



Workshop: Education and Health for Digital Inclusion

by Basic Internet Foundation

Monday, 8. Feb 2015

09:15 - 11:30 h

University Graduate Centre - UNIK, Gunnar Randers vei 19, 2027 Kjeller

IT'S ABOUT
PROVIDING
INDIVIDUALS WITH
THE POWER TO
CONNECT.



Vi på Kjeller



- A hidden jewel
- Innovation at its best
- The Internet
- Opera Software

NILU Norwegian Institute for Air Research

- Atmosphere and climate
- Air quality
- Environmental chemistry
- Environment, society and health

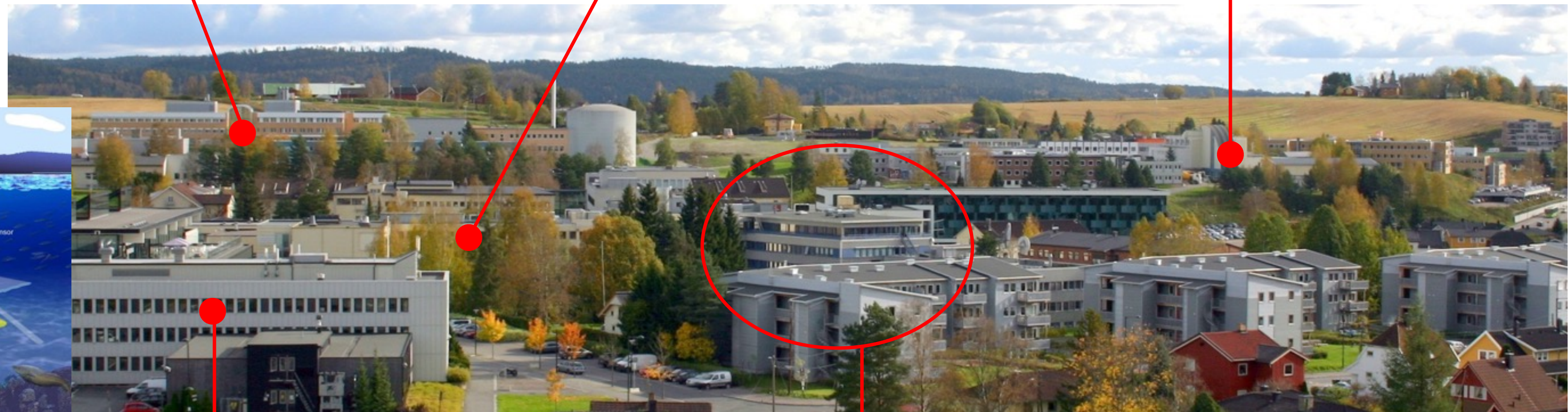
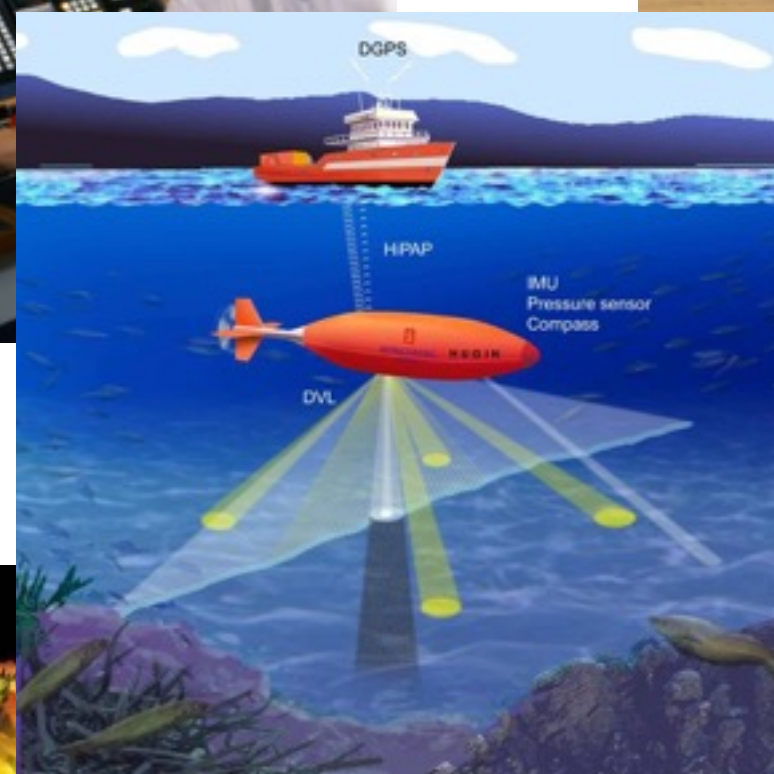
FFI Norwegian Defence Research Establishment

Defence related research and technology:

- Mathematics
- Physics
- Information technology
- Chemistry
- Biology etc

IFE Institute for Energy Technology

- Energy and environment
- Material technology
- Nuclear technology and health
- Nuclear power and safety
- Man and technology
- Oil and gas



HiOA Oslo and Akershus University
College of Applied Sciences

UNIK University Graduate Center at Kjeller
NORSAR - research in geophysics

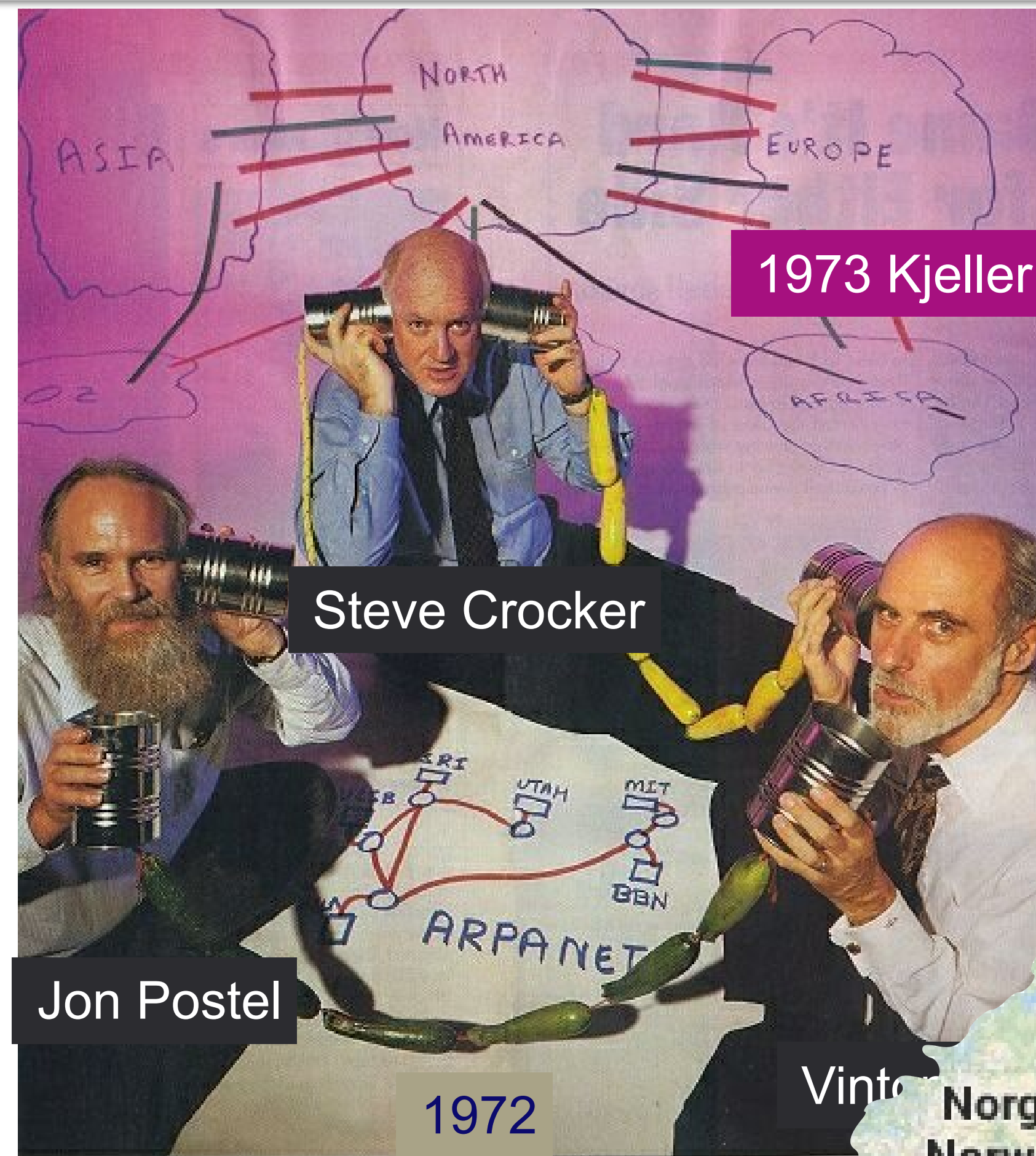
Justervesenet
Norwegian Metrology Service
Governmental agency for:
- Legal metrology
- National measurement standards
Jan 2016, Josef Noll



- The building where the Internet (Arpanet) came to Europe in June 1973

1971 (at which point 23 hosts, at universities and government research centers, were connected to the ARPANET); 29 by August, 1972, and 40 by September, 1973.

At that point, two satellite links, across the Pacific and Atlantic Oceans to [Hawaii](#) and [Norway \(NORSAR\)](#) had been added to the network. From Norway, a terrestrial circuit added an IMP in London to the growing network.



Source: <http://www.michaelkaul.de/History/>



1973: Internet to Kjeller/Europe

1994: Opera Software

2014: Basic Internet
«half a dollar is enough»

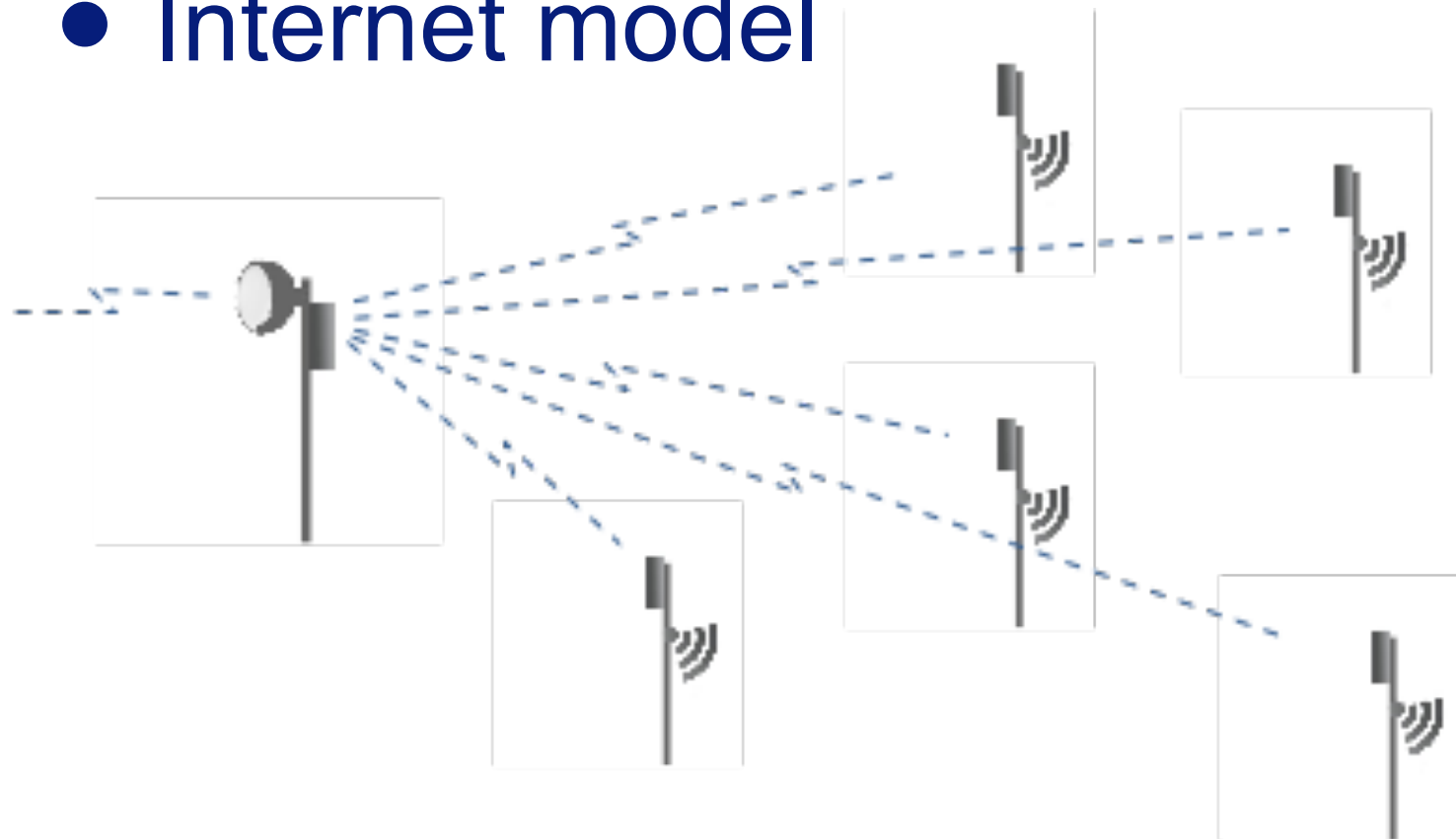
Kjeller

Common Challenges



Connectivity

- Wifi inside
 - security, usability
- Operator-centric networks
 - Revenue driven
- Community networks
 - Internet model



Scalability

- Billions of devices
- SIM-card model?
- reconfigurability
 - firmware
 - security

Affordability

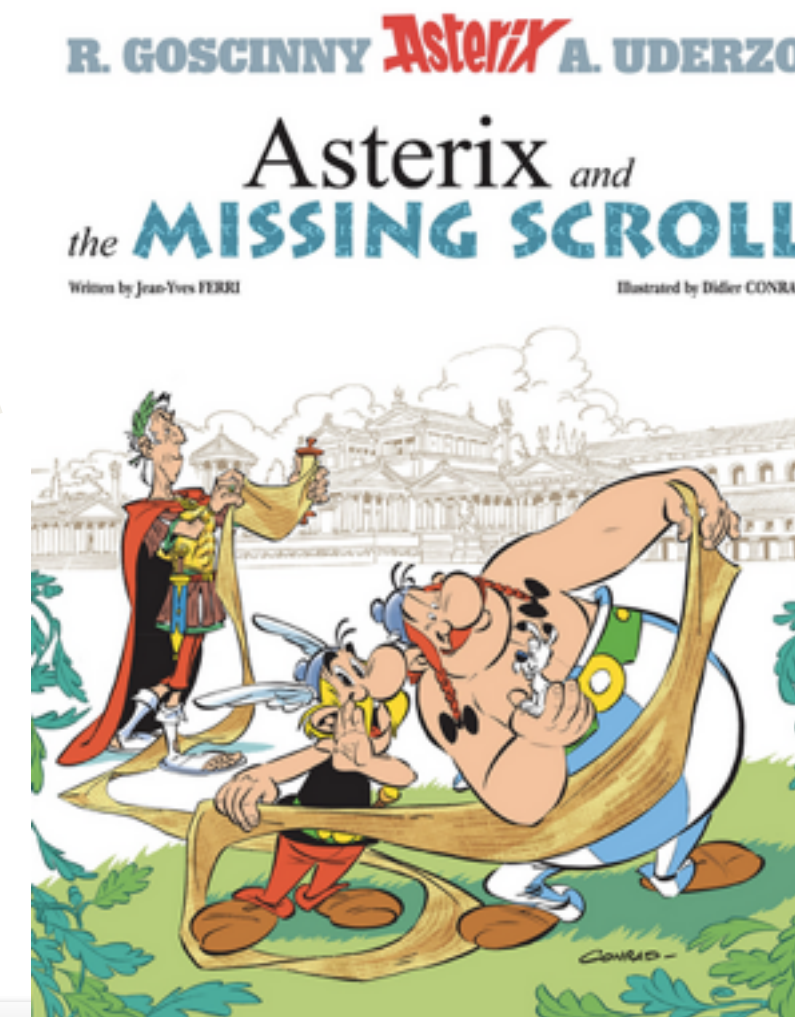
- SIM-card business
 - revenue-driven
- Facebook: Free Basic
- big-data driven

Education

- 59% of people unconnected in the developing world
- Digital Gap



Information
- knowledge that you get about someone or something
- facts or details about a subject
[source: merriam-webster.com/dictionary]





Basic Internet Foundation

“free access to basic information for everyone”

<http://BasicInternet.no>

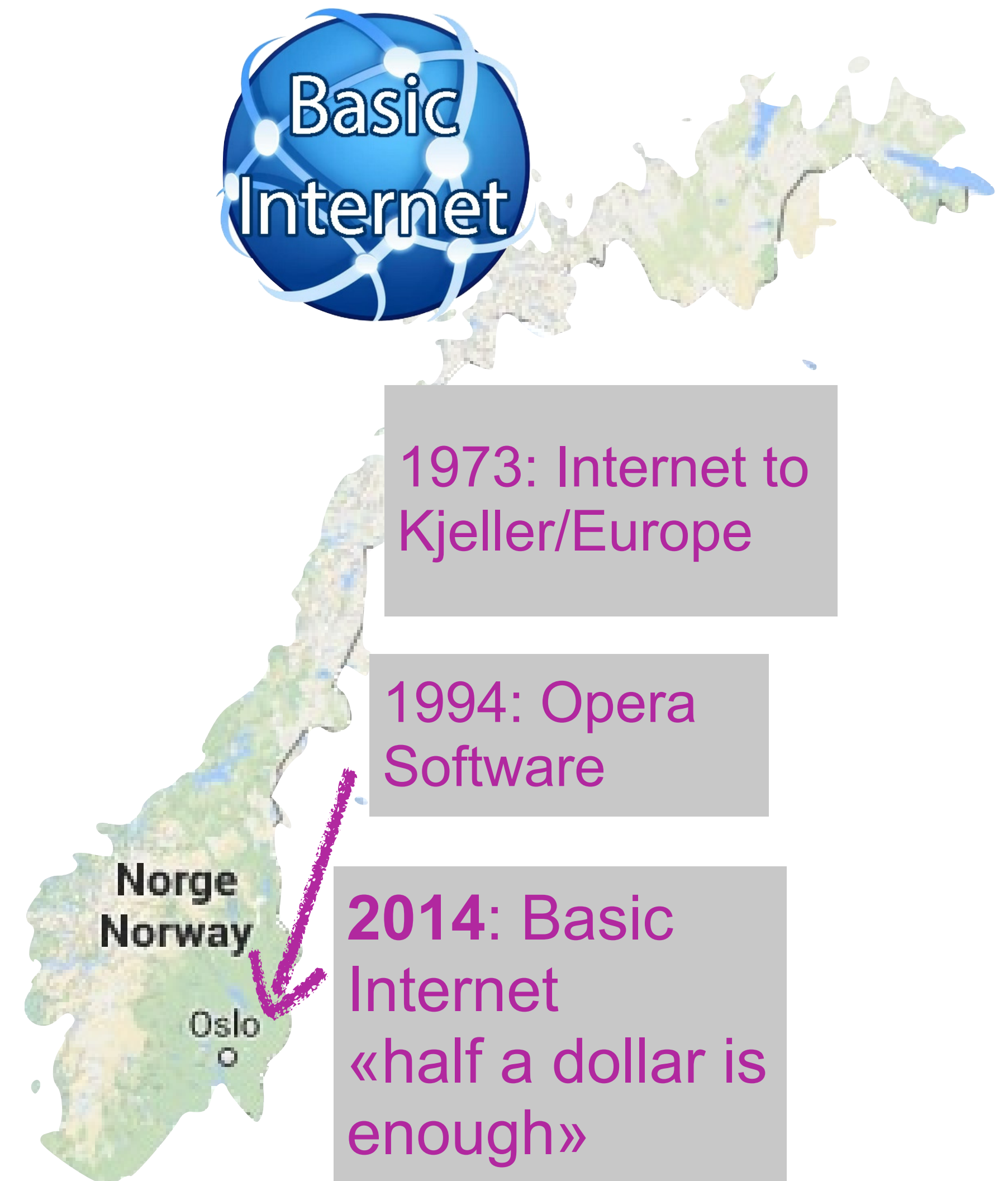


Availability, Affordability

Basic Internet Foundation



- Knowledge is the basis for education, health and entrepreneurship
- Basic Internet is access to text and pictures
 - for 300-400 people on a thin satellite link
 - no need for broadband
- develops the market, complementary to market actors
- roll-out through local partners
- Foundation by experienced people
- Now:
 - Commercial roll-out Congo (DRC)



Connectivity & Affordability



- Mobile supported development
- Affordability (costs of data)
- industrial perspective (Ind4.0)



The Unconnected Market Landscape

Unique Mobile Internet Users

Population 15+ (bn)	Total
Developed World	0.9
Developing World	4.3
Total	5.2

BMI	NMI	Unconnected	
0.6	0.1	0.3	
1.0	0.8	2.5	3.3
1.6	0.9	2.8	

Penetration 15+ (%)	Total
Developed World	100%
Developing World	100%
Total	100%

BMI	NMI	Unconnected	
64%	8%	27%	
23%	18%	59%	77%
30%	17%	53%	

Source: GSMA Intelligence; figures reflect position at end of 2014
 BMI = Broadband Mobile Internet (3G/4G); NMI = Narrowband Mobile Internet (<3G)



[Source: GSMA, Nov2015]

United Nations Sustainable Development Goals



#Basic4All

The Role of Free Access



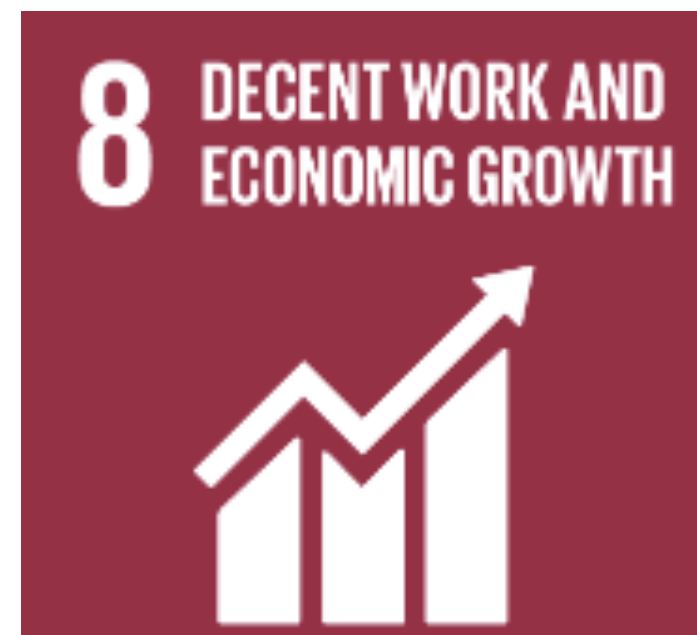
Education & Lifelong



Health & Well-Being



Empower Women & Girls



Growth & Employment



Infrastructure & Innovation



Inequalities



Peace and Justice



inclusive societies

Achievements



- Established core infrastructure for Basic Internet
- Deployed Basic Internet access in 4 hospitals as part of the GravidPluss Health Study
- Operational Network at one University in DRC Congo
 - 6 years of Internet provision in Africa
 - roll-out plans with partners
- Global Partnership for Mali
 - lacks funding



The project takes an innovative approach to the issue of digital and financial inclusion. The consortium of both for-profit companies and non-profit organizations provides a good test case for the kind of public-private development partnerships envisaged in the Government's White Paper «Working Together: Private sector development in Norwegian development cooperation» (Meld. St. 35 (2014–2015)). Support from Norad has the potential to be catalytic, and displays additionality as well.



Basic Internet Education

Net neutrality and Non-discriminating access to information

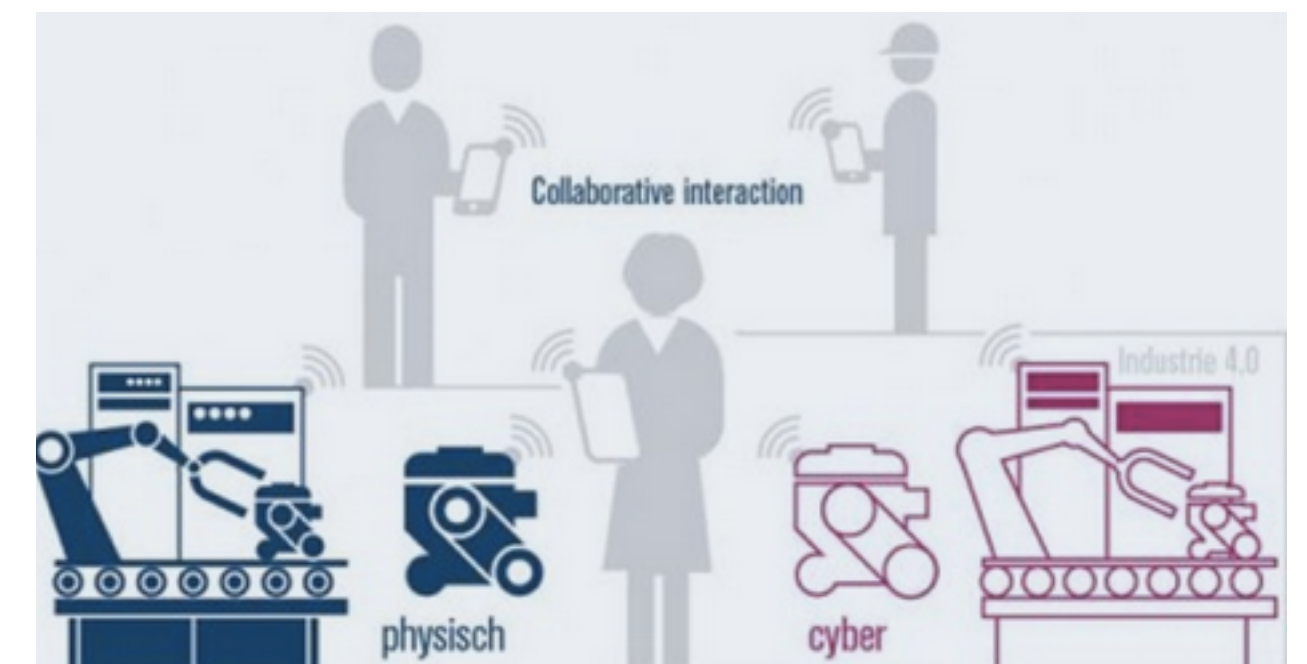
<http://BasicInternet.org>



Digital Divide & Digital Inclusion



- Basic school in **education**
 - 3 basics: read, write, mathematics,
 - +2 innovation drivers: express, ICT
- University **education**
 - basics: analysis, problem solving, evaluation
 - innovation by: english writing, innovation management
- the Global World perspective
 - Data- and **sensor-driven systems**
 - **Knowledge-**, sustainability-driven economy



Internet-driven services



- App economy
 - «All services» come through mobile devices
 - from «parts» to services
- Ambient Assisted Living (AAL)
 - Sensors supporting care information
 - Proactive Health professionals
 - call if you have not taken your medicine
 - call if your blood pressure is too high
- Hospital access
 - BasicInternet at 5 hospitals
- Producing sensors vs analysing data
 - sensor producers don't see the use of their sensors
- Information providers (Google)
 - become industry suppliers

«Free basic access for low capacity services»
The Basic Internet Vision @Basic4all

MIT and the global GDP



- 50% of U.S. economic growth after 1945 attributed to technological innovation

25 largest economies
by GDP (PPP) in 2015 in Billions

1	 China	18,976
2	 United States	18,125
3	 India	7,997
4	 Japan	4,843
5	 Germany	3,815
6	 Russia	3,458
7	 Brazil	3,259
8	 Indonesia	2,840
9	 United Kingdom	2,641
10	 France	2,634

MIT alumni startups (2011 numbers)

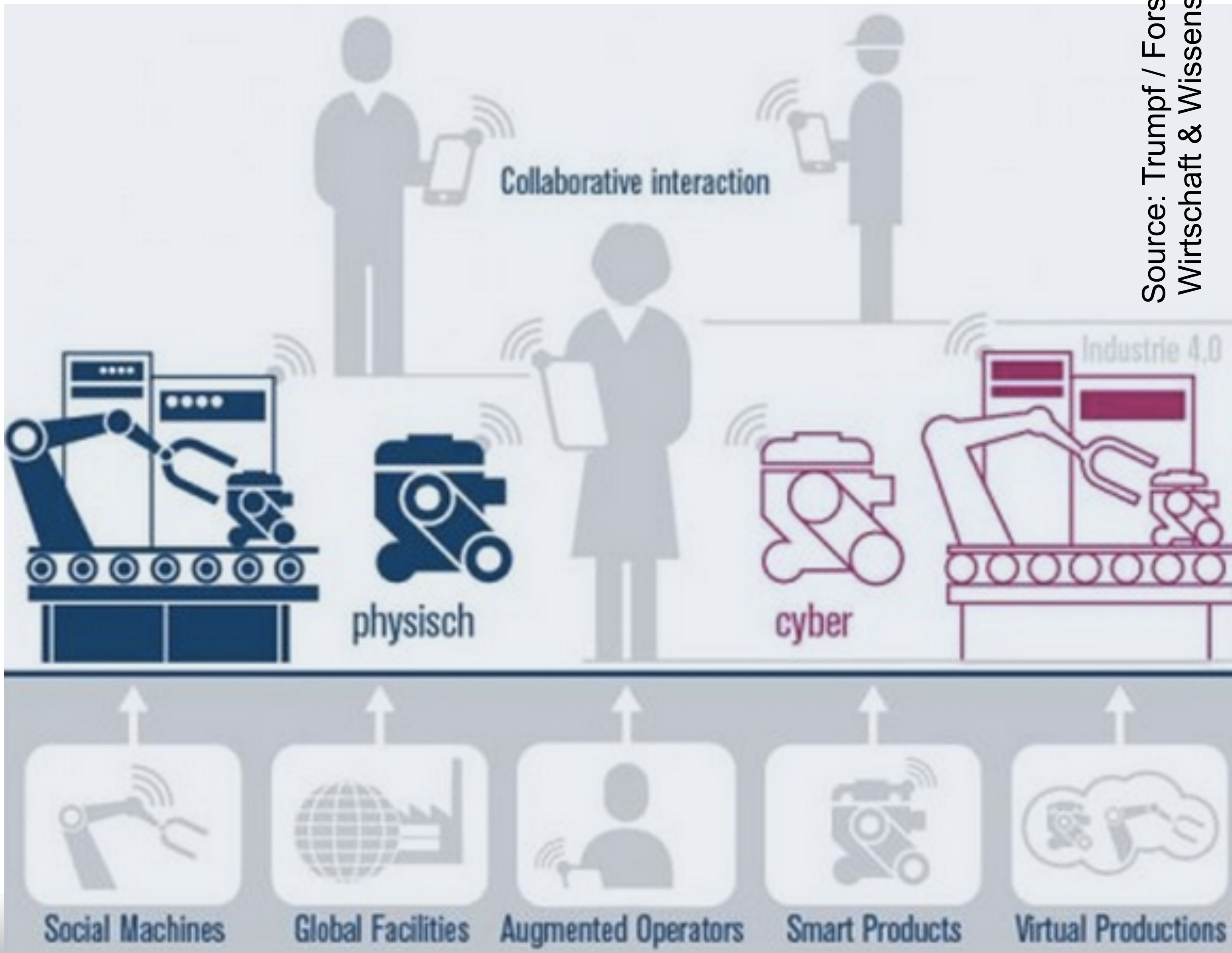
- 25,800 active companies
- 3.3 million people employed
- \$2 trillion gross domestic product
- 10th world rank in GDP
- 19% higher per capita income than California (27% higher than USA)

Role of education

- 75% of the world's GDP growth in developing countries

Industrie 4.0 vision

Source: Trumpf / Forschungsunion
Wirtschaft & Wissenschaft



- EU commission, 4 focus areas for Industrie4.0
 - Digital Innovation Hubs
 - Leadership in digital platforms
- **Closing the digital divide gap**
 - Providing framework conditions
- Collaboration with regional/structural funds (ESIF) and Juncker package (EPIF)



GravidPluss

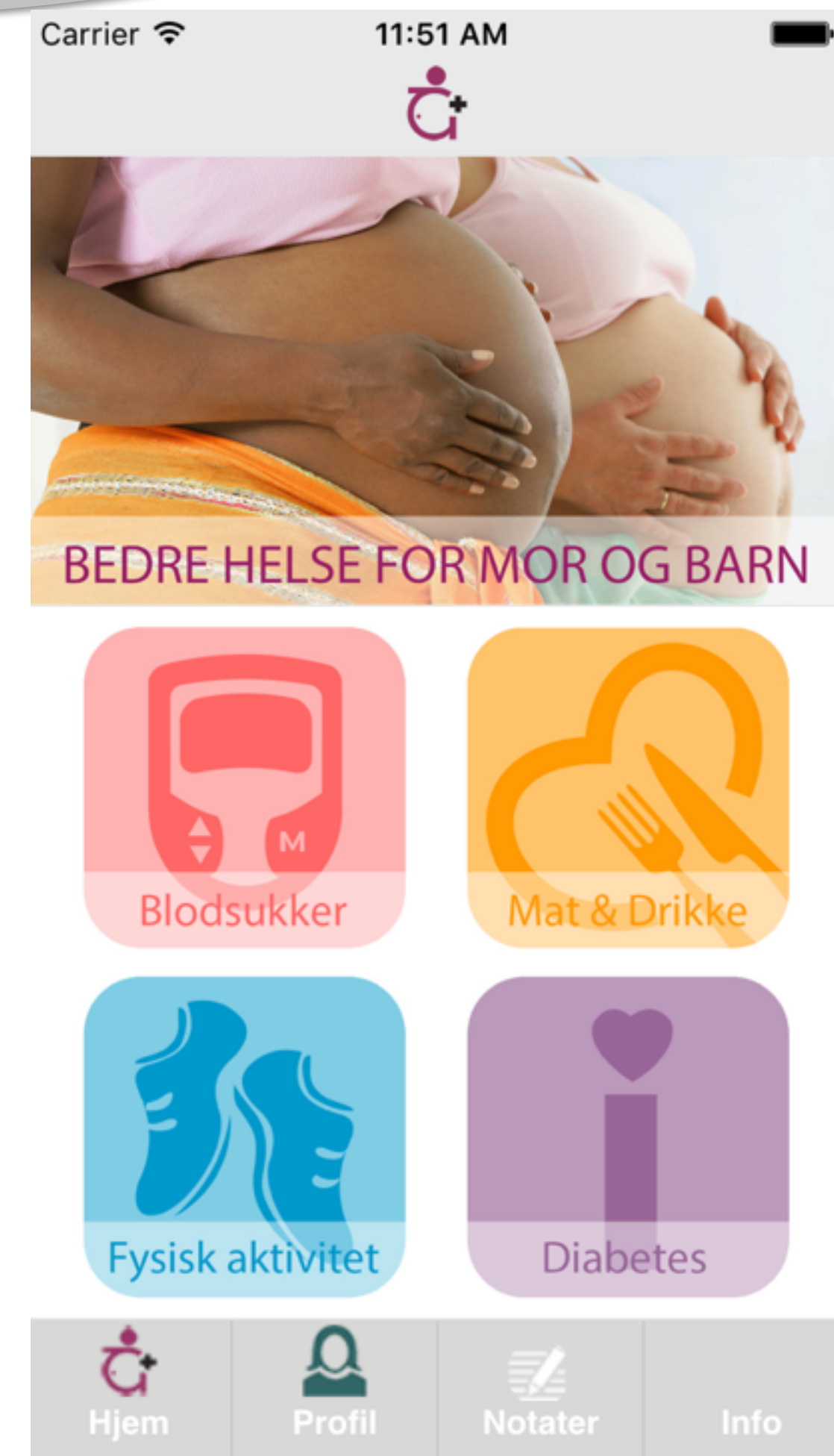
“personalised support for pregnant women with diabetes”

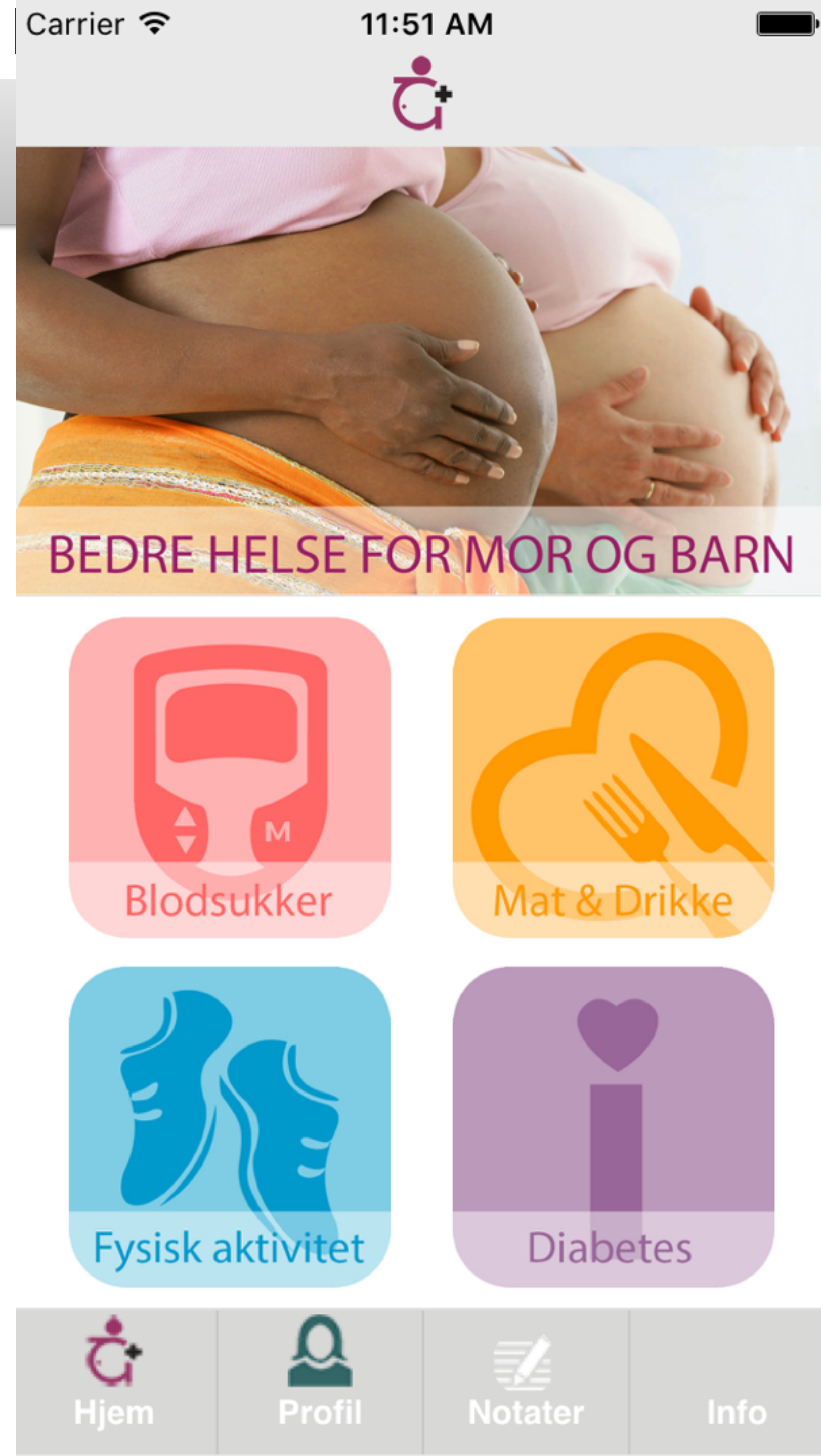
<http://GravidPluss.no>

NFR founded project

- HiOA (Mirjam Lukasse), UNIK
- 5 Hospitals: Aker, Ullevål, Riks, Drammen, Bærum




A Health
Application for Basic
Internet





LANGUAGE:

Vennligst velg ditt språk
اپنی زبان منتخب کریں
Fadlan dooro luqaddaada

Gravid
BEDRE HELSE FOR MOR OG BARN

Min matkultur

Jeg ønsker å få informasjon basert på et:

Norsk kosthold 

Pakistansk kosthold 

Somalisk kosthold 

MIN PROFIL

- Min vekt
- Mine mål
- Mitt aktivitesnivå
- Språk



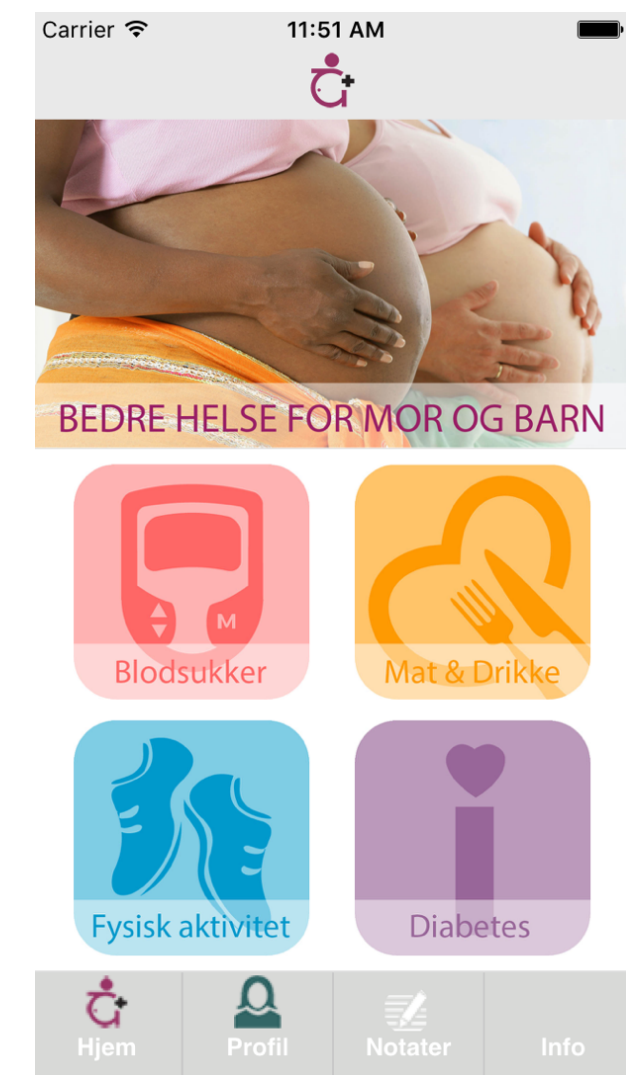
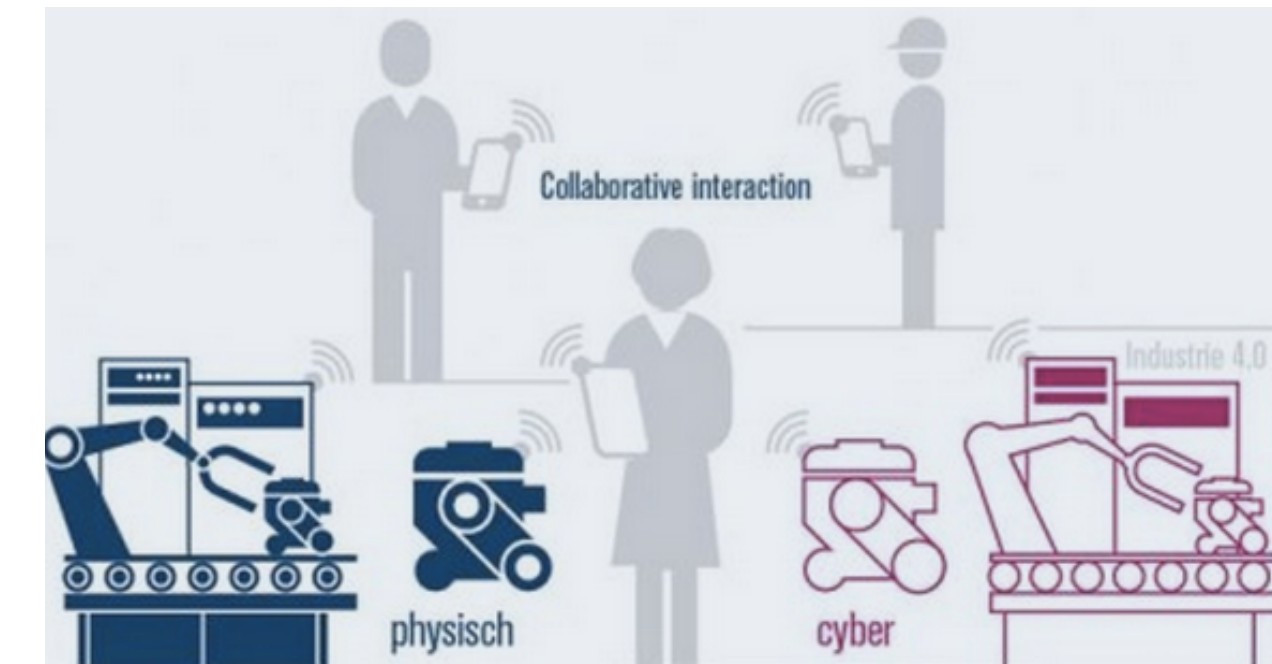
BLODSUKKER

- Registrer blodsukker
- Ditt blodsukker over tid
- Min erfaring med mat og blodsukker
- Om svangerskapsdiabetes
- Skriv ut blodsukkerverdiene

Conclusions



- Internet of Things (IoT) is a game changer
 - Data driven industries
 - Sensors come and drive us
- Collaborative approach for a (more) secure society
 - partnership for secure and privacy-aware applications
- Address the challenges
 - **Connectivity** -> novel business models
 - **Scalability** -> open wifi with “Highway”
 - **Affordability** -> combined business model
 - **Education** -> addressing the digital gap
- Digital education and health
 - ➔ based on Basic Internet infrastructure
 - ➔ through a worldwide partnership



Proposal Topics for Norad/NFR/ Innov.Norge



Knowledge

- Best praxis
 - open information
- Digital Gap

Health

- Billions of devices
- cheap sensors
- applicability?
 - education

Affordability

- SIM-card business
 - revenue-driven
- Facebook: Free Basic
- App-store for Basic Internet

Education

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- Wikipedia +Examples +Evaluation

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