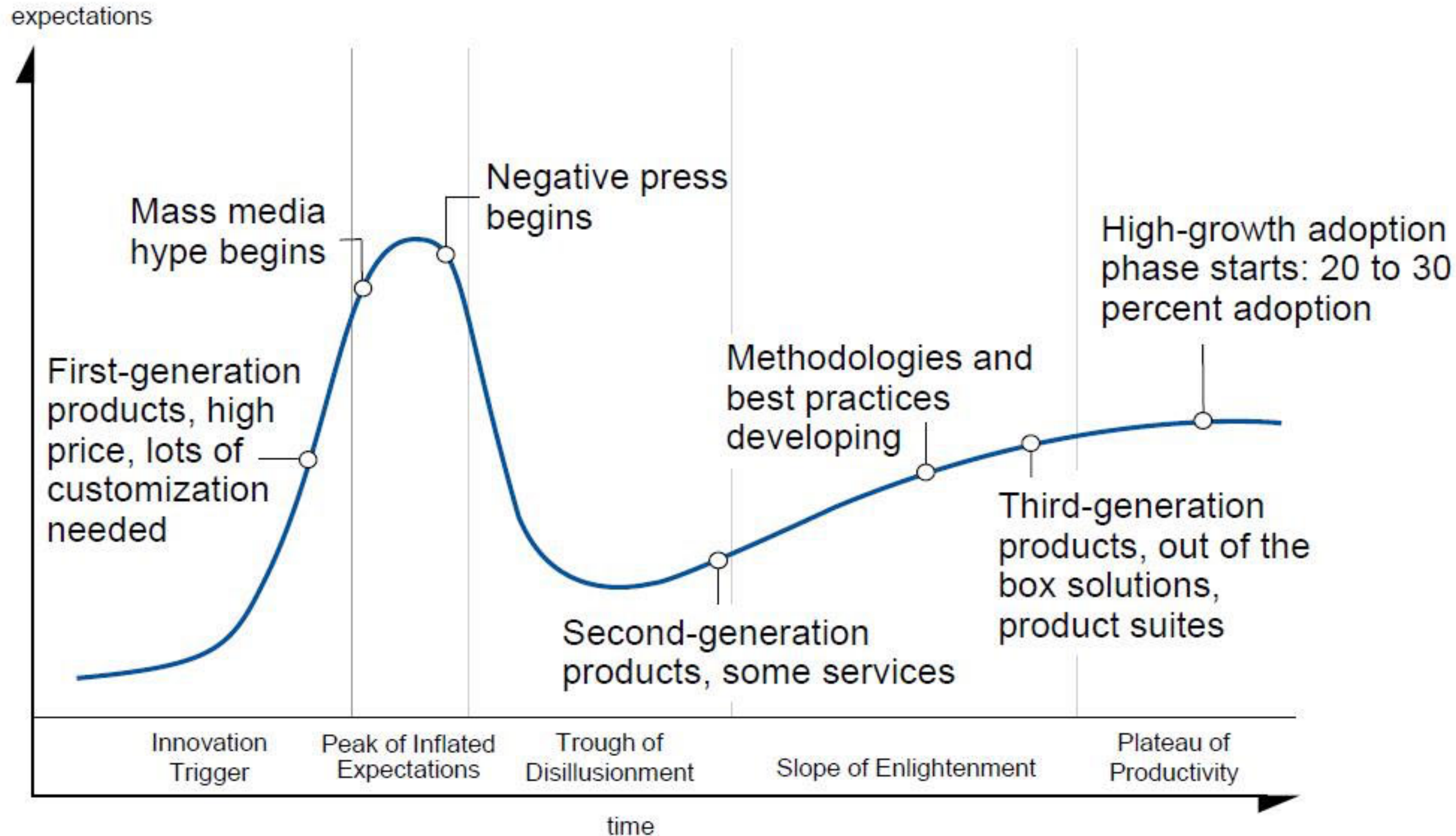


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2017

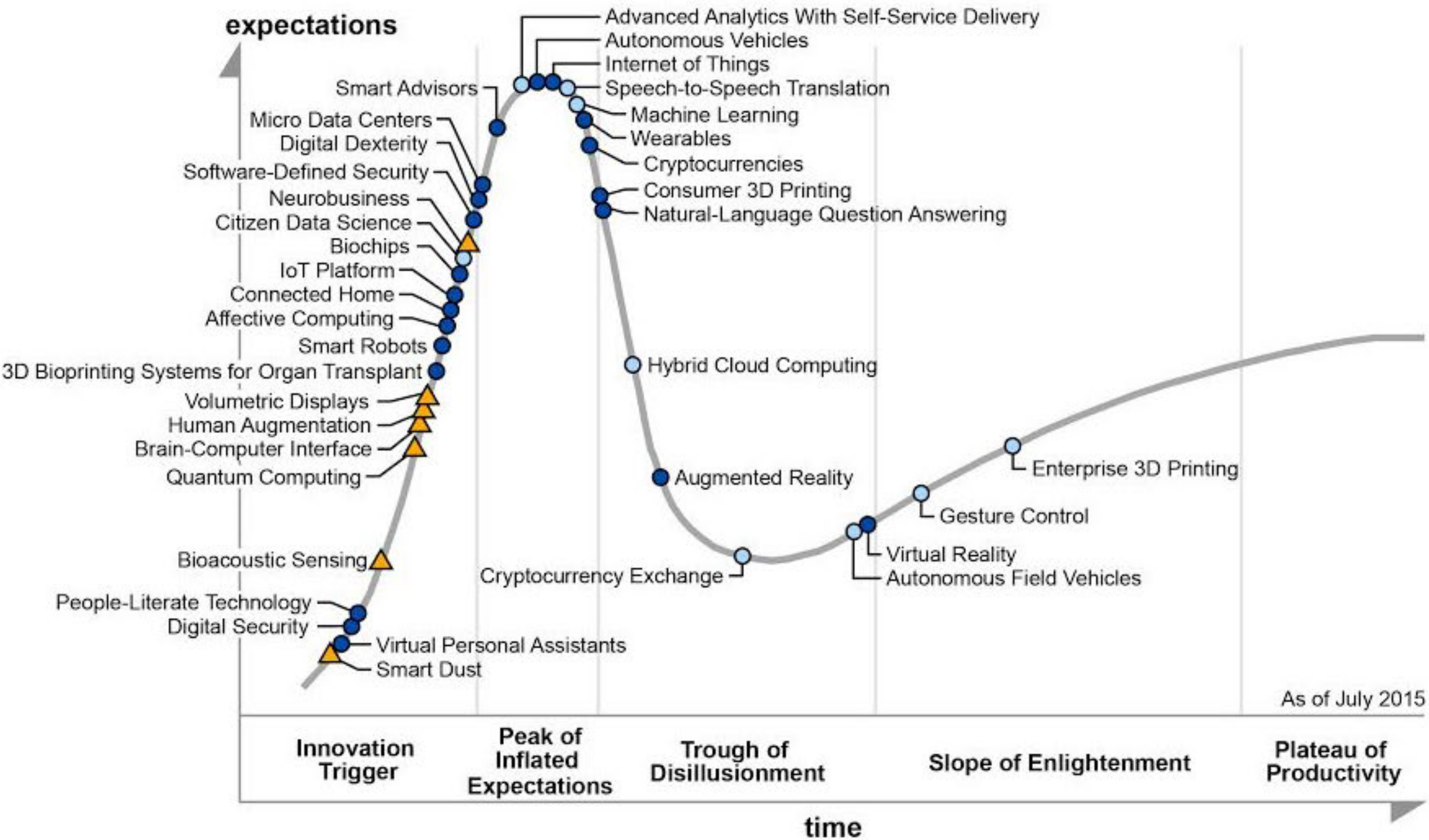
ICT & Sustainability

Michael A. Herzog

The Hype Cycle of Innovation



Gartner's Hype Cycle for Emerging Technologies: Gartner 2013



As of July 2015

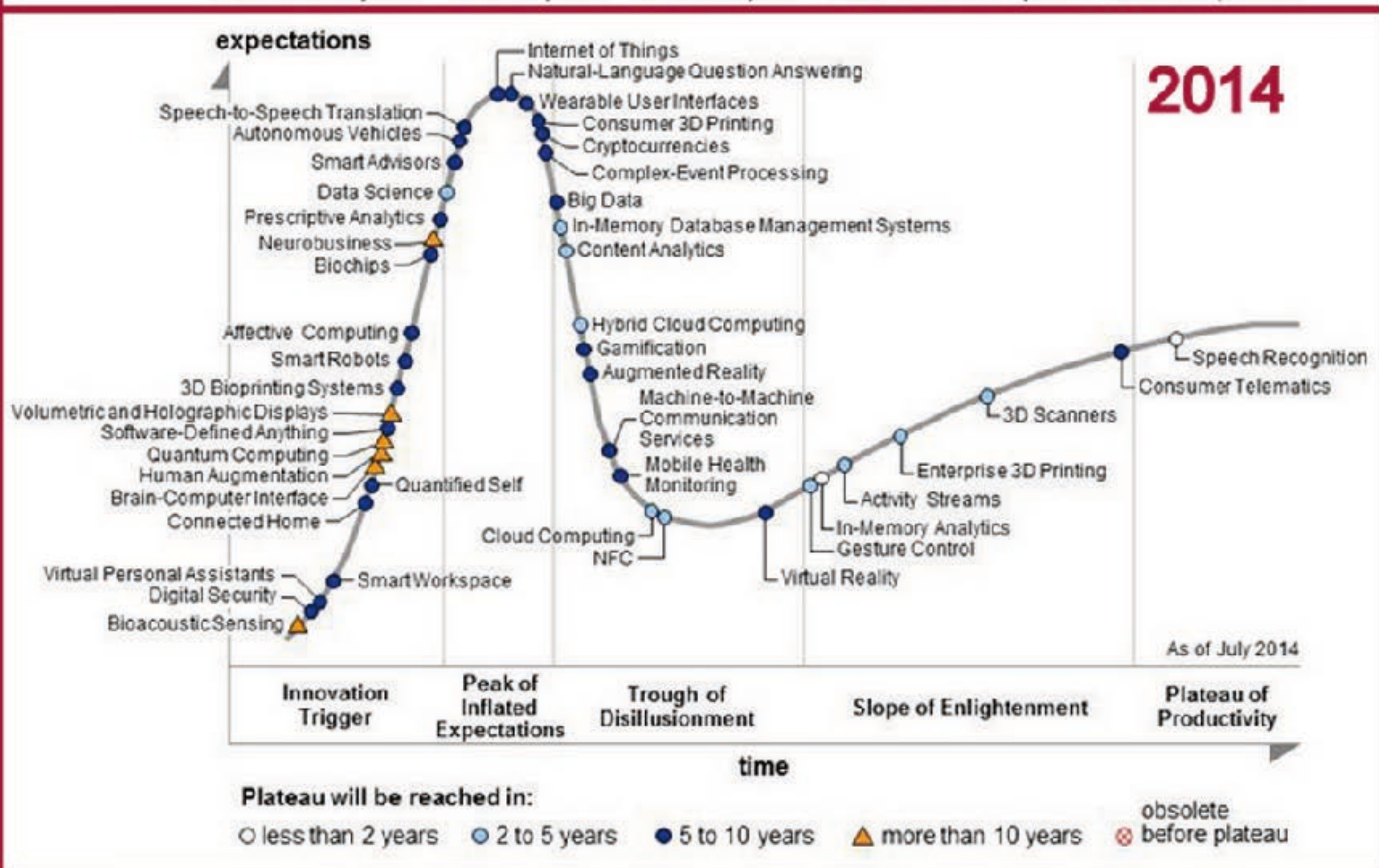
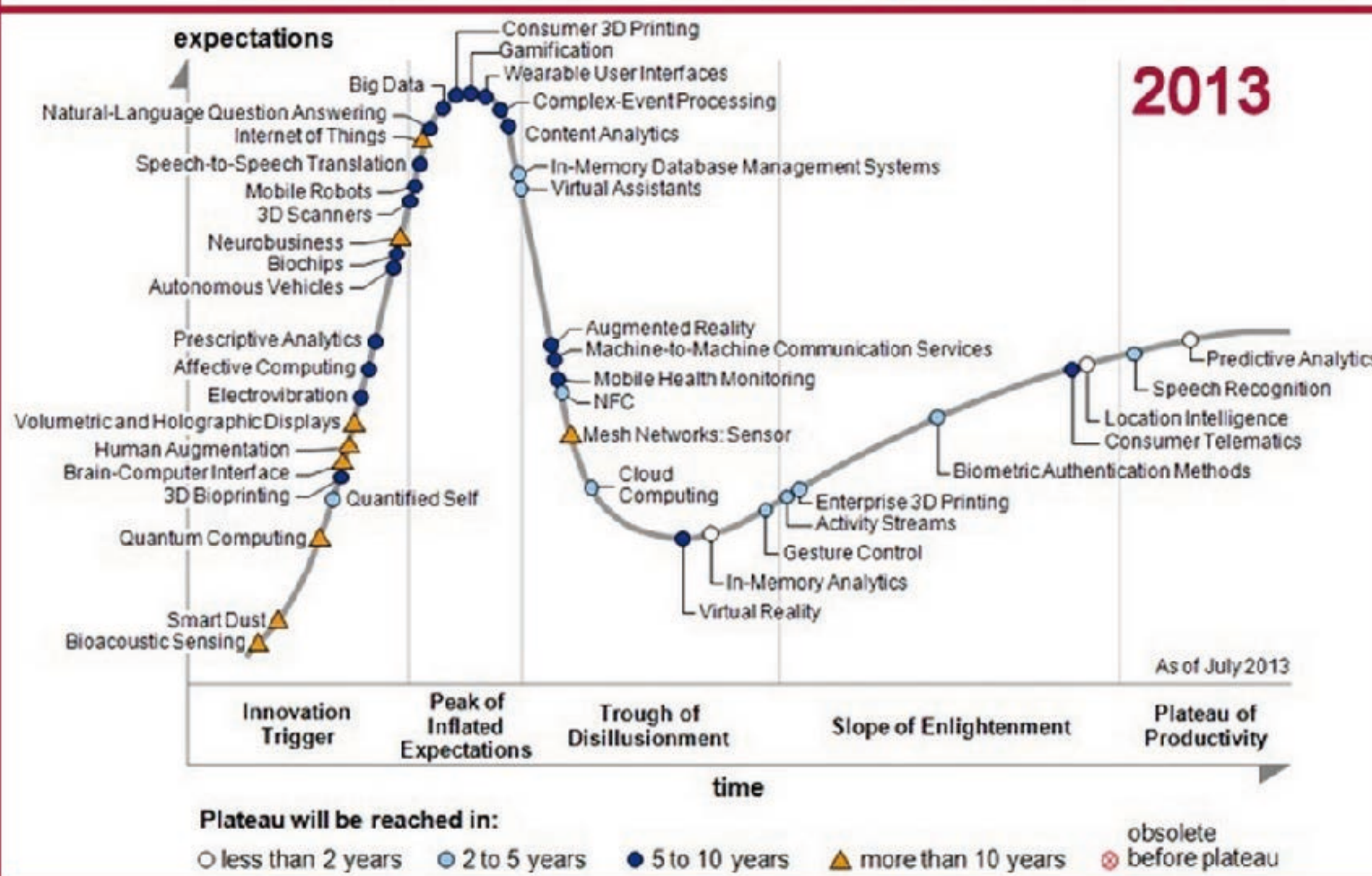
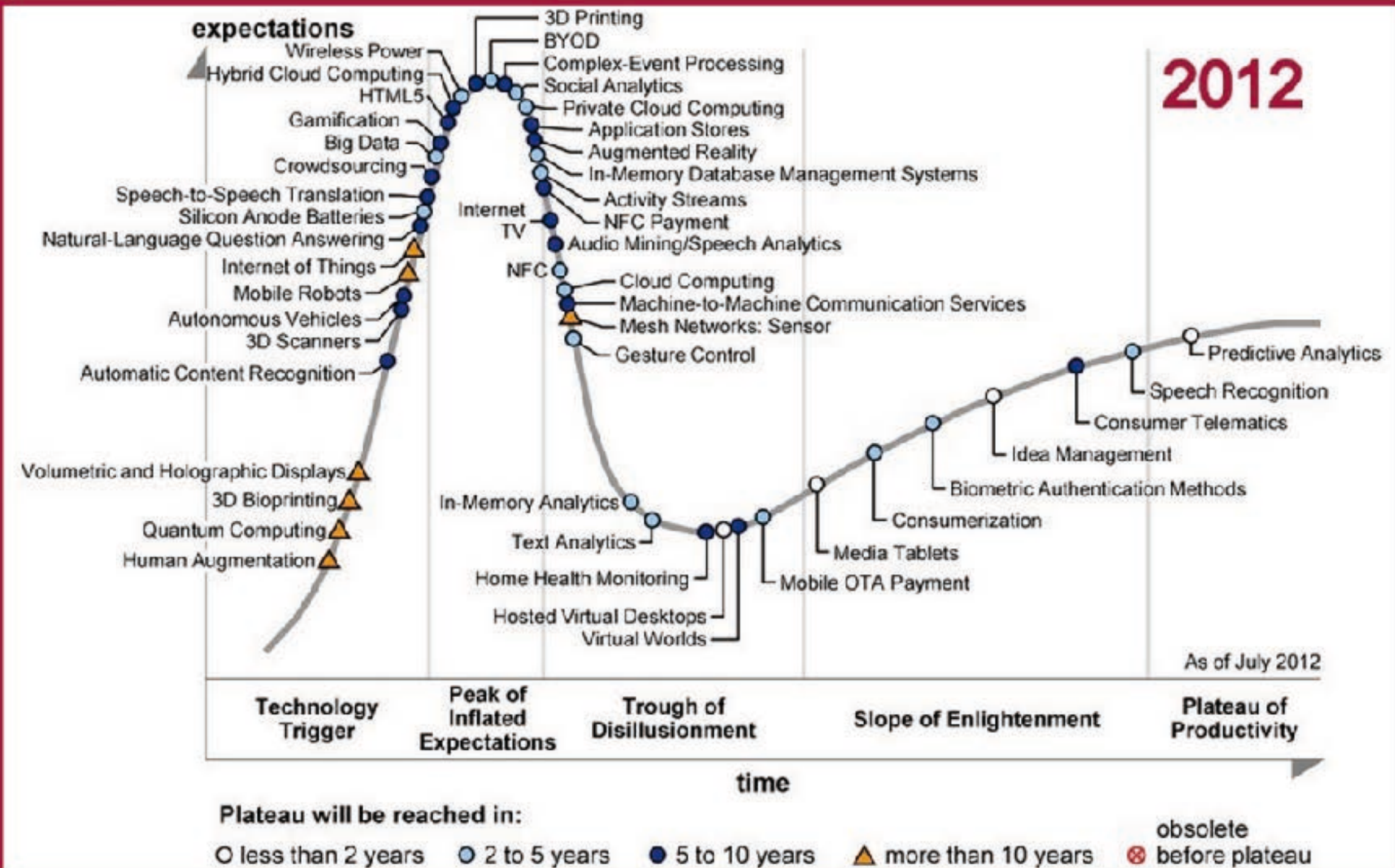
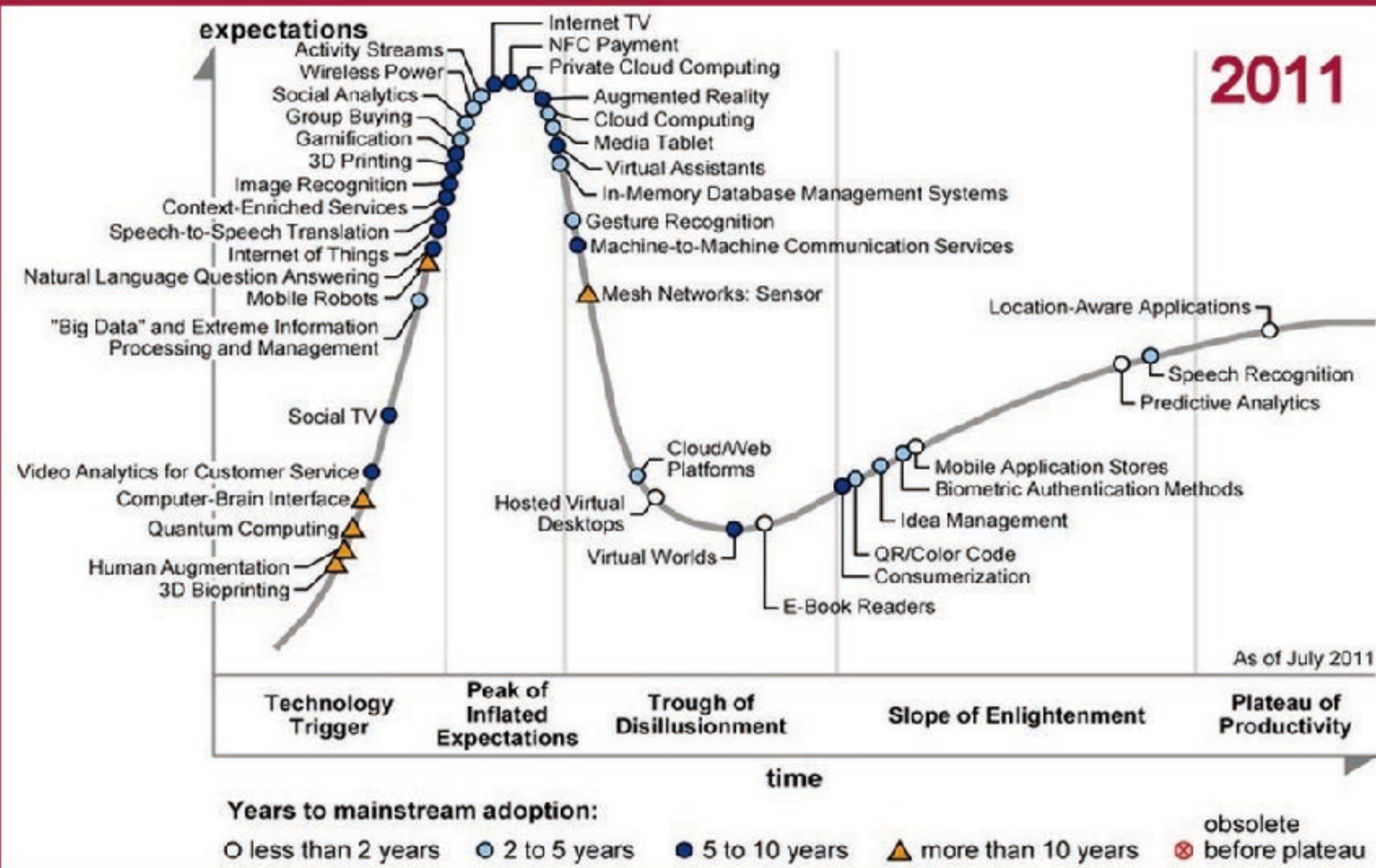
Plateau will be reached in:

- less than 2 years
- 2 to 5 years
- 5 to 10 years
- ▲ more than 10 years
- ⊗ obsolete before plateau

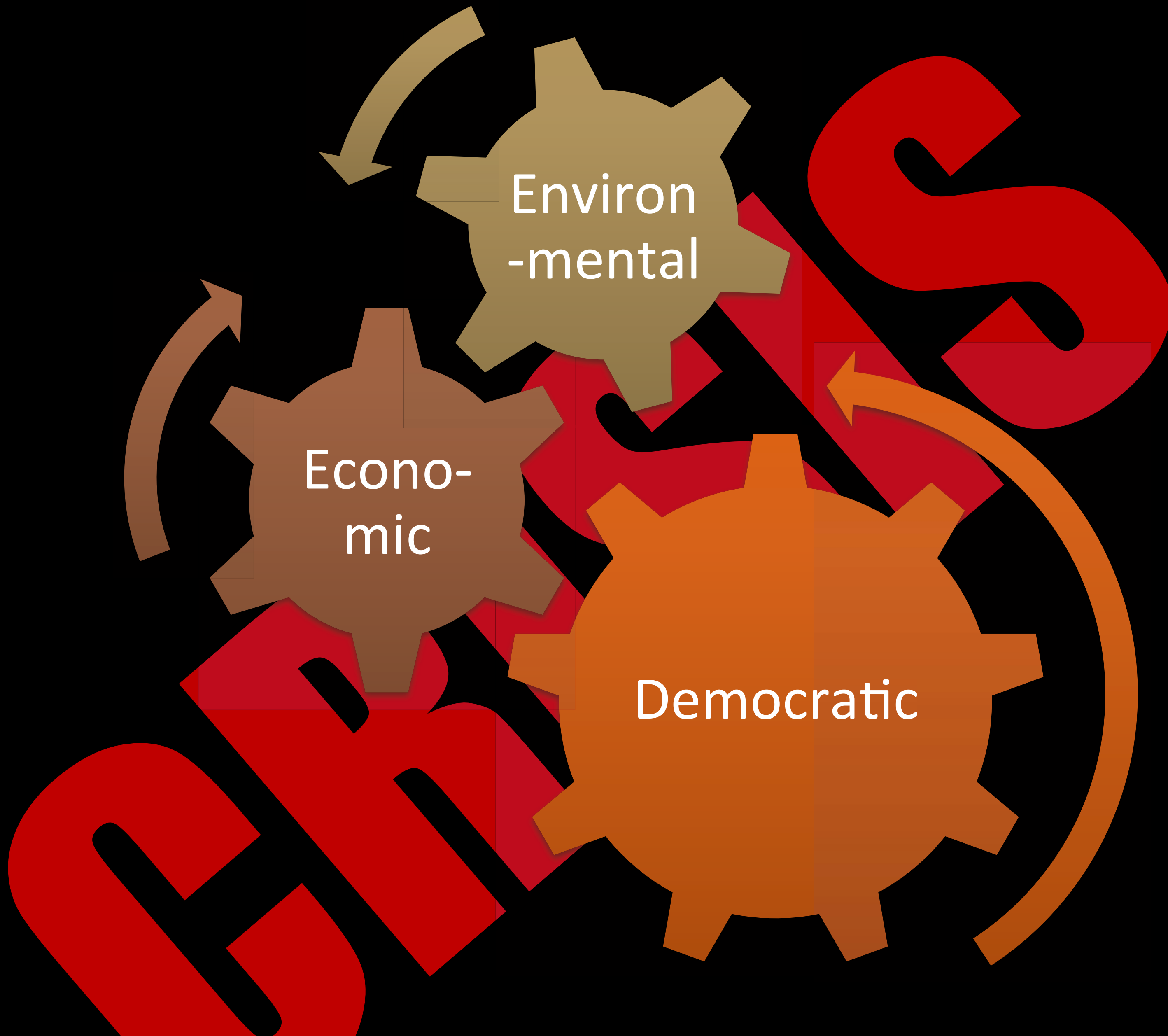
Gartner's Hype Cycle for Emerging Technologies. Sources: Gartner 2015



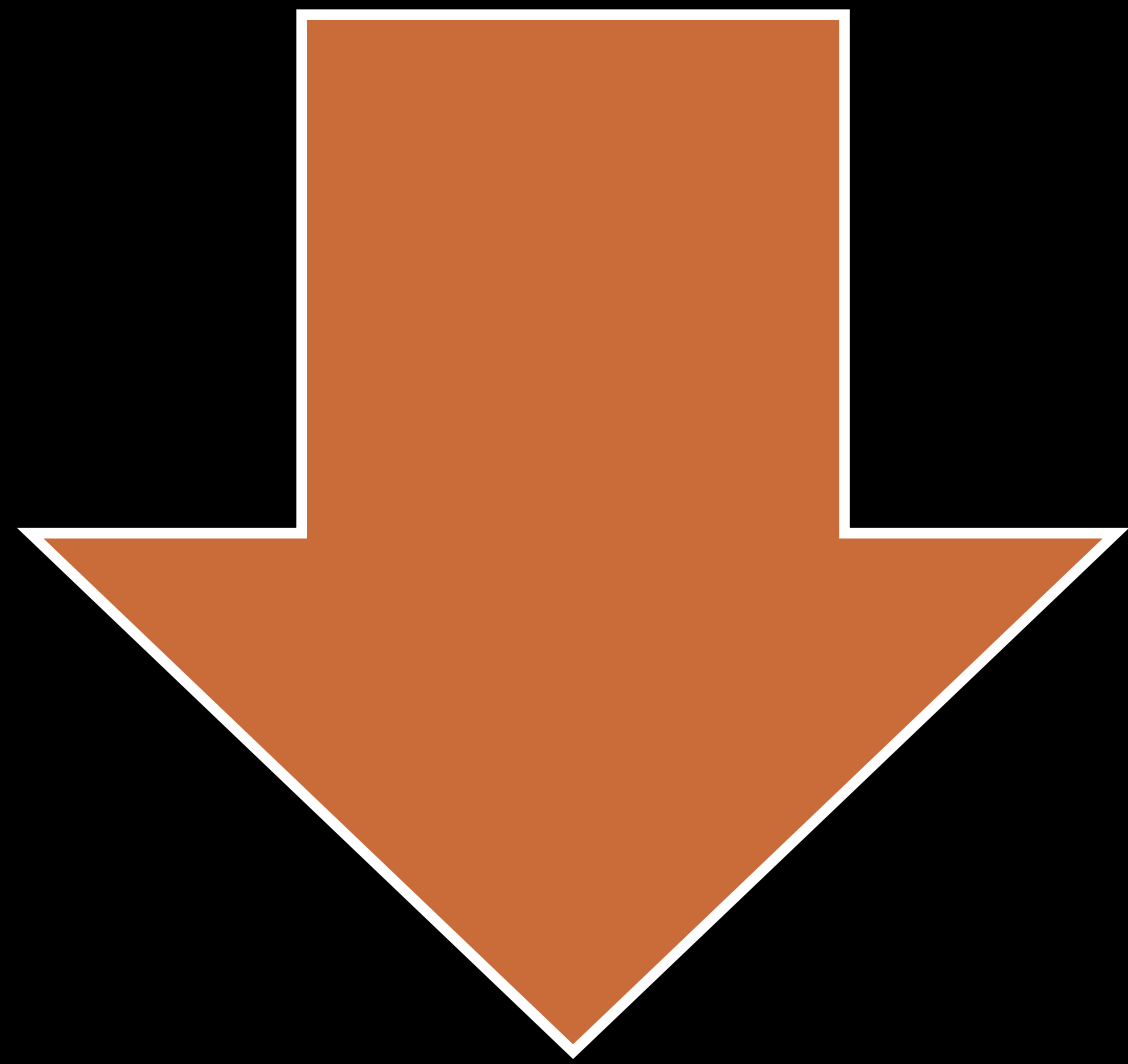
Gartner's Hype Cycle for Emerging Technologies. Sources: Gartner 2016



Gartner's Hype Cycle for Emerging Technologies, 2011-2014.
 Sources: Gartner 2014

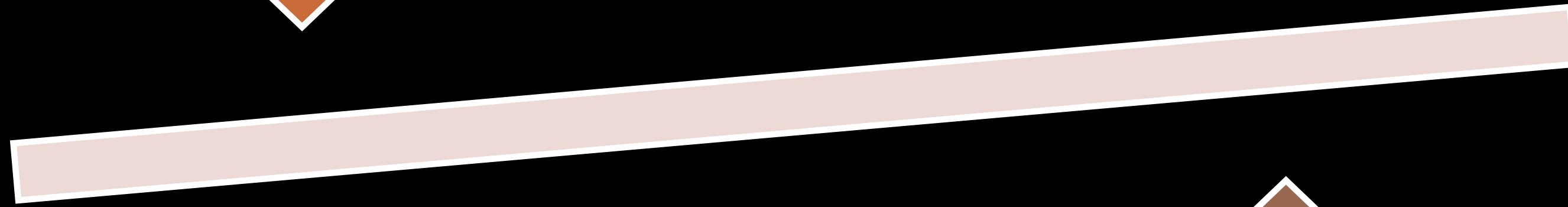


[Jesse Marsh: think virtually local ecologies of new economic models. EcoCom, 08/11/2013, Berlin, Germany]



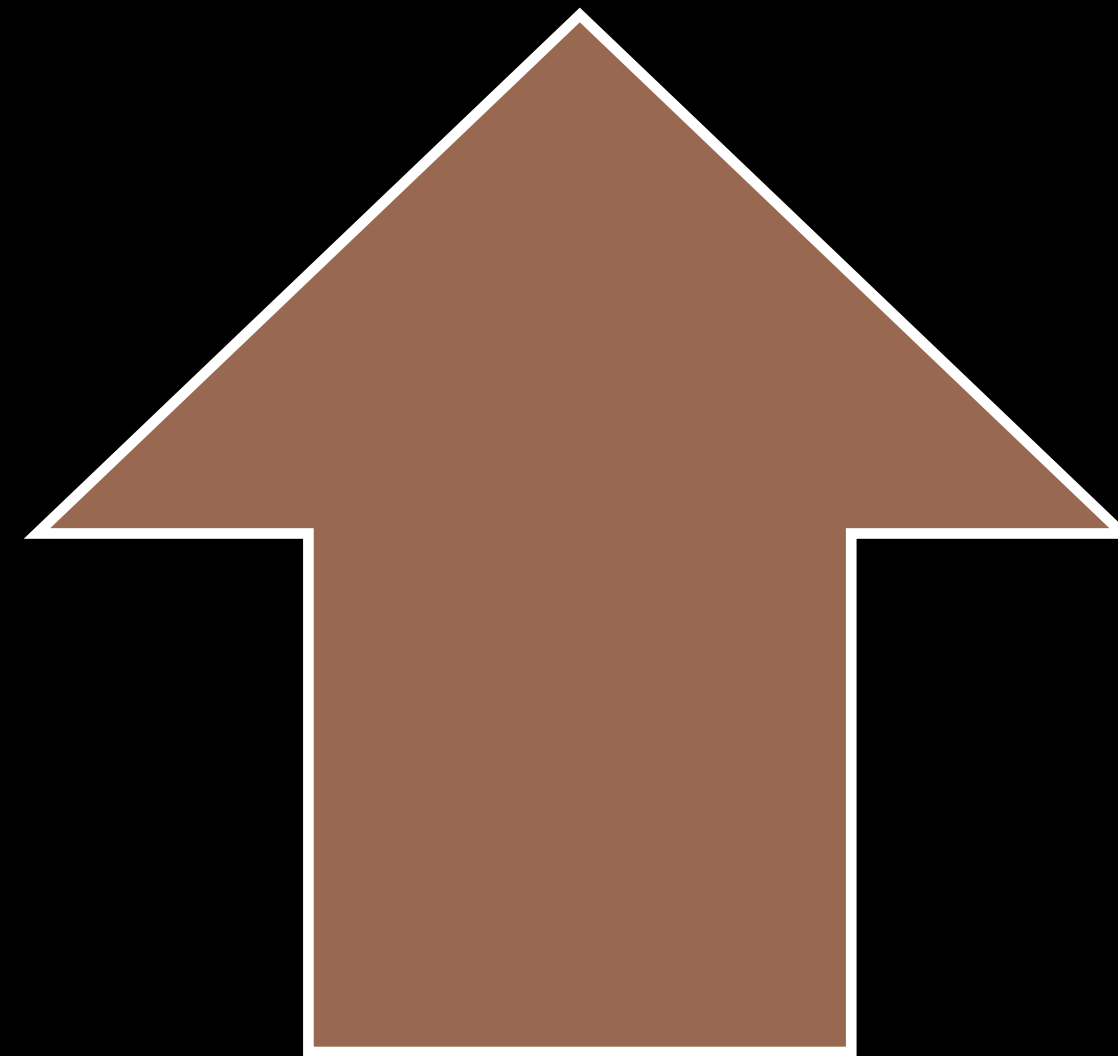
Macro

- Globalisation
- Financialisation
- Growth imperative



Micro

- Local economies
- De-monetisation
- Survival



[Jesse Marsh: think virtually local ecologies of new economic models. EcoCom, 08/11/2013, Berlin, Germany]

Traditional business

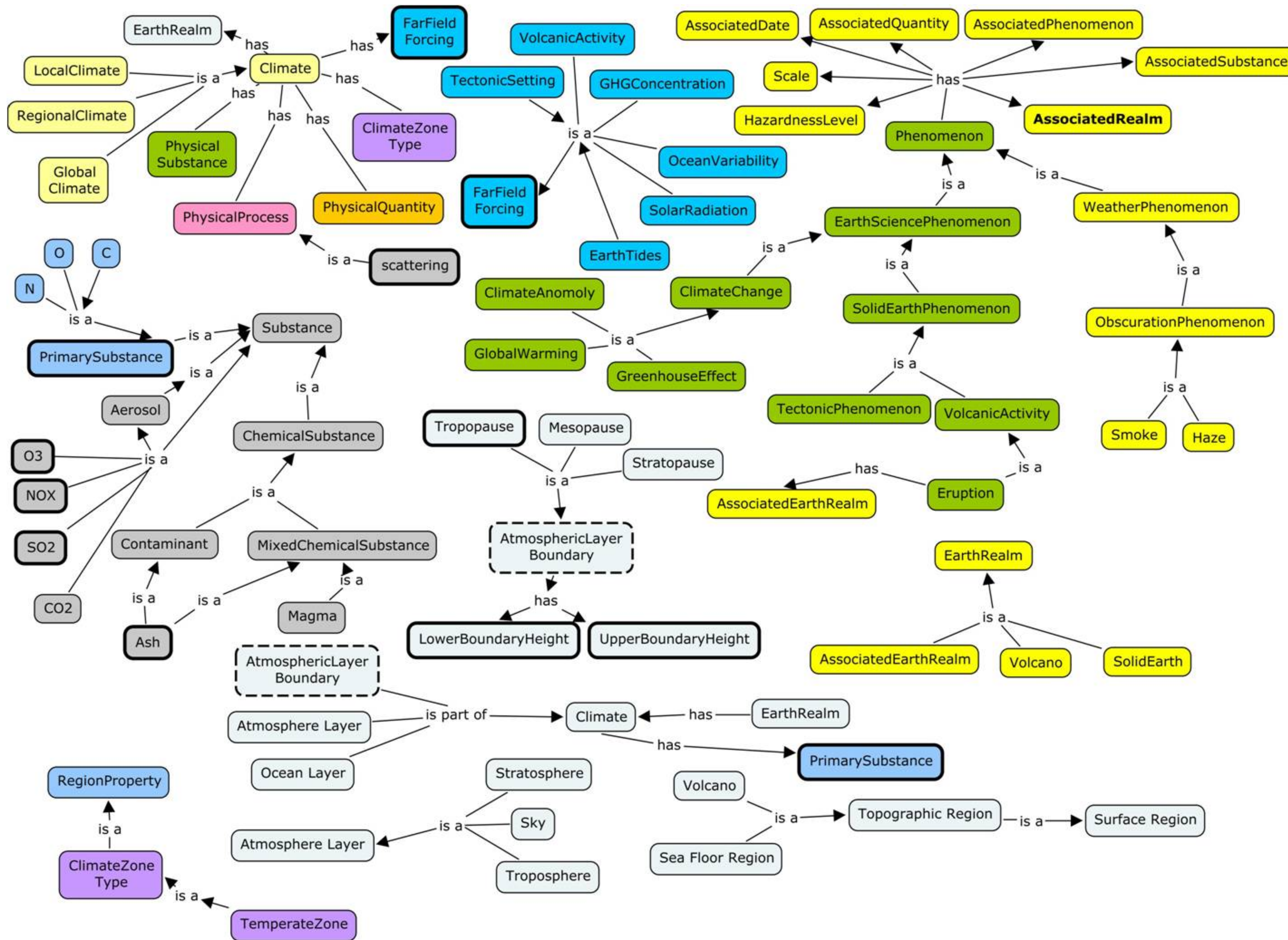
- We are competing
- Market regulations

Emergent ecosystems

- We are collaborating
- Ethical principles

[Jesse Marsh: think virtually local ecologies of new economic models. EcoCom, 08/11/2013, Berlin, Germany]





ICT codifies knowledge to manage it

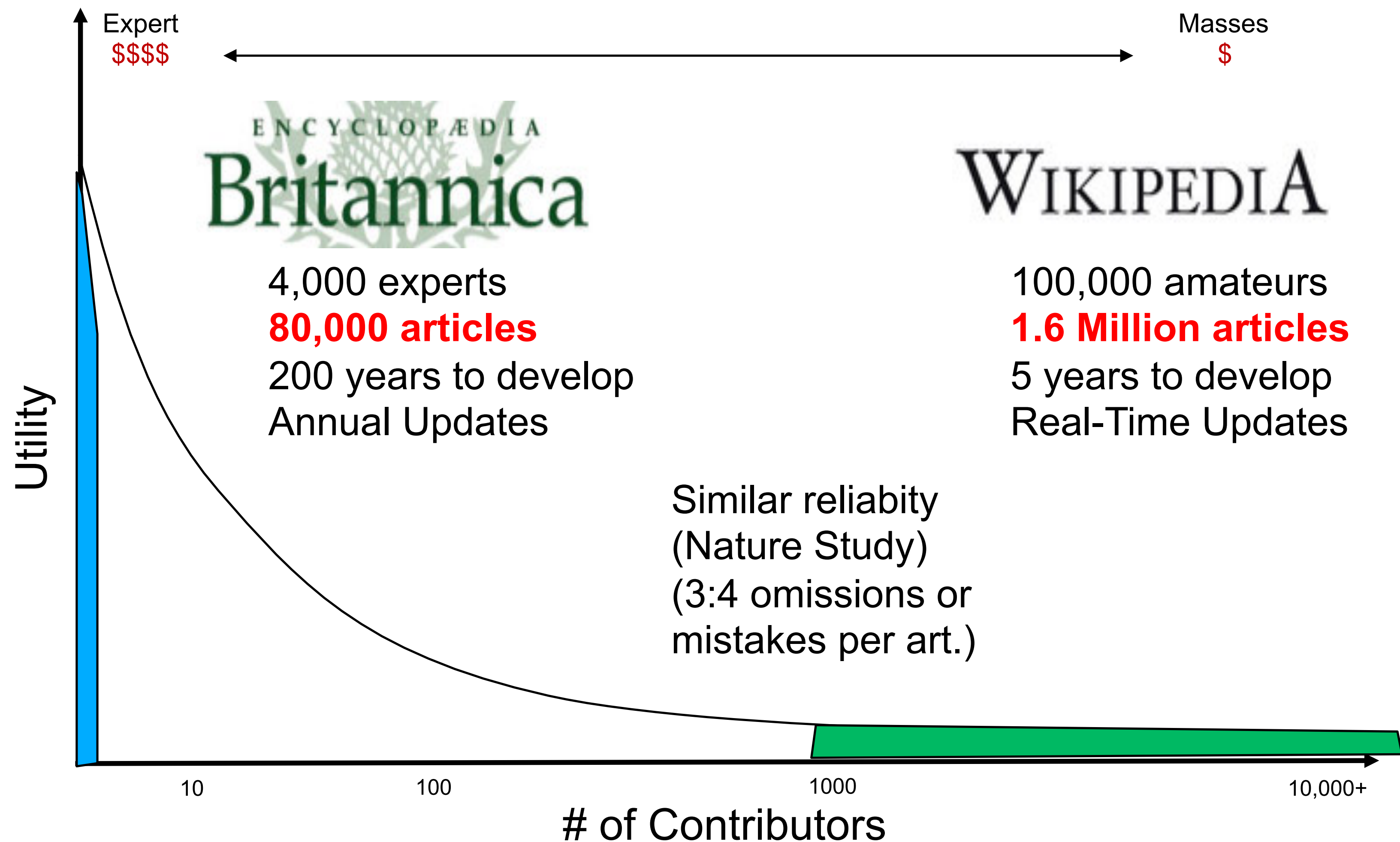
[Jesse Marsh: think virtually local ecologies of new economic models. EcoCom, 08/11/2013, Berlin, Germany]



10/01
2017



Economics vs. Wikinomics



Nature, 2005. Cited in: Cook (2008): The Contribution Revolution, HBR, Oct 2008, pp. 63

[Matthias Trier: Sociality of Online Market Interaction: Challenges and Implications. EcoCom, 08/11/2013, Berlin, Germany]

New Market Mechanisms? The Contribution Revolution (Cook, HBR, 2008)

Users often expect things to cost 0 Money.



But they also often contribute for free.

User Contribution Systems

Active

Passive

Aggregates content

Aggregates stuff for sale

Aggregates behavioral data

Aggregates resources

- From money payments to **new value streams** for your **business models**?
→ **aggregating and leveraging** people's contributions or behaviors

[Matthias Trier: Sociality of Online Market Interaction: Challenges and Implications. EcoCom, 08/11/2013, Berlin, Germany]

Different types of interactions

Fiske's unified framework of

elementary forms of relationships

Money market vs. a social market

Pricing (Markets)

Sharing in Networks

Ranking (Authority)

[Matthias Trier: Sociality of Online Market Interaction: Challenges and Implications. EcoCom, 08/11/2013, Berlin, Germany]



We even need to change our economic theories!

- ▶ 30% behaved selfish – but 50% cooperative
- ▶ Neural and even genetic evidence for cooperation
- ▶ „We can recognize ourselves in the story of rational self-interest”

Instead of controls, we need **NEW MODELS**
relying on engagement, communication, identity, reputation and reciprocity

[Matthias Trier: Sociality of Online Market Interaction: Challenges and Implications. EcoCom, 08/11/2013, Berlin, Germany]

If money is the currency of the money market,
what is the „currency“ of the „social market“?

▶ **TRUST**

[Matthias Trier: Sociality of Online Market Interaction: Challenges and Implications. EcoCom, 08/11/2013, Berlin, Germany]

3

ICT as an Instrument for more Sustainability?

- ▶ Why it is not that easy

Welche Nachhaltigkeitseffekte können mit der Informations- und Kommunikationstechnik erzeugt werden?

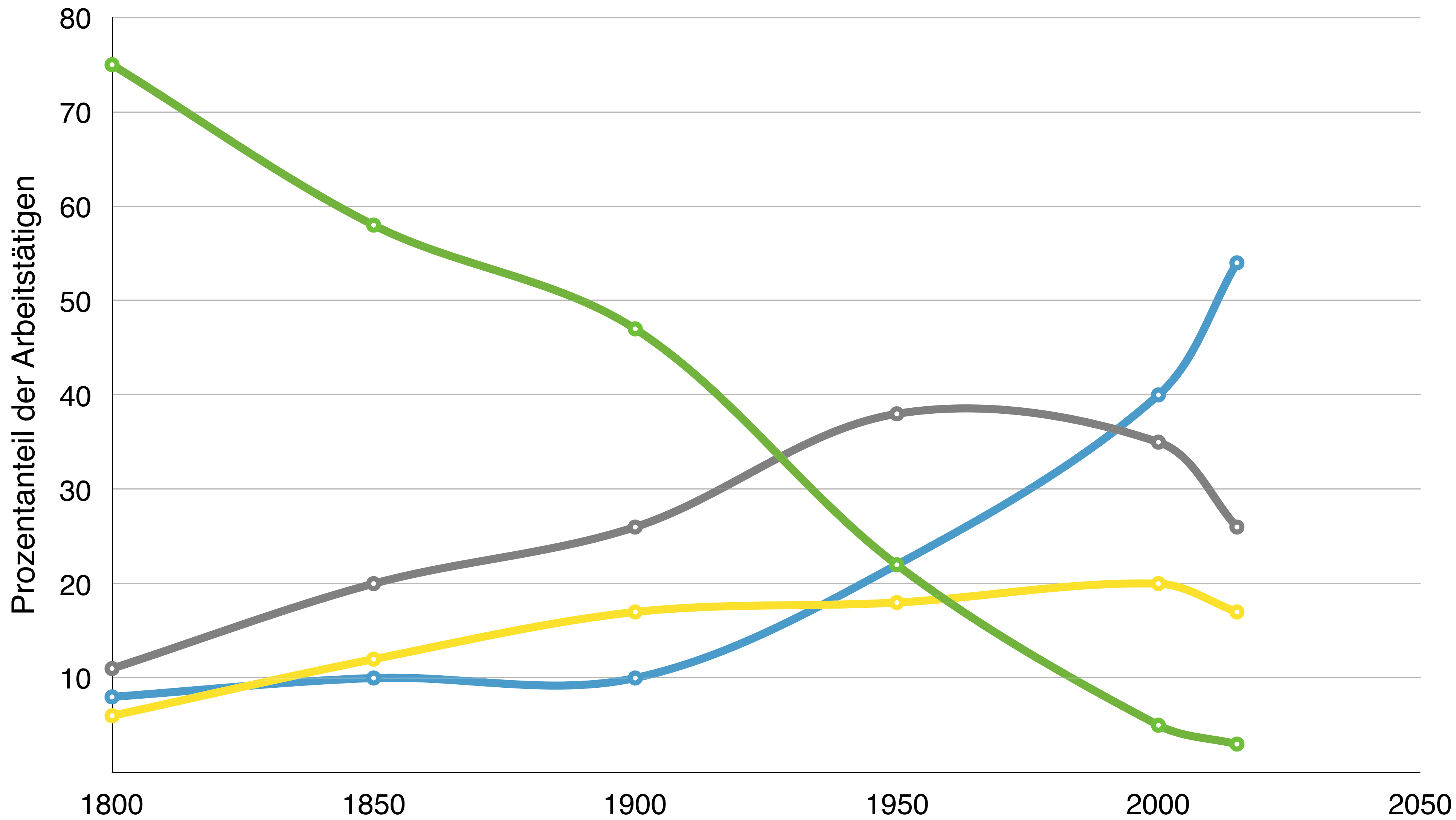
Seit Beginn der industriellen Revolution wächst der weltweite CO₂-Austoß und überschreitet 32.000 Mio. Tonnen im Jahr 2012

**Weltweite CO₂ Emissionen
(in Mio. Tonnen)**



[Arnold Picot, Stefan Hopf: ICT as an Instrument for More Sustainability: Why It Is Not That Simple. In Herzog, M.A.: Economics of Communication. ICT Driven Fairness and Sustainability for Global and Local Marketplaces, GITO 2015] GeSI (2012)

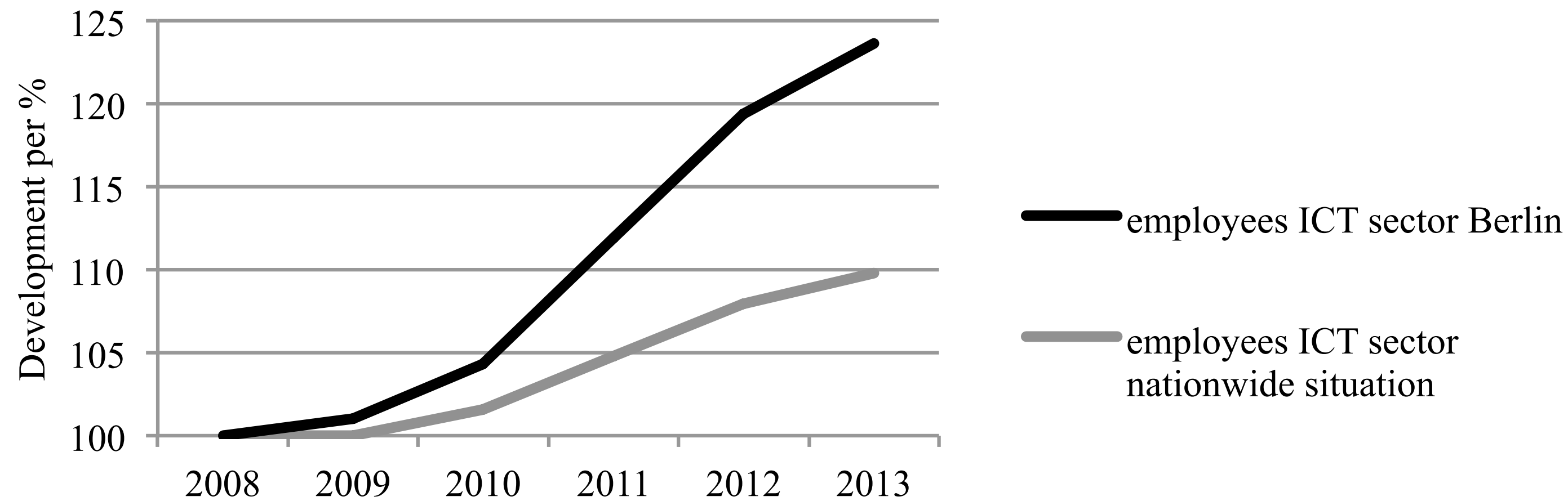
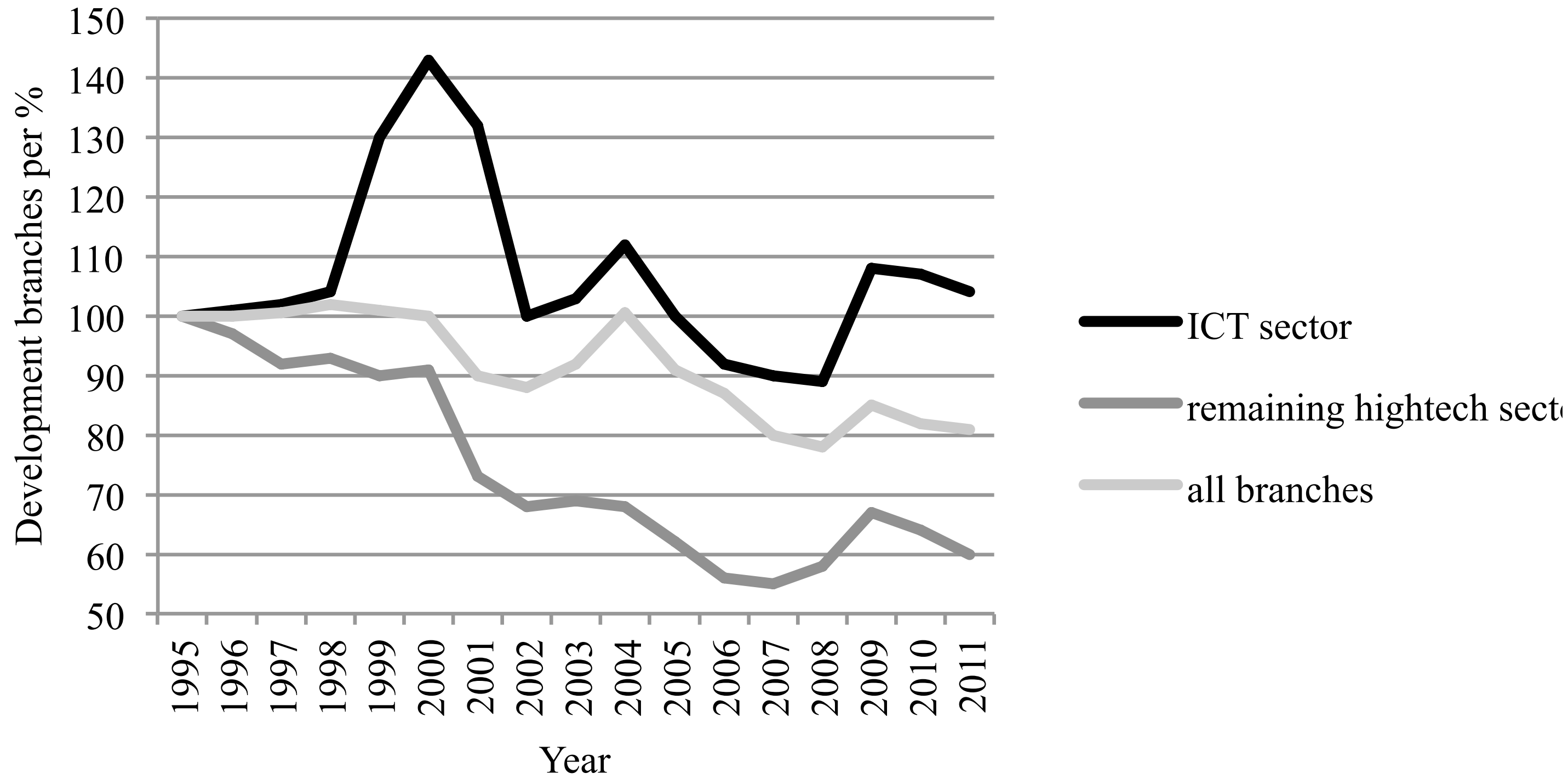
Langfristiger Strukturwandel nach Gries



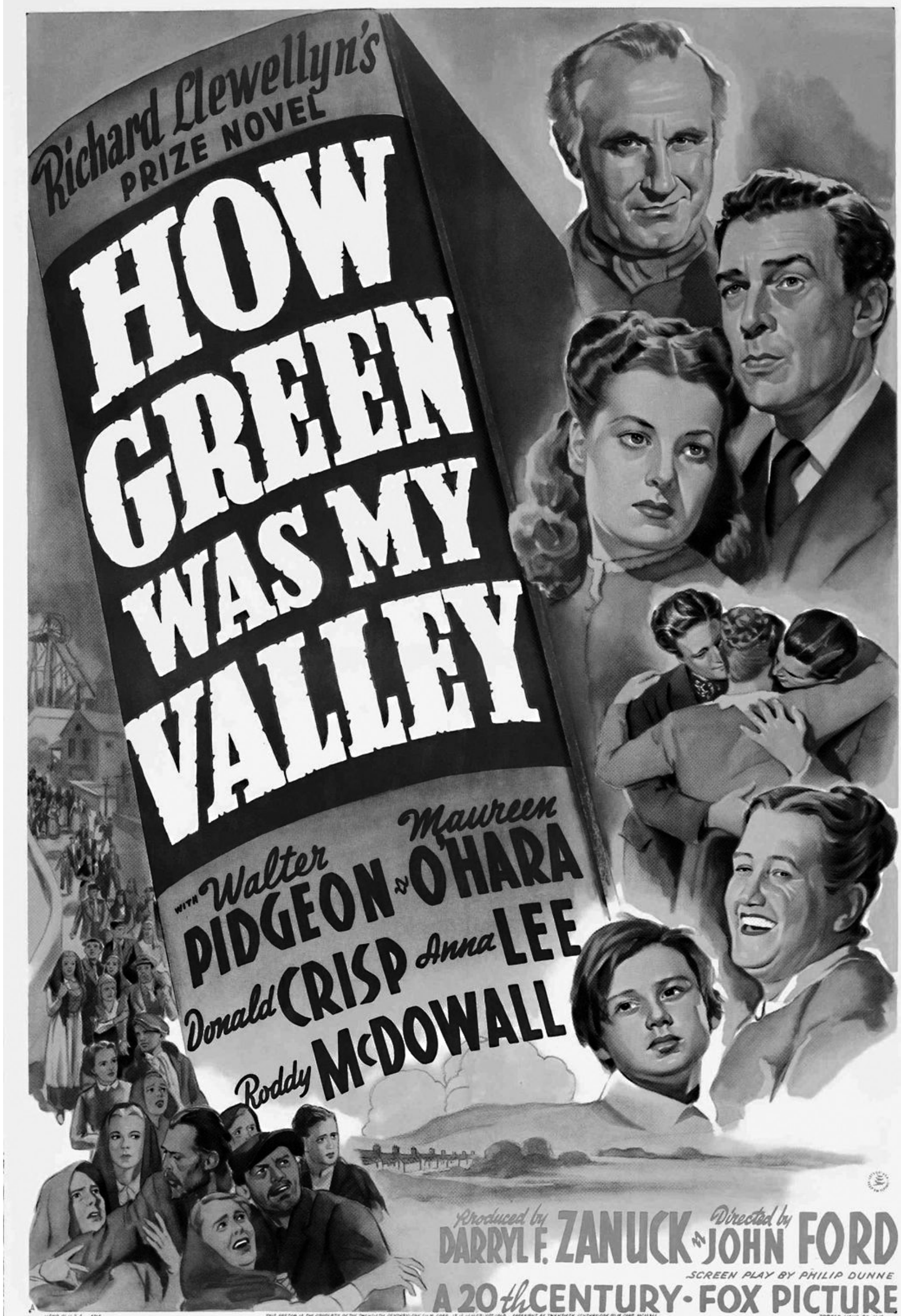
- Landwirtschaft
- Produktion
- Klassische Dienstleistung
- Informationsdienstleistung

[Gries, W.: Dienstleistungen für das 21. Jh – Chancen nutzen, Risiken bewältigen. In: Bullinger, H-J. (Hrsg.): Dienstleistungen der Zukunft – Märkte, Unternehmen und Infrastrukturen im Wandel, S. 3-23, Gabler 1995]
Ergänzt durch akkumulierte Daten des statistischen Bundesamtes vom September 2000 und September 2015

Structure Change in Berlin area vs. Germany nationwide



[Thomas Probian, Julia von Mandel, Michael Wiegmann ICT Sector Berlin - Paradise for Company Formations and Job Creation Machine at once. In Herzog, M.A.: Economics of Communication. ICT Driven Fairness and Sustainability for Global and Local Marketplaces, GITO 2015]



[Florian Brody: How Green is the Valley? ICT Markets Are Going Green: The Other Story from Silicon Valley. In Herzog, M.A.: Economics of Communication. ICT Driven Fairness and Sustainability for Global and Local Marketplaces, GITO 2015]



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ICT & Sustainability

Michael A. Herzog

ICT as an Instrument for more Sustainability?

87

Wertewandel



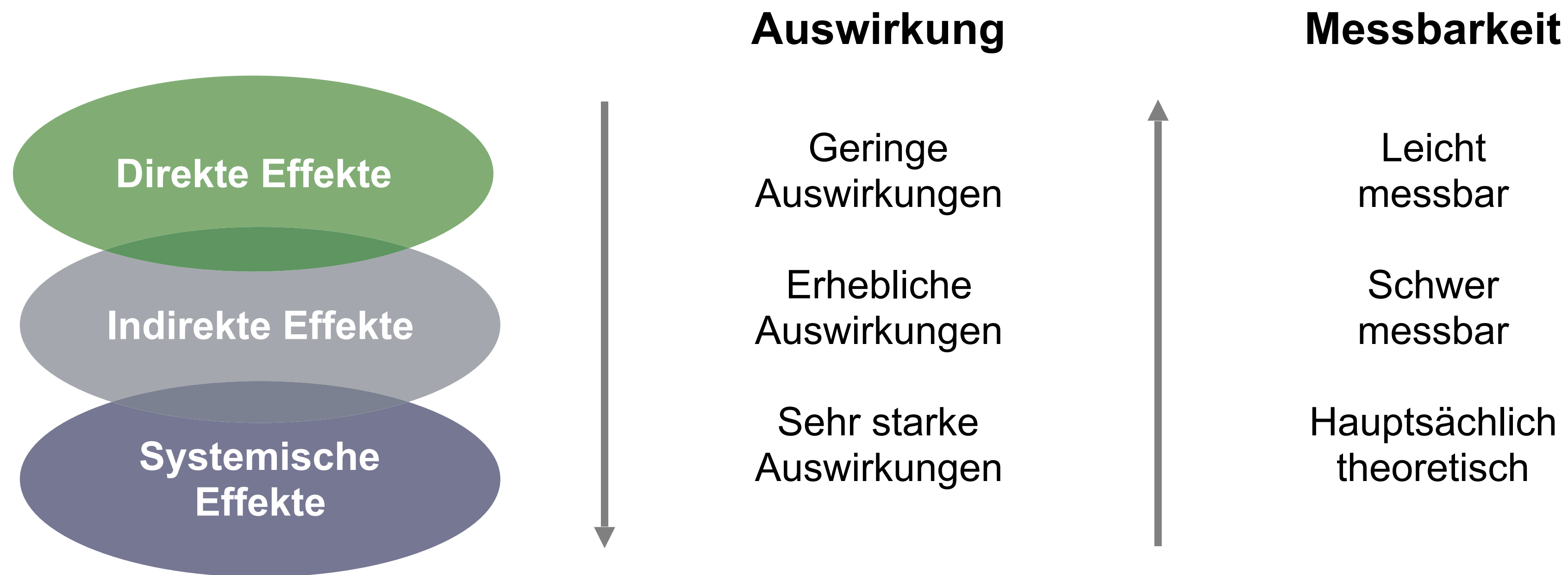
(nach: Fritjof Capra, Wendezeit, München 1991, S. XI-XII)

[Michael Rost 2015
Folien Ringvorlesung:
Mit Wachstum in die
Katastrophe, S. 98]

Welche Nachhaltigkeitseffekte können mit der Informations- und Kommunikationstechnik erzeugt werden?

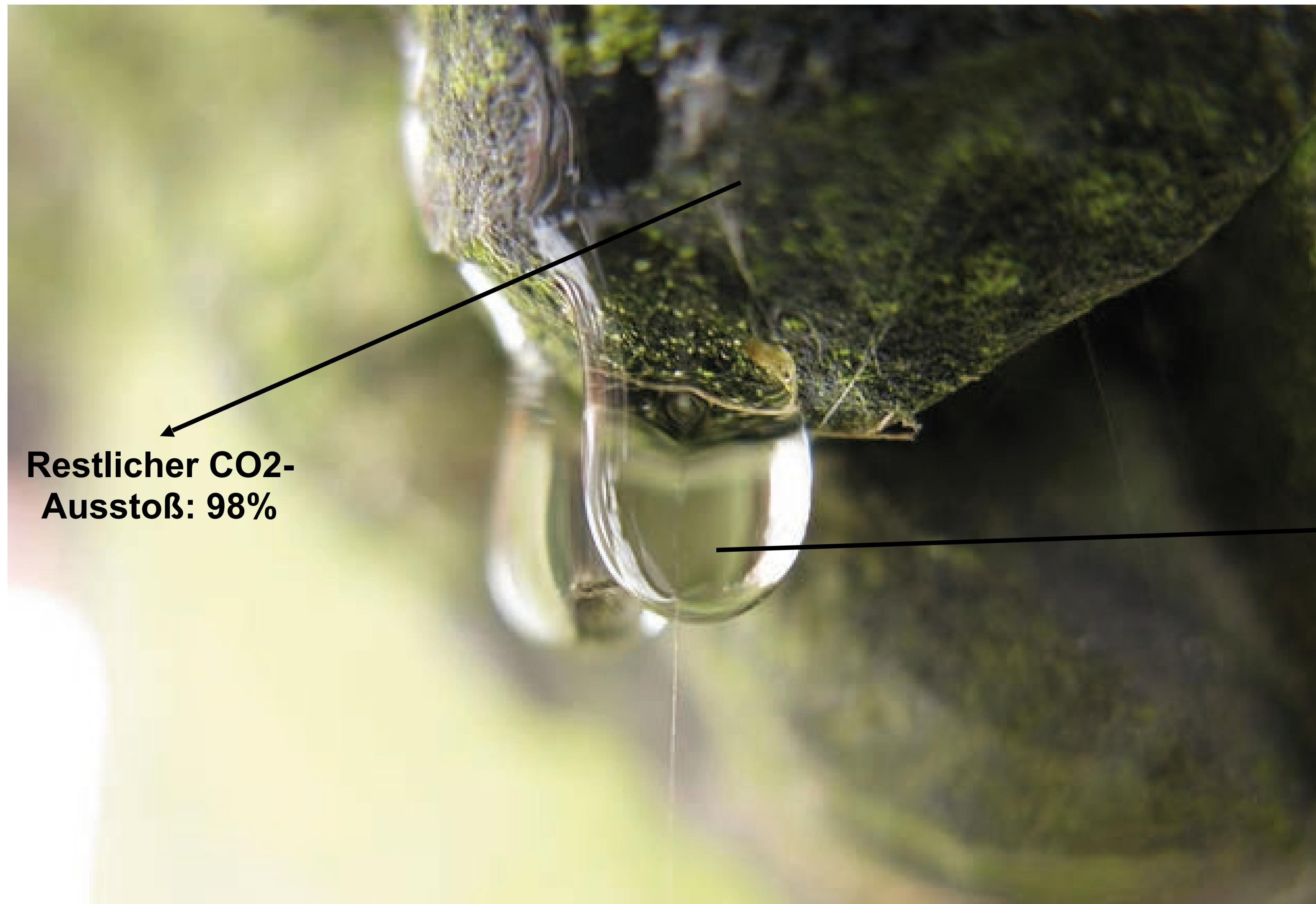
<http://pingo.upb.de/8225>

Effekte von Informations- und Kommunikationstechnologien können anhand ihrer Auswirkungen und Messbarkeit strukturiert werden



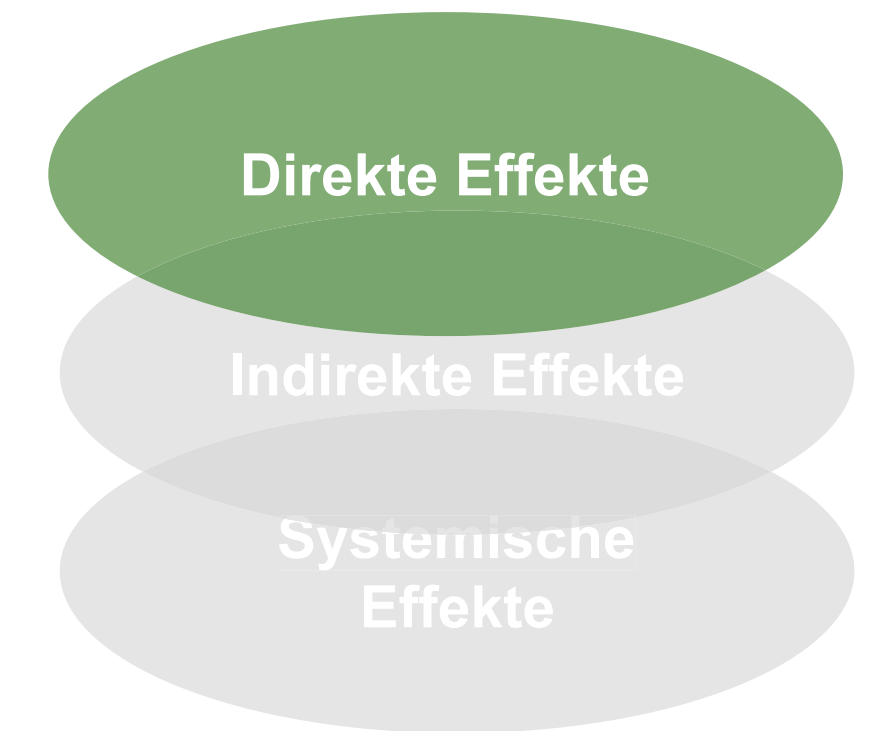
[Arnold Picot, Stefan Hopf: ICT as an Instrument for More Sustainability: Why It Is Not That Simple. In Herzog, M.A.: Economics of Communication. ICT Driven Fairness and Sustainability for Global and Local Marketplaces, GITO 2015]; Etno/WWF (2007)

Der Anteil von Informations- und Kommunikationstechnologien am gesamten CO₂-Ausstoß beträgt ca. 2%



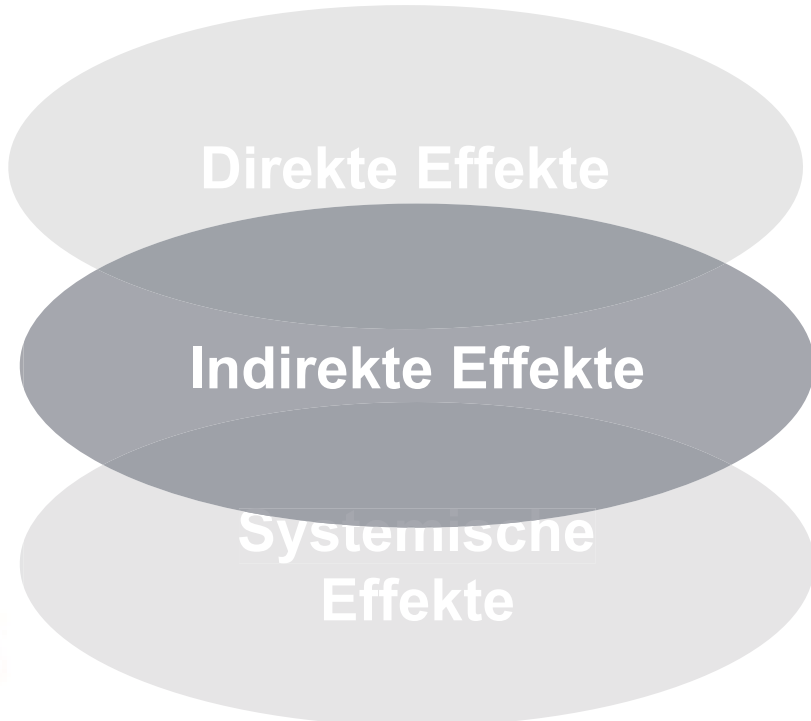
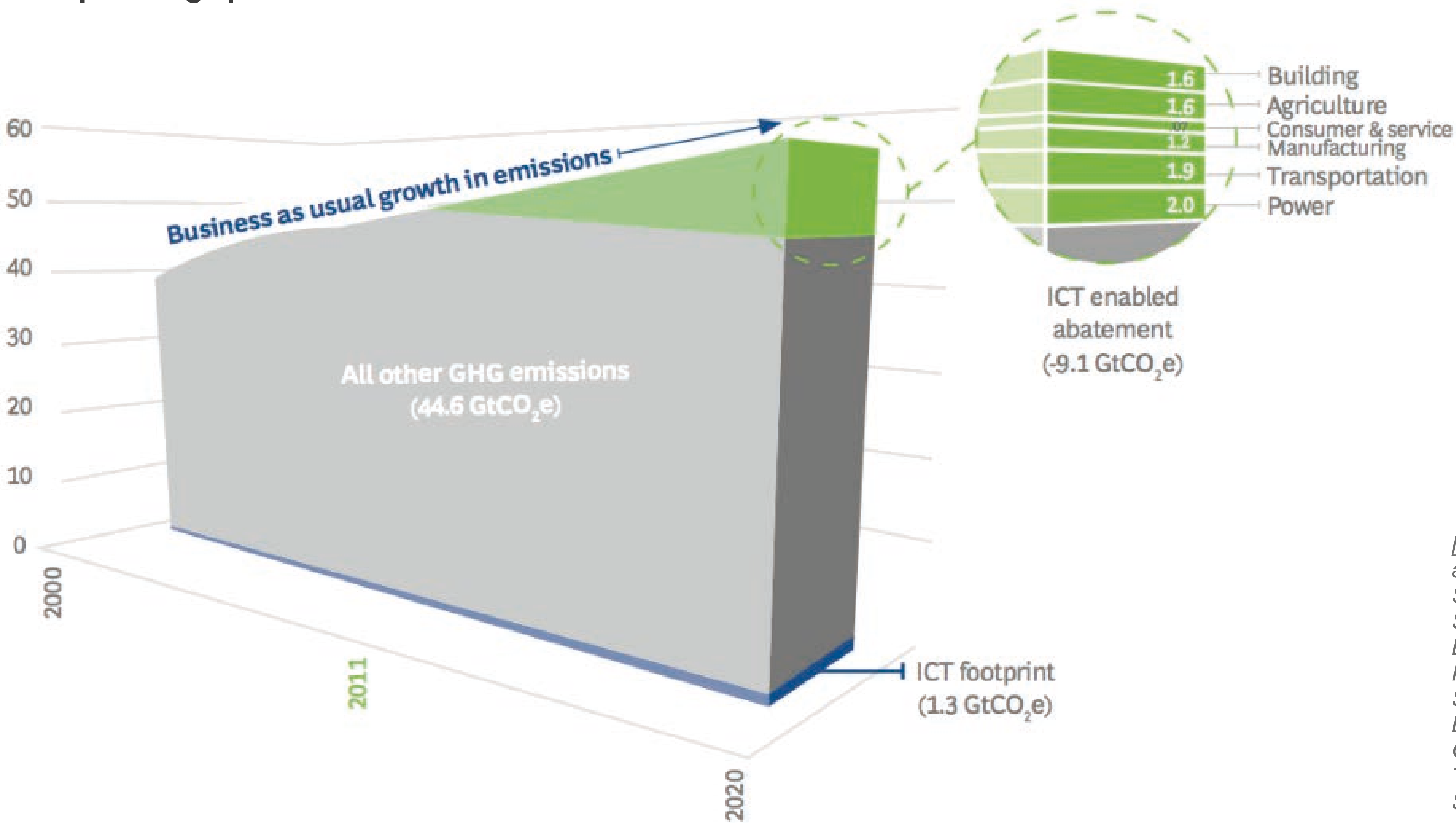
**Restlicher CO₂-
Ausstoß: 98%**

**CO₂-
Ausstoß
IKT: 2%**



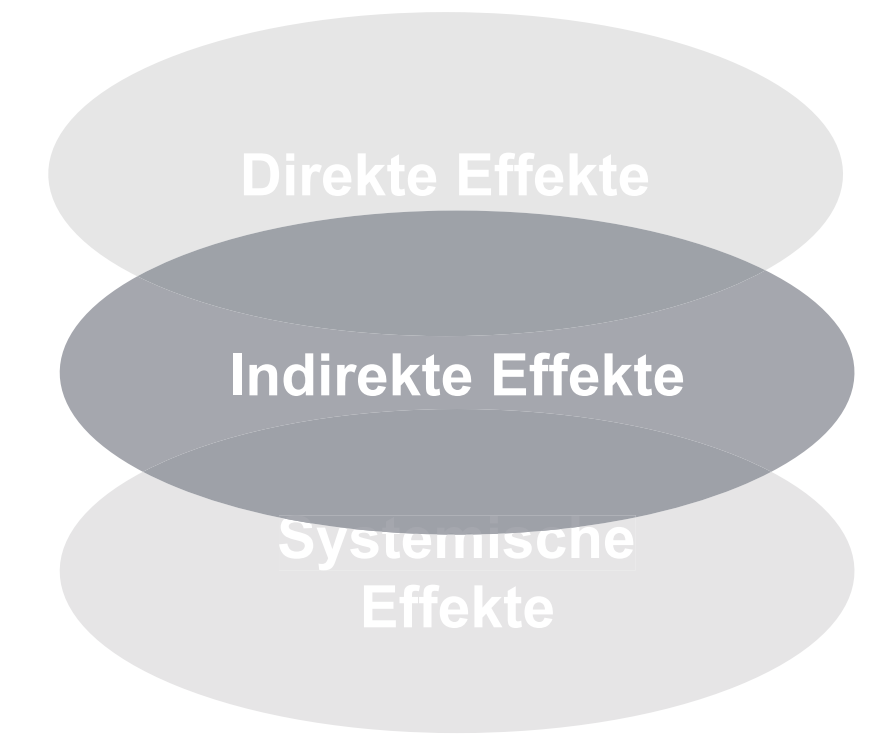
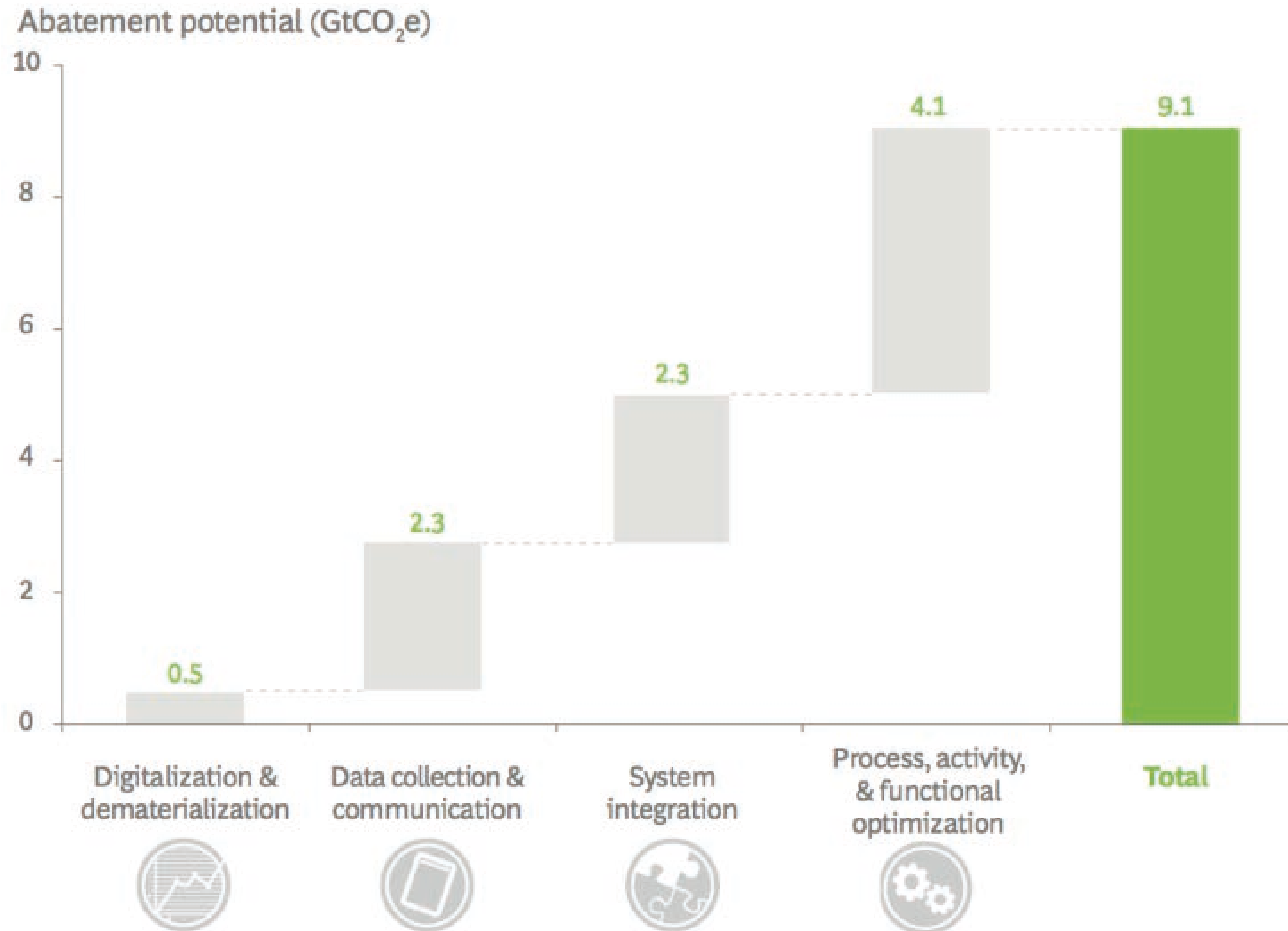
[Arnold Picot, Stefan Hopf: ICT as an Instrument for More Sustainability: Why It Is Not That Simple. In Herzog, M.A.: Economics of Communication. ICT Driven Fairness and Sustainability for Global and Local Marketplaces, GITO 2015]; GeSI (2012)

Experten erwarten durch IKT insgesamt ein erhebliches CO₂-Einsparungspotential von ca. 16,5% (9,1 GtCO₂) in anderen Sektoren



[Arnold Picot, Stefan Hopf: *ICT as an Instrument for More Sustainability: Why It Is Not That Simple*. In Herzog, M.A.: *Economics of Communication. ICT Driven Fairness and Sustainability for Global and Local Marketplaces*, GITO 2015]; *GeSI SMARTer2020: The Role of ICT in Driving a Sustainable Future*, 2012, online

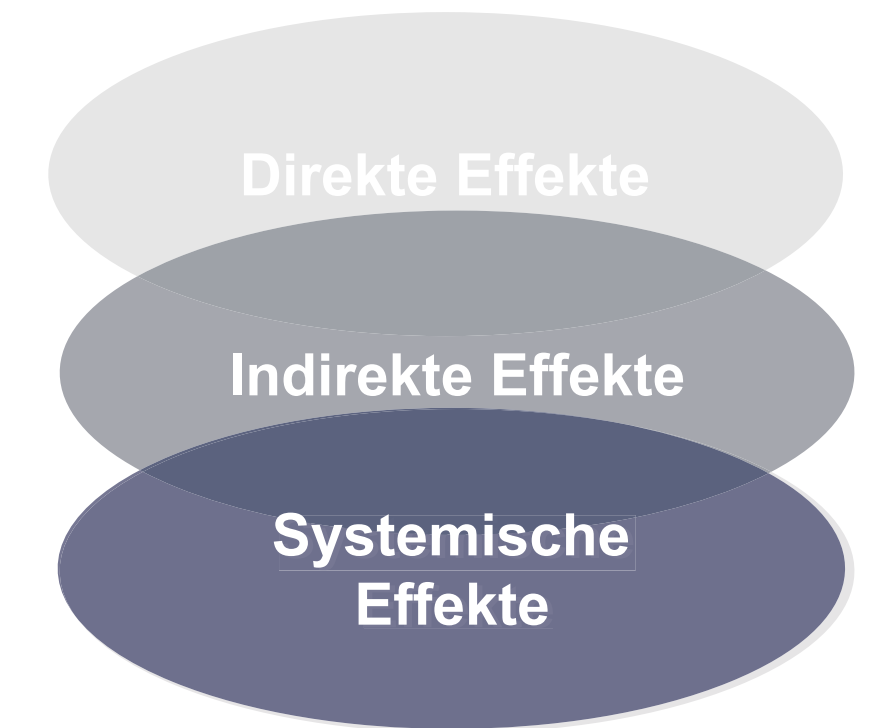
Der CO₂-Austoß von IKT kann hauptsächlich durch Virtualisierung wie z. B. Cloud Computing, aber auch durch Effizienzzuwächse verringert werden



[Arnold Picot, Stefan Hopf: *ICT as an Instrument for More Sustainability: Why It Is Not That Simple*. In Herzog, M.A.: *Economics of Communication. ICT Driven Fairness and Sustainability for Global and Local Marketplaces*, GITO 2015]; GeSI SMARTer2020: *The Role of ICT in Driving a Sustainable Future*, 2012, online

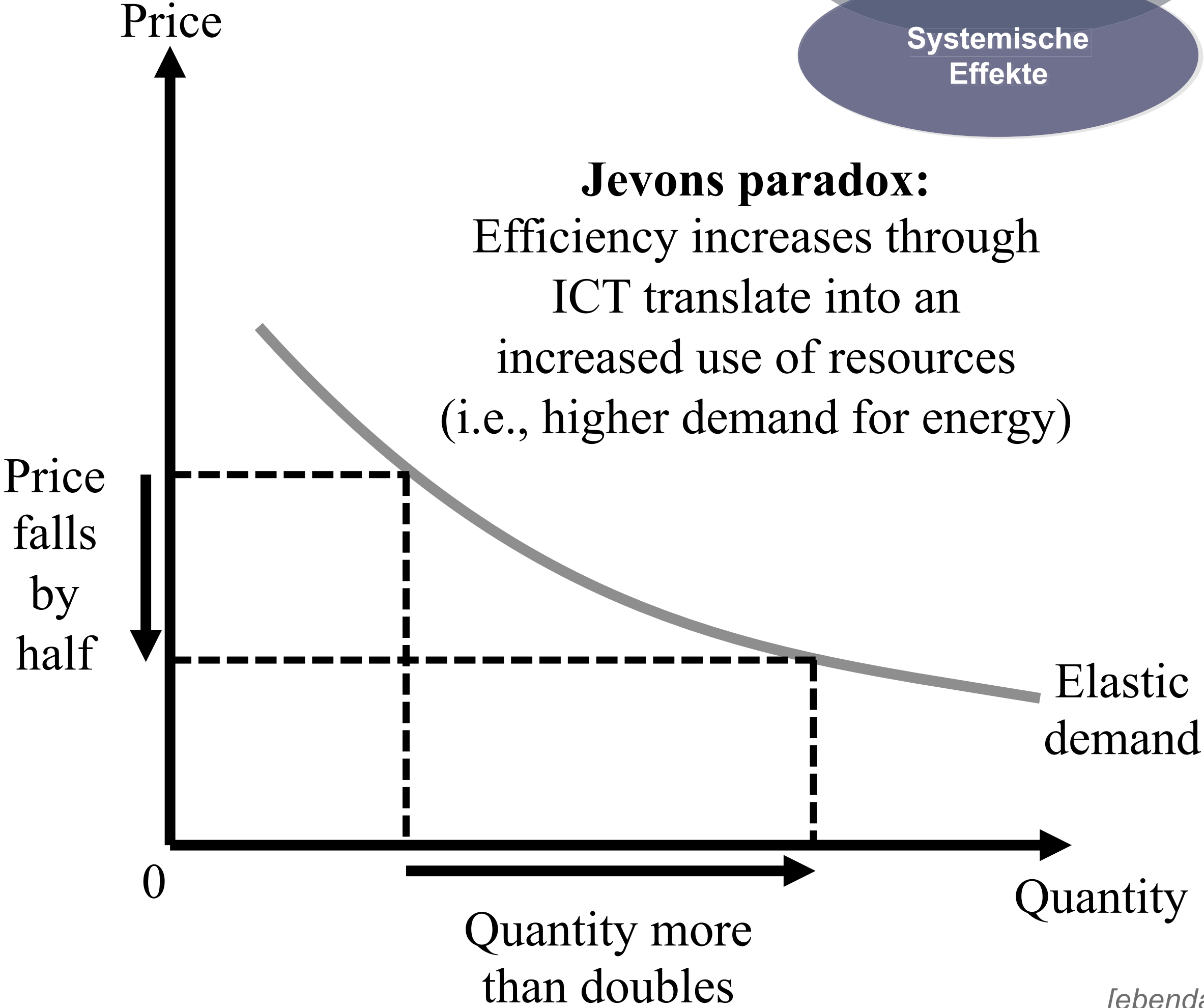
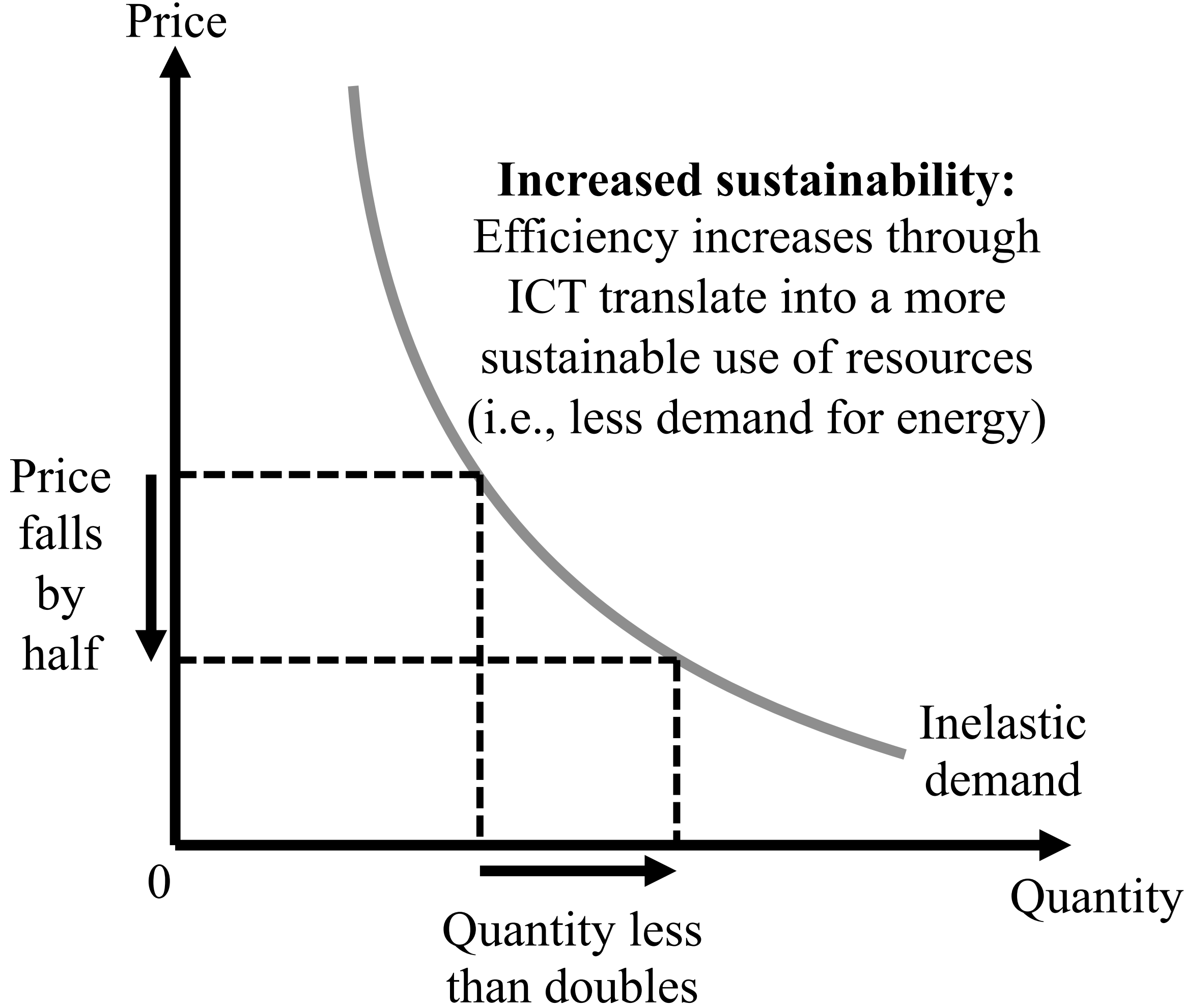
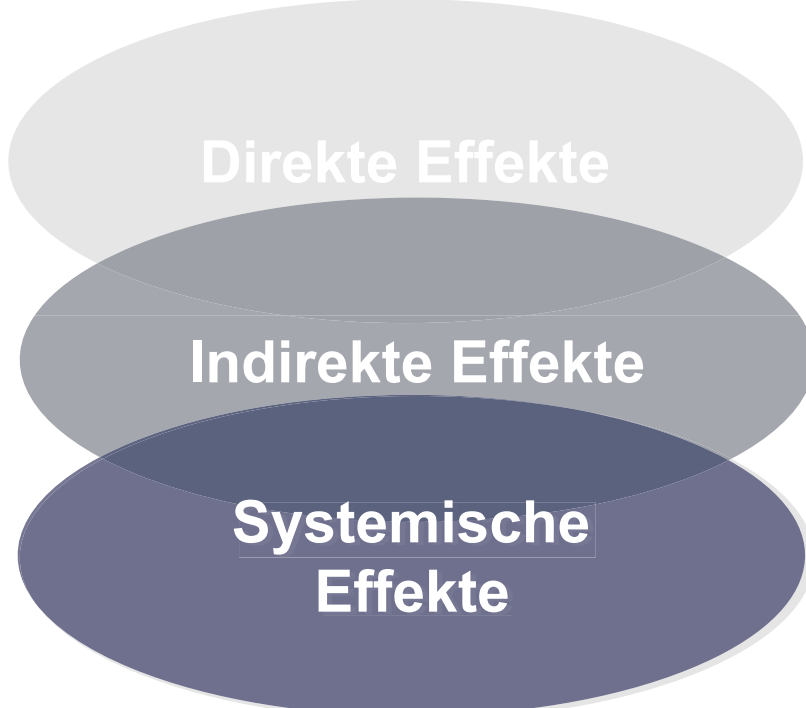
IKT als Instrument für mehr Nachhaltigkeit: Warum das nicht so einfach ist

- ▶ Indirekte und systemische Effekte erschweren die Bestimmung des Nettoeffekts von Informations- und Kommunikationstechnologien
 - Indirekte Effekte: Erfüllung existierender Bedürfnisse durch IKT-Fortschritt
 - Systemische Effekte: Entstehung neuer Gewohnheiten, sozialer Strukturen und Konsumverhalten durch IKT-Fortschritt
- ▶ Jevons' Paradoxon: Technologischer Fortschritt, der eine effizientere Ressourcenverwendung ermöglicht, kann letztlich zu einer erhöhten Nutzung (statt Reduktion) dieser Ressourcen führen (Rebound-Effekt)
- ▶ Eine ganzheitliche Betrachtung von Nachhaltigkeit umfasst neben umweltpolitischen Zielen auch soziale und ökonomische Aspekte



*[Arnold Picot, Stefan Hopf:
ICT as an Instrument for More
Sustainability: Why It Is Not That
Simple.
In Herzog, M.A.:
Economics of Communication.
ICT Driven Fairness and
Sustainability for Global and
Local Marketplaces, GITO 2015];*

Direct rebound effect and sustainability



[ebenda]

Beispiel Energie

Chancen

- Integration dezentraler fluktuierender erneuerbarer Energiequellen
- Fernwartung und Management der Netze durch Sensor- und Controllernetzwerke
- Entstehung virtueller Kraftwerke
- Flexibles Lastmanagement

Herausforderungen

- Zunehmende IKT-Durchdringung des alltäglichen Lebens (z. B. durch Softwaresysteme, Kommunikation, Data Center, Vernetzung, Sensoren) erzeugt neuen Energiebedarf
- Steigender Energiebedarf kann (noch) nicht ausschließlich durch erneuerbare Energien gedeckt werden

IKT verbessert u.a. die Energie-Erzeugung, -Übertragung und -Verteilung, aber verändert auch das Nutzungsverhalten und die Energienachfrage der Verbraucher

[Arnold Picot, Stefan Hopf: ICT as an Instrument for More Sustainability: Why It Is Not That Simple. In Herzog, M.A.: Economics of Communication. ICT Driven Fairness and Sustainability for Global and Local Marketplaces, GITO 2015]

Beispiel Transport

Chancen

- Heim- und standortunabhängige Arbeit durch Videokonferenzlösungen und Telecommuting
- Optimierung von Logistiknetzwerken
- Intelligentes Verkehrsmanagement
- Echtzeit Routenführung
- Car-Sharing und intermodale Transport-Angebote

Herausforderungen

- Weltweite Vernetzung (privat und geschäftlich) führt zu steigendem Reise- und Transportbedarf
- Information organisiert und fördert Transport
- Stark wachsende Weltbevölkerung und steigende Lebensstandards in Entwicklungsländern erhöhen Netto-Mobilitätsnachfrage

IKT ermöglicht Effizienzvorteile und substituiert teilweise physischen Transport, fördert aber durch weltweite leistungsfähige Vernetzung neue Mobilitäts- und Transportnachfrage

[Arnold Picot, Stefan Hopf: ICT as an Instrument for More Sustainability: Why It Is Not That Simple. In Herzog, M.A.: Economics of Communication. ICT Driven Fairness and Sustainability for Global and Local Marketplaces, GITO 2015]

Beispiel Urbanisierung

Chancen

- 50% der Weltbevölkerung lebt in Städten – Tendenz steigend (bis 2030 knapp 5 Milliarden Menschen)
- Volkswirtschaftliches Potenzial – Städte leisten einen überproportional hohen BIP-Beitrag
- Hohes IKT-Unterstützungspotential v.a. im den Bereichen: Energie, Wasser, Transport & Logistik und Sicherheit

Herausforderungen

- Überproportional hoher Energie- und (66%) Trinkwasserverbrauch (60%), sowie CO₂-Ausstoß (70%) in Städten
- Erneuerung und Modernisierung existierender Infrastrukturen
- Schaffung intelligenter Netze zur effizienten Steuerung und Koordination städtischer Infrastrukturen

Ökologische Ineffizienzen durch zielgerichtete IKT-Unterstützung („Smart Cities“) abbauen und die Attraktivität der Städte durch Attraktivität des Landes („Smart Country“) kompensieren.

[Arnold Picot, Stefan Hopf: ICT as an Instrument for More Sustainability: Why It Is Not That Simple. In Herzog, M.A.: Economics of Communication. ICT Driven Fairness and Sustainability for Global and Local Marketplaces, GITO 2015]

Beispiel Medien

Chancen

- Intelligente Technologien ermöglichen eine selbstbestimmte und personalisierte Mediennutzung
- IKT-Unterstützung fördert Transparenz, Echtzeitberichterstattung und interaktiven Informationsaustausch
- Digitale Medien lösen zunehmend Druckprodukte ab

Herausforderungen

- Veränderter Medienkonsum und neue Distributionskanäle stellen etablierte Finanzierungsmodelle auf den Prüfstand
- Digitaler Zugriff und zunehmende Finanzierungsprobleme können zu einer Verarmung des Angebots hoher qualitätsvoller Medien führen (z.B. Qualitätsjournalismus in Gefahr)

Individuelle und flexible Mediennutzung mit breitem Angebot, aber Gefahr der Verschlechterung von inhaltlicher Qualität und Finanzierungsprobleme (→ erhöhter Bedarf von Qualitätsmedien als öffentliche Güter?)

[Arnold Picot, Stefan Hopf: ICT as an Instrument for More Sustainability: Why It Is Not That Simple. In Herzog, M.A.: Economics of Communication. ICT Driven Fairness and Sustainability for Global and Local Marketplaces, GITO 2015]



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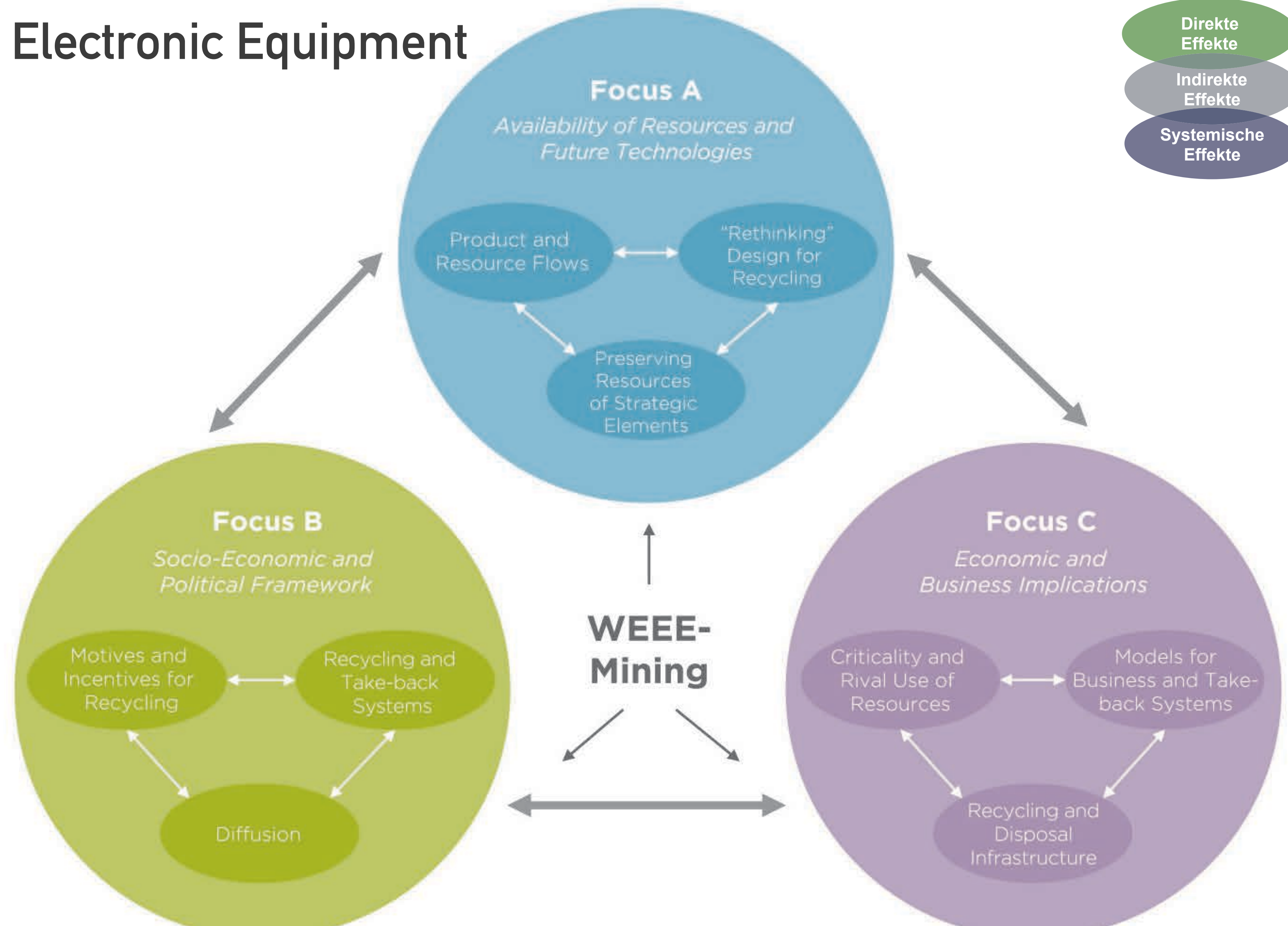
Michael A. Herzog

ICT as an Instrument for more Sustainability?

100

Waste Electrical and Electronic Equipment (WEEE)

- Direkte Effekte
- Indirekte Effekte
- Systemische Effekte

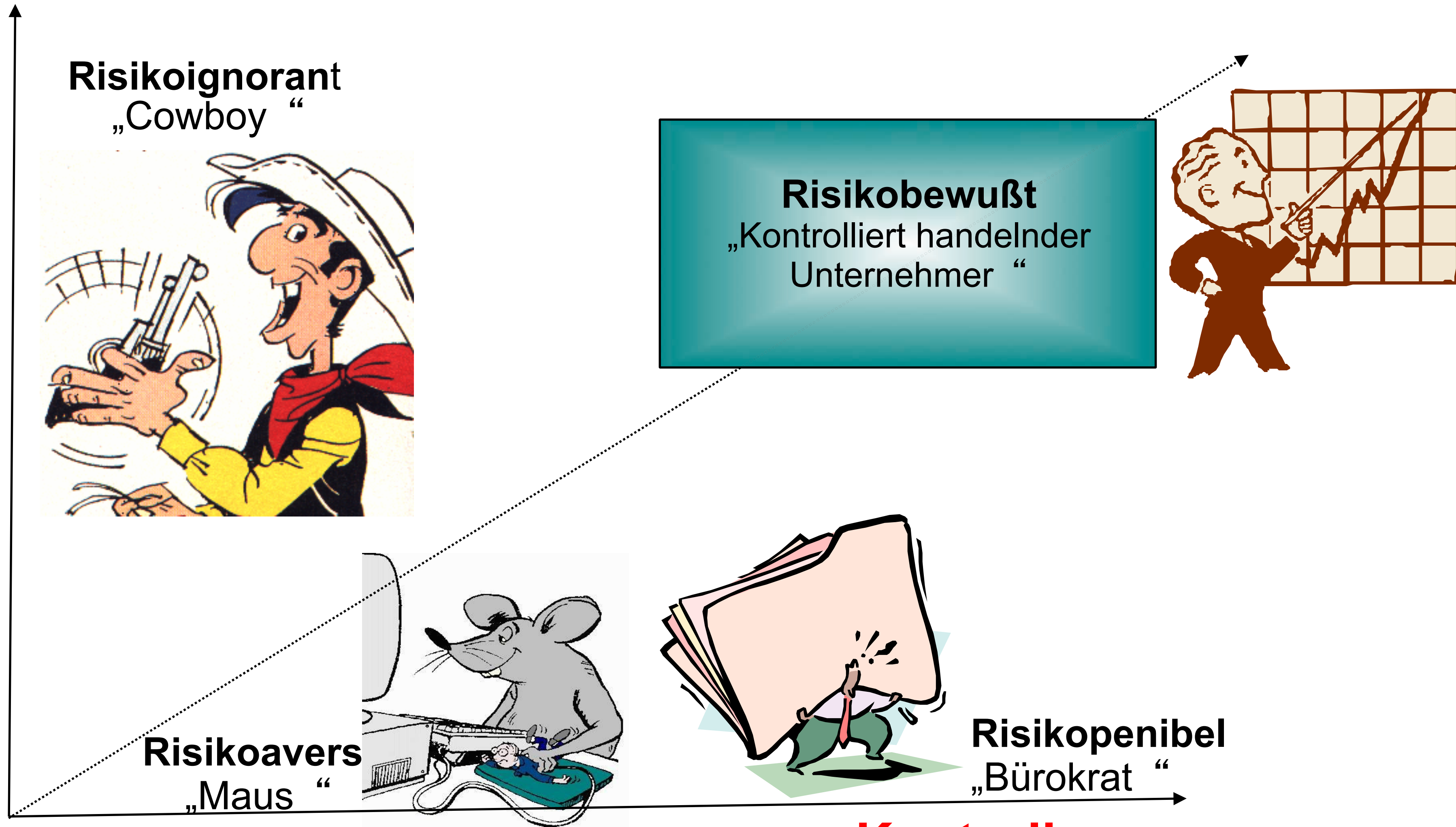


[Andreas Bühn, Silke Niehoff, Britta Bookhagen and Mario Tobias: WEEE-Mining: A Research and Stakeholder Network on Material Flows in the Anthropocene
 In: Herzog, M.A.: Economics of Communication. ICT Driven Fairness and Sustainability for Global and Local Marketplaces, GITO 2015]

Risikomanagement

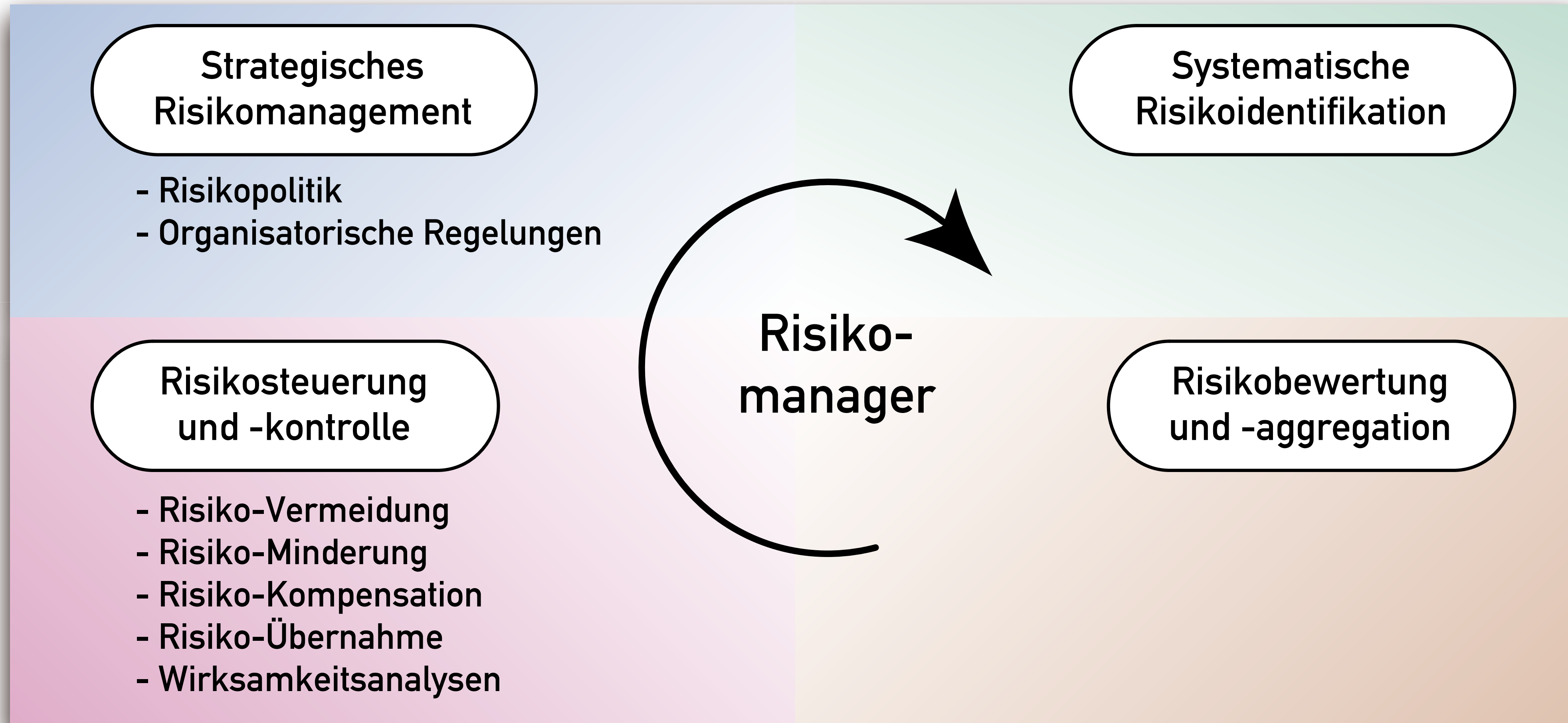


Risiko



M. Hoffmann: Master Risikomanagement, Präsentation 2011, Hochschule Magdeburg-Stendal

Kontrolle



In Anlehnung an RM-Kreislauf, M. Hoffmann: Master Risikomanagement, Präsentation 2011, Hochschule Magdeburg-Stendal

Digital Archiving

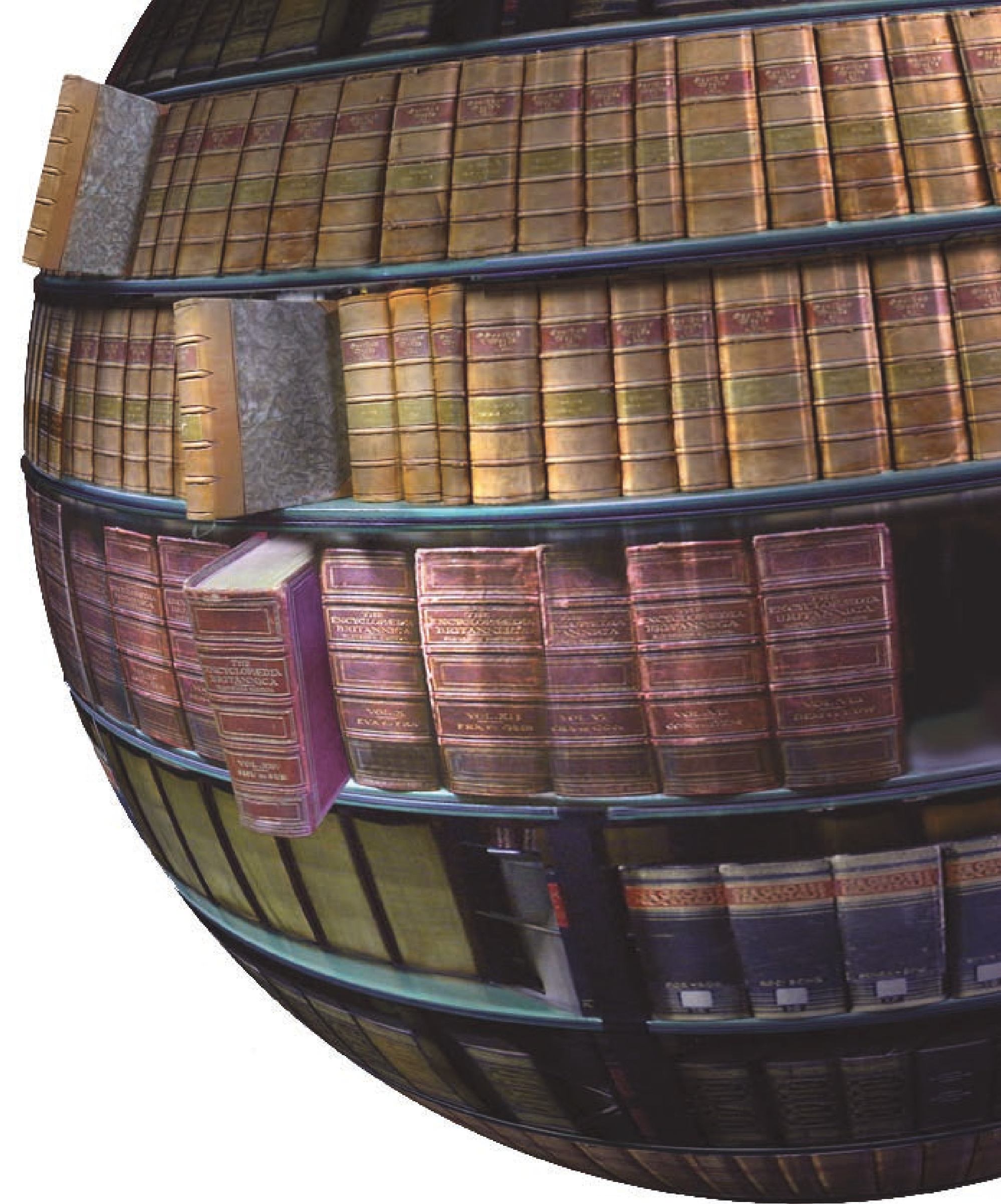
► Durchschnittliche Lebensdauer von Webseiten

44 Tage
(Scientific American 1997)

75 Tage
(IEEE Computer 2001)

100 Tage
(Washington Post 2003)

*[Martin Klein: A Closer Look at
Web Archives and Accessibility –
Essential Ingredients for
Sustainable Digital Data
Preservation EcoCom,
08/11/2013, Berlin, Germany]*



Link Rot

W Berlin - Wikipedia, the free encyclopedia

en.wikipedia.org/wiki/Berlin

WIKIPEDIA
The Free Encyclopedia

Main page
Contents
Featured content
Current events
Random article
Donate to Wikipedia

Interaction
Help
About Wikipedia
Community portal
Recent changes
Contact page

Tools

Print/export

Languages
Acèh
Адыгэбзэ
★ Afrikaans
Akan
Alemannisch

Article

Be

From

T

Berlin
[ˈbɛrlɪn] (listen) (help·info) is the capital and largest city of Germany, with a population of 3.3 million and is one of the seven largest cities in the European Union. The Spree River flows through the city's Metropolitan Area, and the city is a temperate city's riverside. First mentioned in 1244, the city was the capital of the German Empire (1871–1918) and the Weimar Republic (1919–1933).

www.berlin.de/imperia/md/content/sen-wirtschaft/konjunkturdaten/a_03.pdf?start&ts...

404 Not found - Datei existiert nicht mehr!

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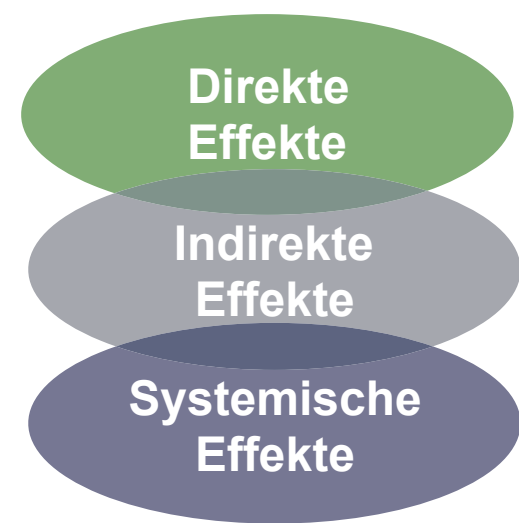
13.

14.

15. ^ Davies, Catriona (10 April 2010). "Revealed: Cities that rule the world – and those on the rise" [↗](#). CNN. Retrieved 11 April 2010.

16. ^ Sifton, Sam (31 December 1969). "Berlin, the big canvas" [↗](#). *The New York Times*. Retrieved 18 August 2008. See also: "Sites and situations of leading cities in cultural globalisations/Media" [↗](#). *GaWC Research Bulletin 146*. Retrieved 18 August 2008.

Digital Archiving – Fakten



- ▶ **Harvard Law Review**
 - 75% aller Links führen ins Nichts
- ▶ **top 1% Impact Factor Journals**
 - 10% aller Links führen ins Nichts, lediglich 15 Monate nach Publikation
- ▶ **US Supreme Court Schriften**
 - 29% aller Links resultieren in Fehler

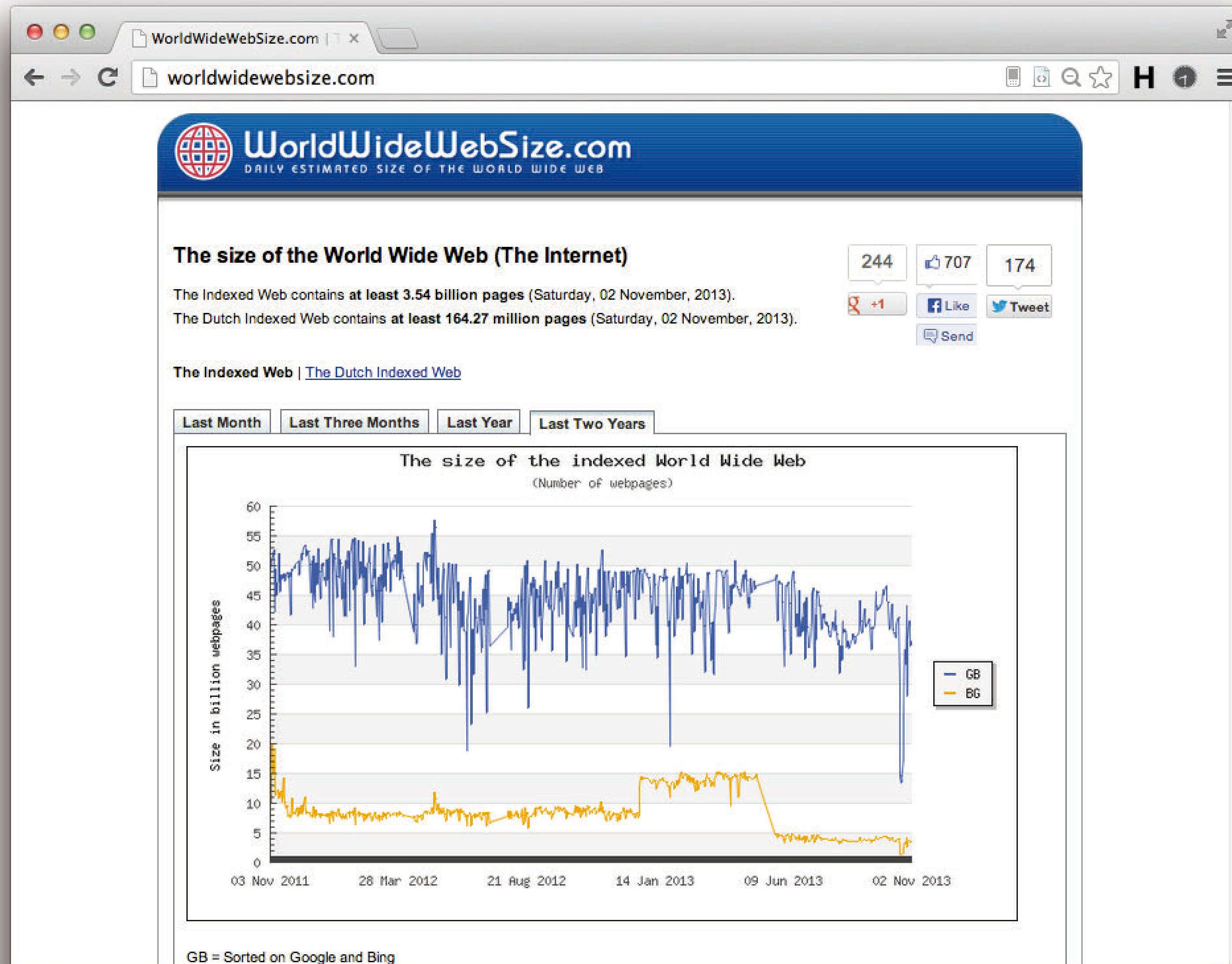
[Martin Klein: A Closer Look at Web Archives and Accessibility – Essential Ingredients for Sustainable Digital Data Preservation EcoCom, 08/11/2013, Berlin, Germany]

Ist das Web archiviert?

Direkte
Effekte

Indirekte
Effekte

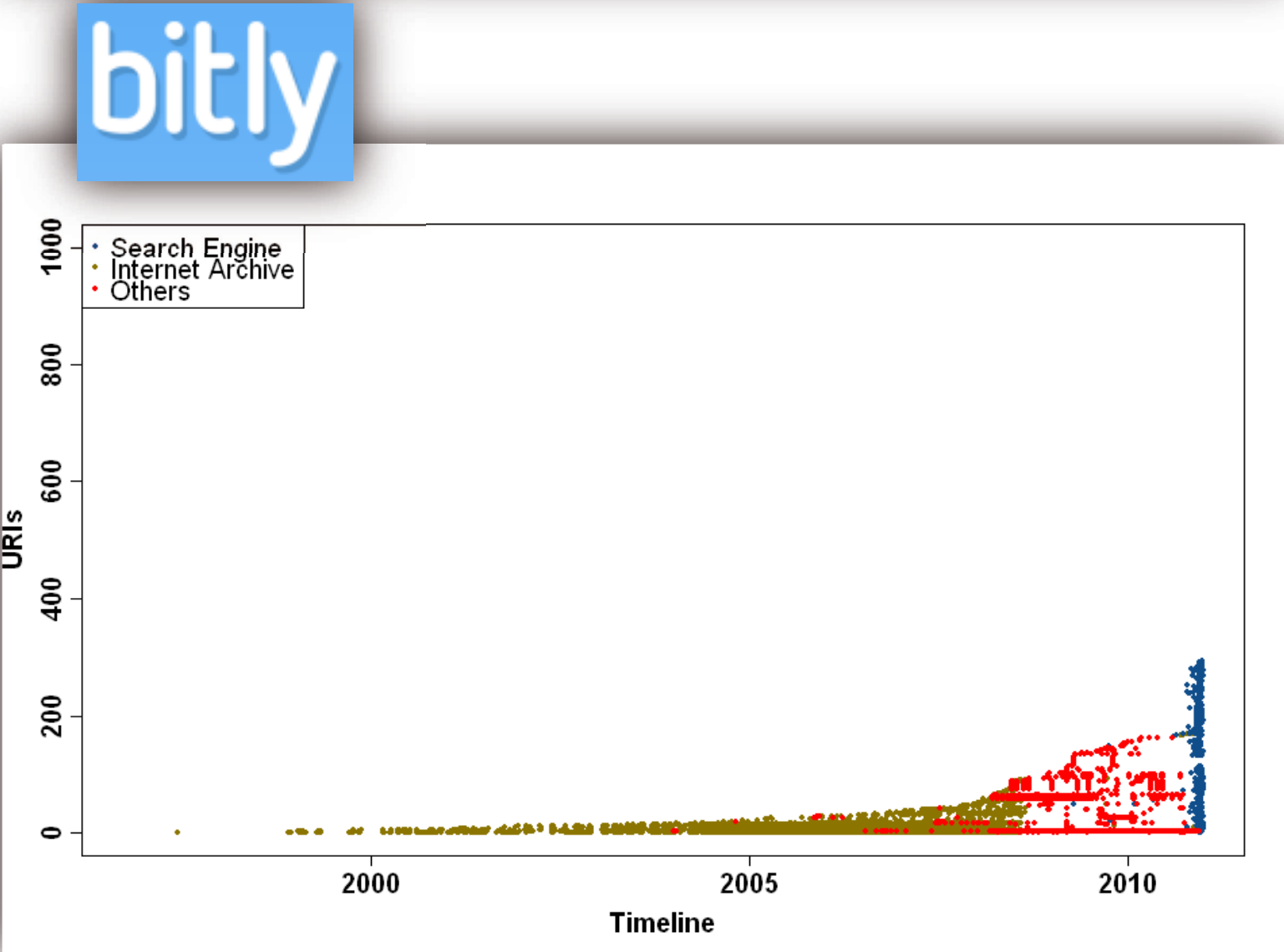
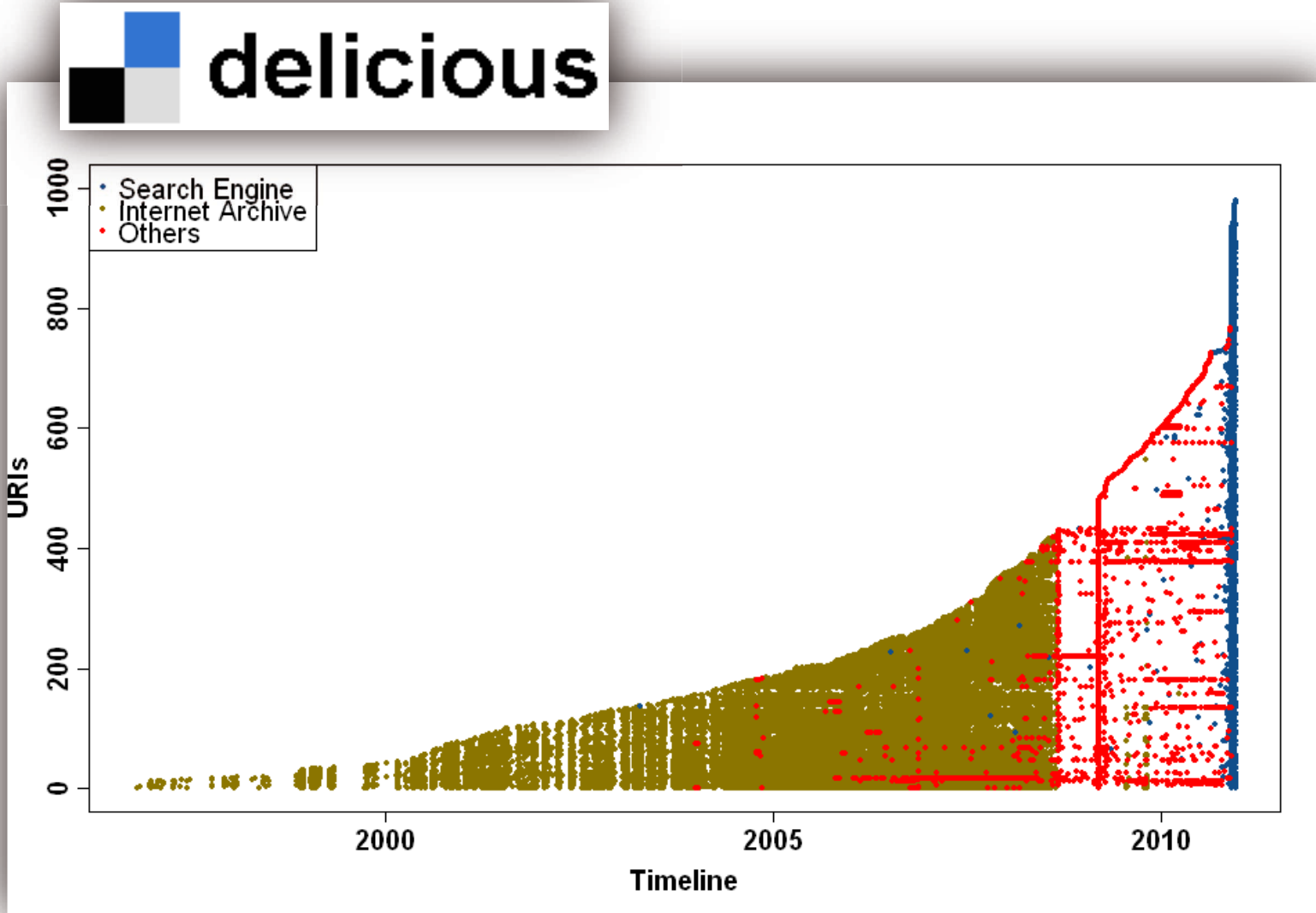
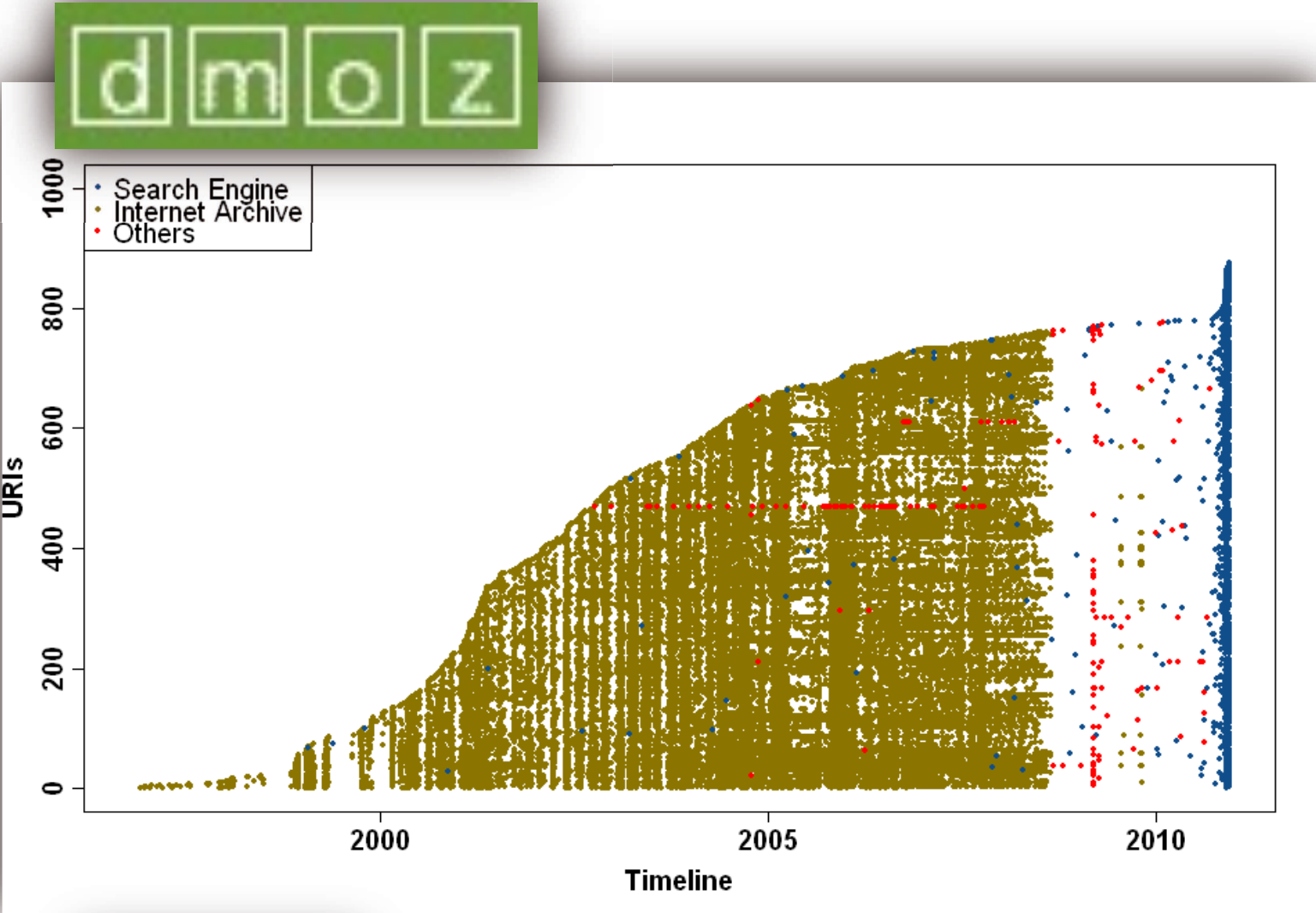
Systemische
Effekte



[Martin Klein: A Closer Look at Web Archives and Accessibility – Essential Ingredients for Sustainable Digital Data Preservation EcoCom, 08/11/2013, Berlin, Germany]

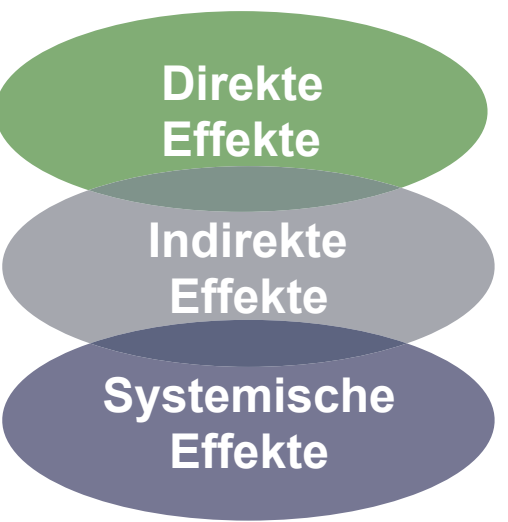
Wieviel davon ist archiviert?

- Direkte Effekte
- Indirekte Effekte
- Systemische Effekte



“How Much of the Web Is Archived?”
 Scott G. Ainsworth, Ahmed AlSum, Hany SalahEldeen, Michele C. Weigle, Michael L. Nelson
 JCDL 2011
 See also: <http://ws-dl.blogspot.com/2011/06/2011-06-23-how-much-of-web-is-archived.html>

Wieviel davon ist archiviert?



- ▶ Welches Web (DMOZ vs Bitly)?
 - 23 ... 95%
- ▶ Youtube und Facebook zusammen = 200PB pro Jahr
Web Archive ~ 12PB total
 - 0% ???
- ▶ NSA...
 - 100% ???

[Martin Klein: A Closer Look at Web Archives and Accessibility – Essential Ingredients for Sustainable Digital Data Preservation EcoCom, 08/11/2013, Berlin, Germany]

Vertrauenswürdige Archive?

Direkte Effekte

Indirekte Effekte

Systemische Effekte

Wayback Machine

Enter Web Address: All [Adv. Search](#) [Compare Archive Pages](#)

Searched for <http://www.dl00.org/> 56 Results

Note some duplicates are not shown. [See all.](#)
* denotes when site was updated.

Search Results for Jan 01, 1996 - May 03, 2005									
1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
0 pages	0 pages	0 pages	1 pages	12 pages	11 pages	5 pages	13 pages	11 pages	0 pages
			Oct 01, 1999 *	Jan 05, 2000 Mar 06, 2000 Mar 10, 2000 May 11, 2000 May 20, 2000 Jun 20, 2000 Jun 21, 2000 Aug 15, 2000 Aug 16, 2000 Oct 09, 2000 Oct 18, 2000 Dec 04, 2000	Jan 24, 2001 Feb 02, 2001 Feb 04, 2001 Feb 13, 2001 Mar 01, 2001 Apr 01, 2001 Apr 05, 2001 Apr 14, 2001 * Apr 21, 2001 Aug 31, 2001 * Nov 27, 2001 *	Jan 18, 2002 * May 31, 2002 Jun 06, 2002 Nov 25, 2002 * Nov 27, 2002	Feb 05, 2003 May 02, 2003 * Jun 10, 2003 * Jul 30, 2003 * Aug 05, 2003 Aug 08, 2003 * Sep 27, 2003 * Oct 05, 2003 * Oct 07, 2003 * Dec 13, 2003 * Dec 17, 2003 Dec 27, 2003 * Dec 28, 2003 *	Jan 01, 2004 * Jan 03, 2004 * Jan 30, 2004 * Apr 03, 2004 * Apr 11, 2004 * May 25, 2004 * Jun 08, 2004 * Jun 09, 2004 * Jun 10, 2004 * Jun 12, 2004 * Jun 16, 2004 *	

ACM DL Conference

Porn

Gambling

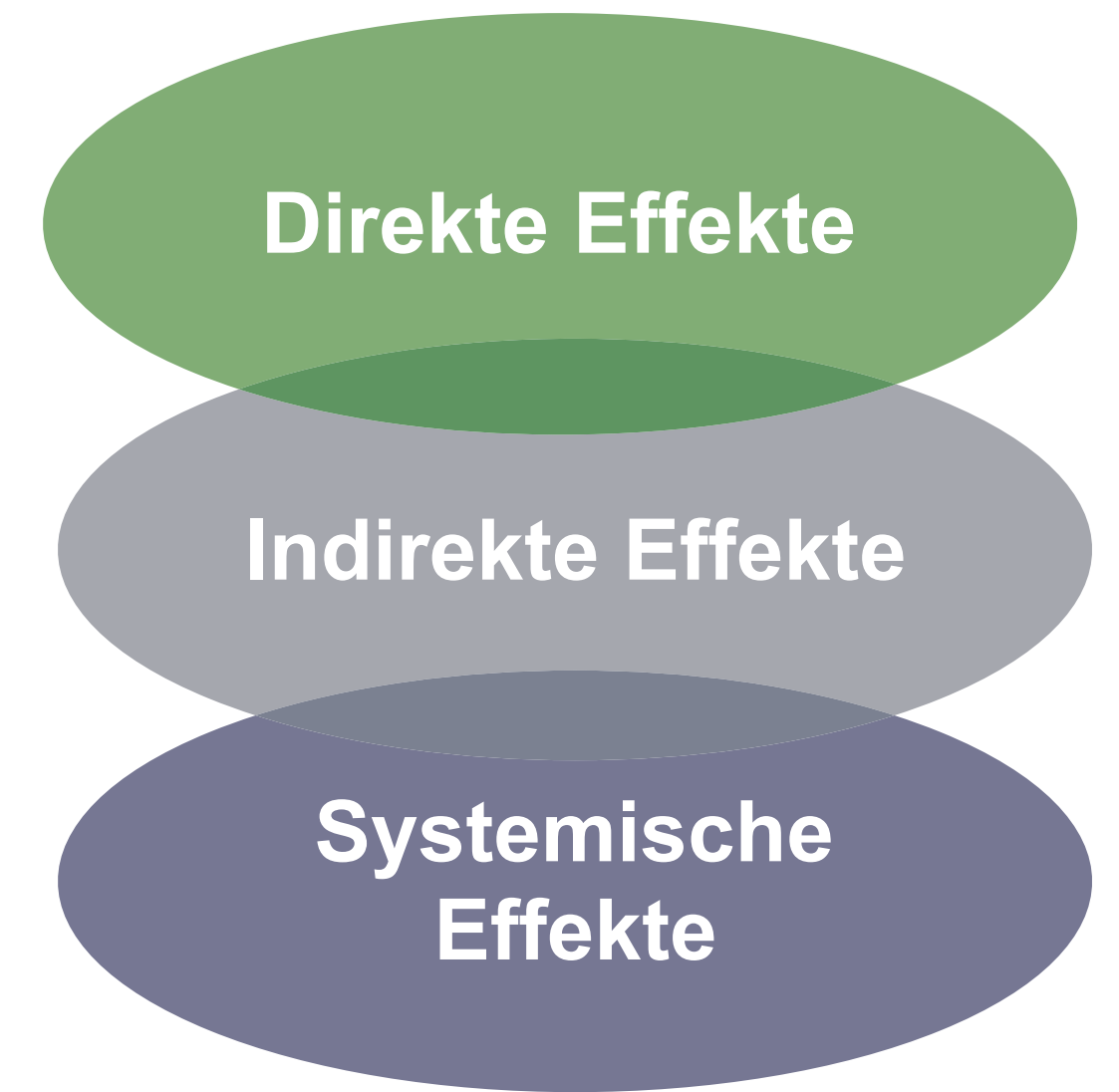
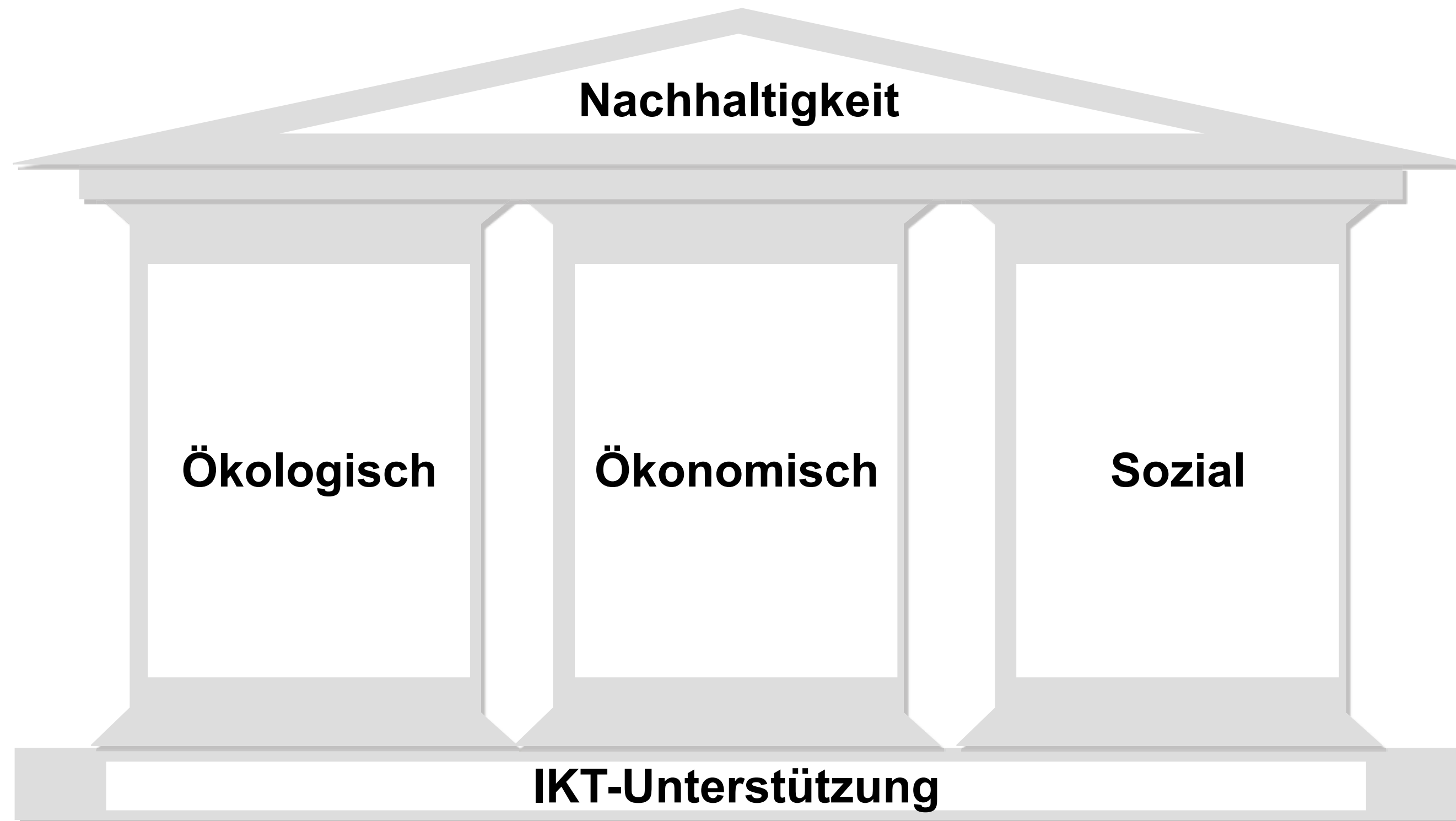
Search Engine Portal

Wer archiviert die Archive?



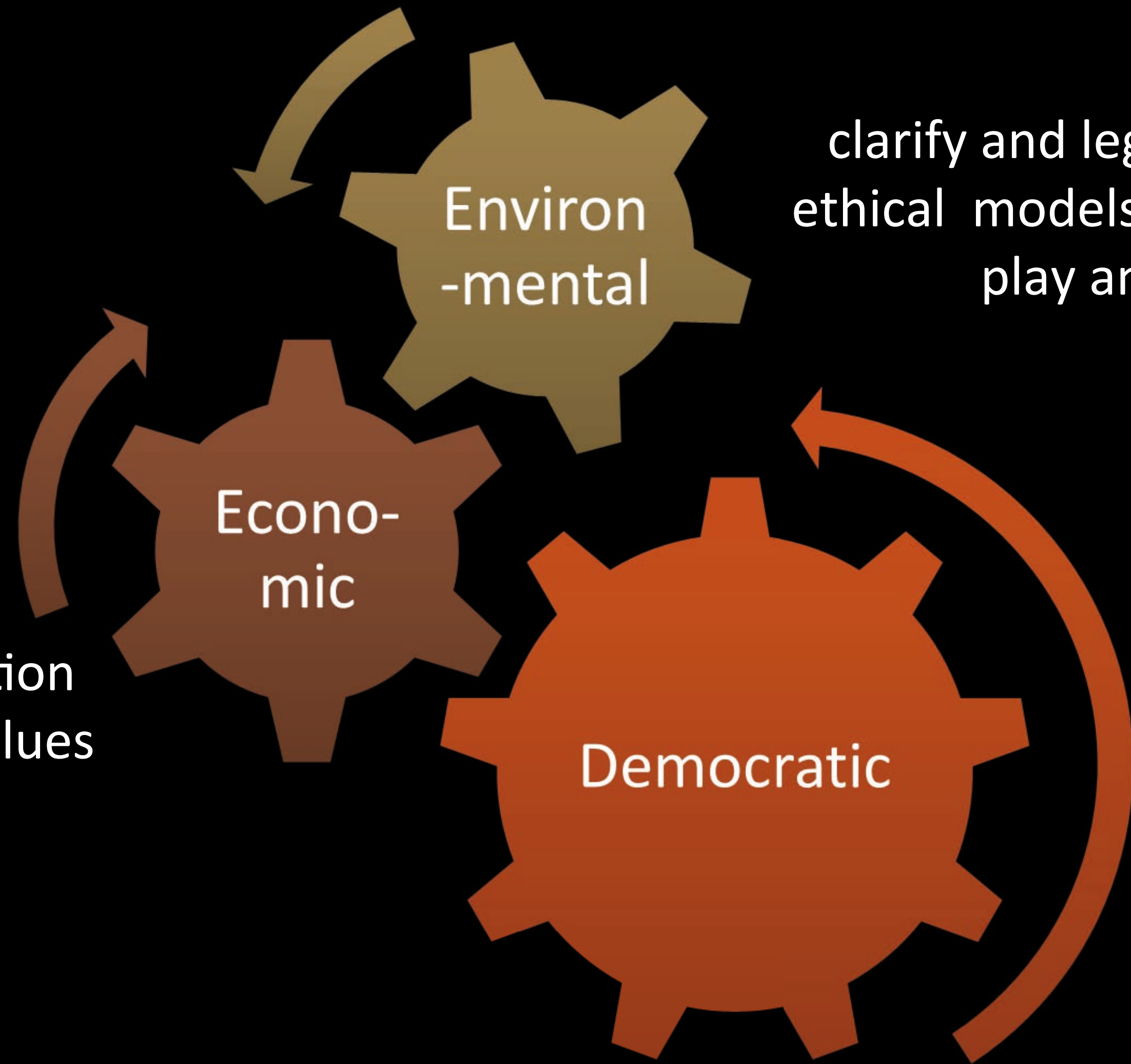
<http://richmondsfblog.com/2013/11/06/part-of-internet-archive-building-badly-burned-in-early-morning-fire/>

Fazit



Direkte, indirekte und systemische Effekte erschweren eine nachhaltige Gestaltung und Beurteilung von IKT-Systemen, die gleichermaßen ökologischen, ökonomischen und sozialen Anforderungen gerecht werden.

[Arnold Picot, Stefan Hopf: ICT as an Instrument for More Sustainability: Why It Is Not That Simple. In Herzog, M.A.: Economics of Communication. ICT Driven Fairness and Sustainability for Global and Local Marketplaces, GITO 2015]



clarify and legitimise new ethical models for work and play and life

steer communication tools to support values that count

explore emergent multi-level governance models

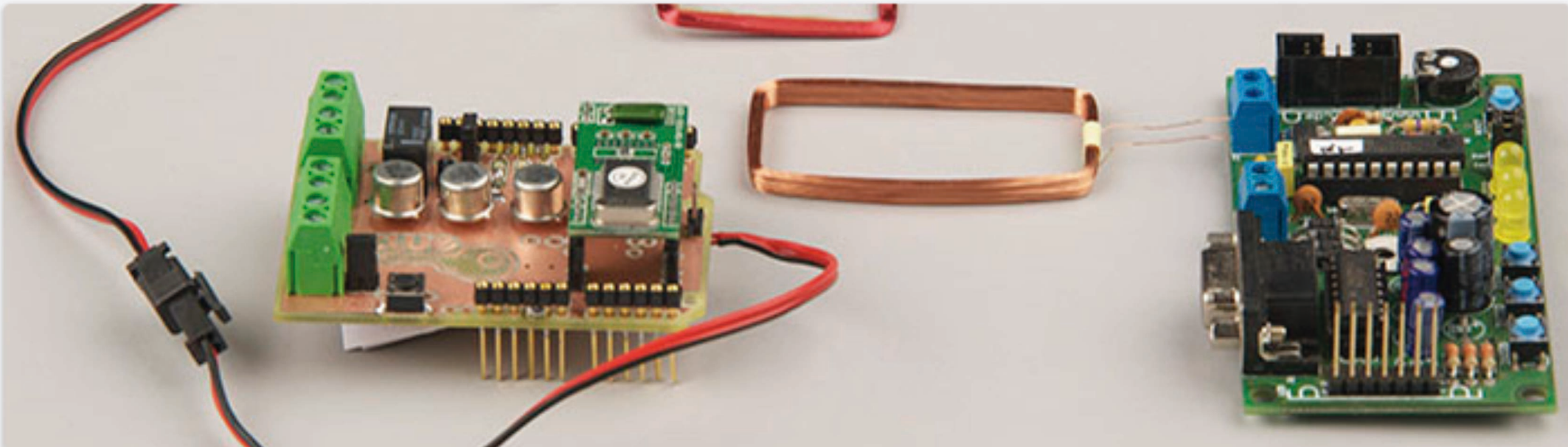
[Jesse Marsh: think virtually local ecologies of new economic models. EcoCom, 08/11/2013, Berlin, Germany]

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spirit.hs-magdeburg.de/spirit/index.php?id=7&L=0

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Veranstaltungen
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Kontakt


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Michael A. Herzog
Prof. Dr.-Ing.; Wirtschaftsinformatik
Wissenschaftlicher Leiter der Forschungsgruppe SPiRiT

Ort: Campus Magdeburg: Haus 7, Raum 1.10
Campus Stendal: Haus 3, Raum 0.11

Telefon: 0391 886 4805

E-Mail: [michael.herzog\(at\)hs-magdeburg.de](mailto:michael.herzog(at)hs-magdeburg.de)




[Zur persönlichen Webseite](#)

Olaf Friedewald
Prof. Dr.-Ing.; Elektrotechnik
Wissenschaftlicher Leiter der Forschungsgruppe SPiRiT

Ort: Campus Magdeburg, Haus 8, Raum 2.18

Telefon: 0391 886 4472

E-Mail: [olaf.friedewald\(at\)hs-magdeburg.de](mailto:olaf.friedewald(at)hs-magdeburg.de)



Tweets [Folgen](#)

SPIRIT @spirit_group 3 Jul
Forgot to post: First photo part at #h2bc Website #barcamp #stendal @hs_magdeburg h2bc.de/impressionen/ ...coming more soon
[Öffnen](#)

SPIRIT @spirit_group 3 Jul
More #h2bc photos by our great artist @mattse.
flic.kr/s/aHsjYFh5Jn #barcamp #stendal @hs_magdeburg
[Kurzfassung zeigen](#)

Michael A. Herzog 29 Jun @maherzog
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Retweetet von SPIRIT
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Discussion



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Thank You for Your Support!

CONTACT:

Prof. Dr.-Ing. Michael A. Herzog

Campus Magdeburg, Haus 7, Raum 1.10

michael.herzog@hs-magdeburg.de

<http://spirit.hs-magdeburg.de>

<http://www.mherzog.com>



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