TIVIT Service Development Laboratory: FORGE

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TIVIT MISSION

- **TIVIT creates ICT based business ecosystems to enable new global growth business for TIVIT's owners and partners**

- Services include:
  - Cooperative national and international research programs to create new technological and business innovations
  - Facilitation of business concept creation to explore new business opportunities in Finland but aiming to global markets
  - Coordination of international research activities
  - Service creation laboratory – FORGE (New service category - ramp up in 2012)

- Success factors:
  - Focusing on selected breakthrough opportunities, results and international markets
  - Continuous benchmarking and dynamic adjustment of activities
  - Fast flow of results from research to business utilization - based on the latest innovation theories and models inside programs

ICT TRANSITION - PAST 1980…2007 WITH NOKIA

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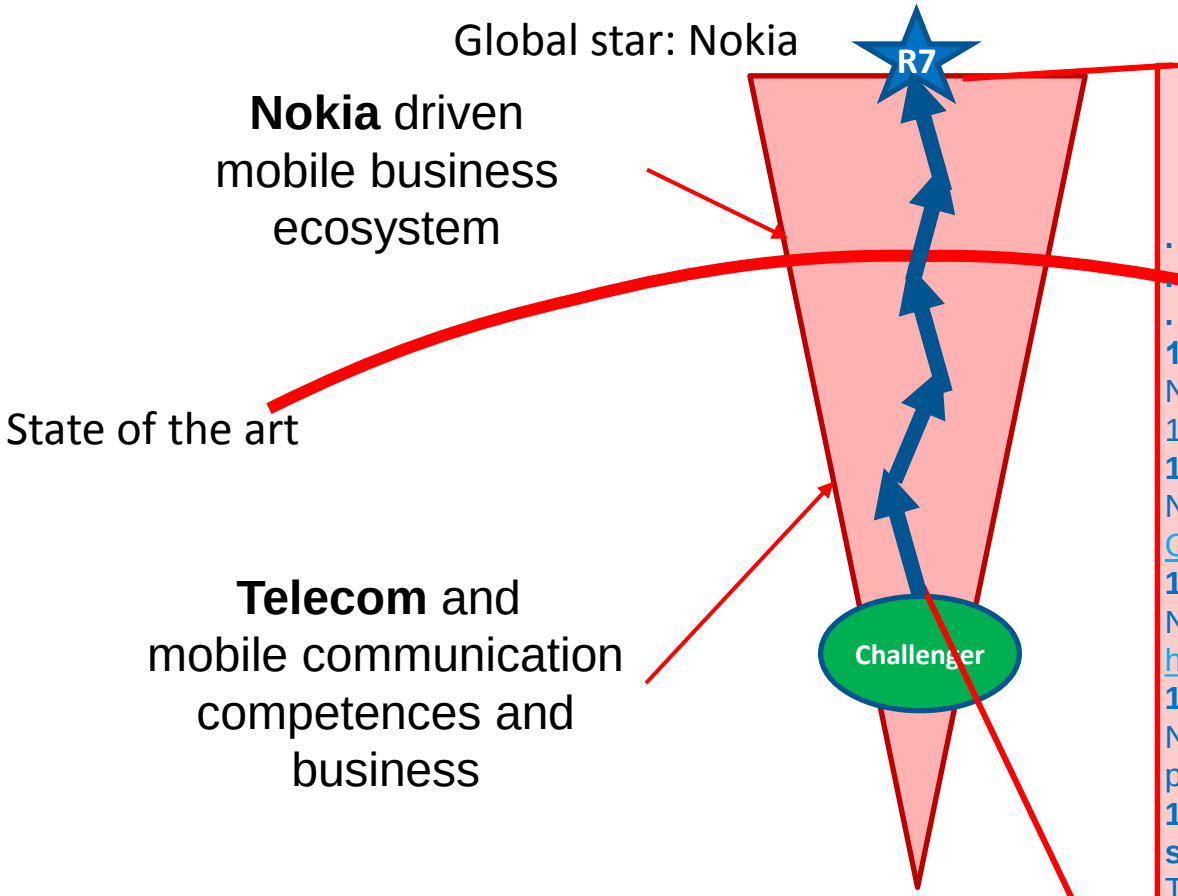

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1992: Nokia's first GSM handset
Nokia launches its first GSM handset, the Nokia 1011.

1991: GSM – a new mobile standard opens up
Nokia equipment is used to make the world's first GSM call.

1987: Mobira Cityman – birth of a classic
Nokia launches the Mobira Cityman, the first handheld NMT phone.

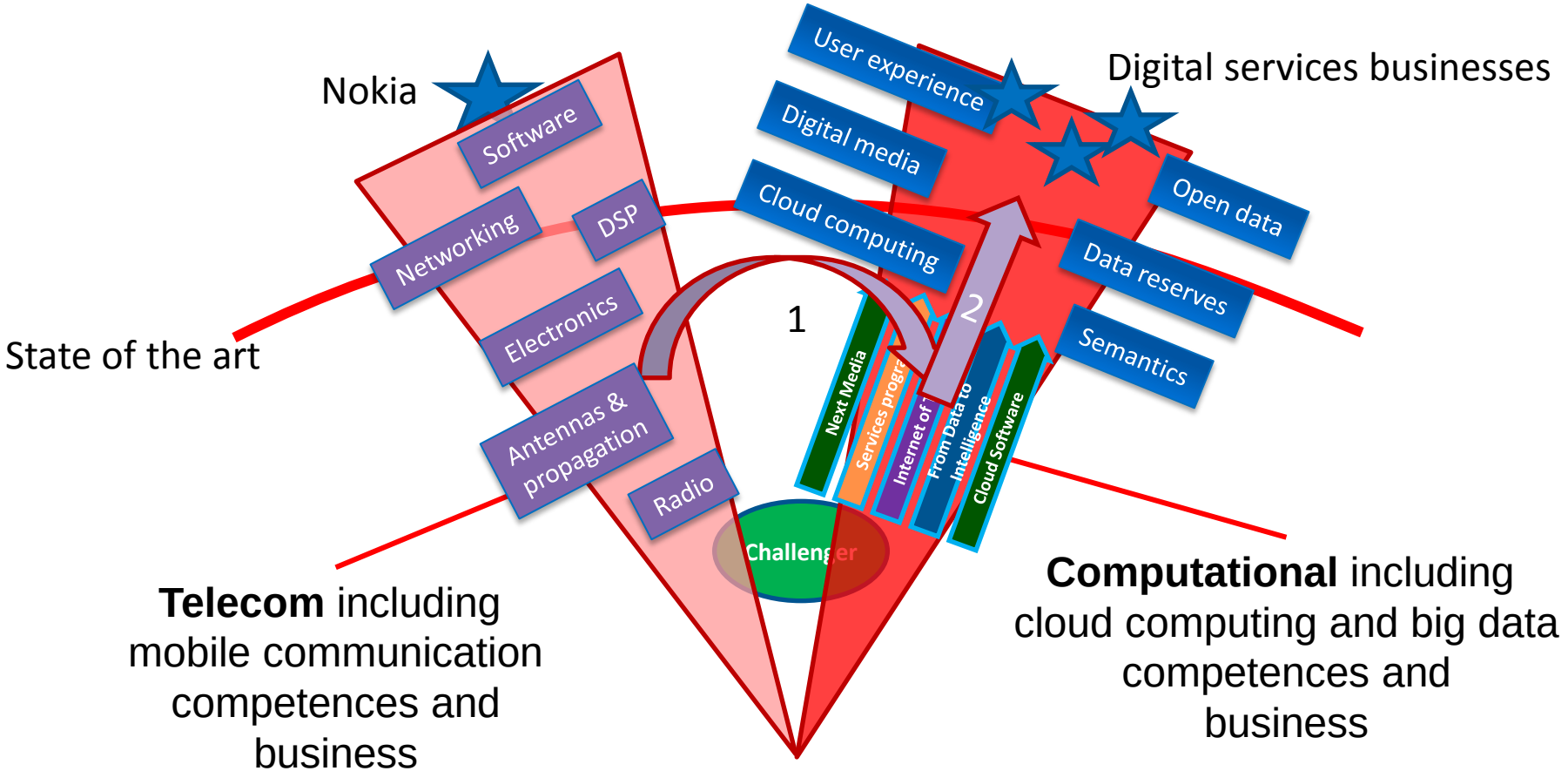
1984: Mobira Talkman launched
Nokia launches the Mobira Talkman portable phone.

1982: Nokia makes its first digital telephone switch
The Nokia DX200, the company's first digital telephone switch, goes into operation.

1981: The mobile era begins
Nordic Mobile Telephone (NMT), the first international mobile phone network, is built.

Source and see more in:
Story of Nokia

ICT TRANSITION – NEW VISION AND STATUS



1. Competence building transition is done!

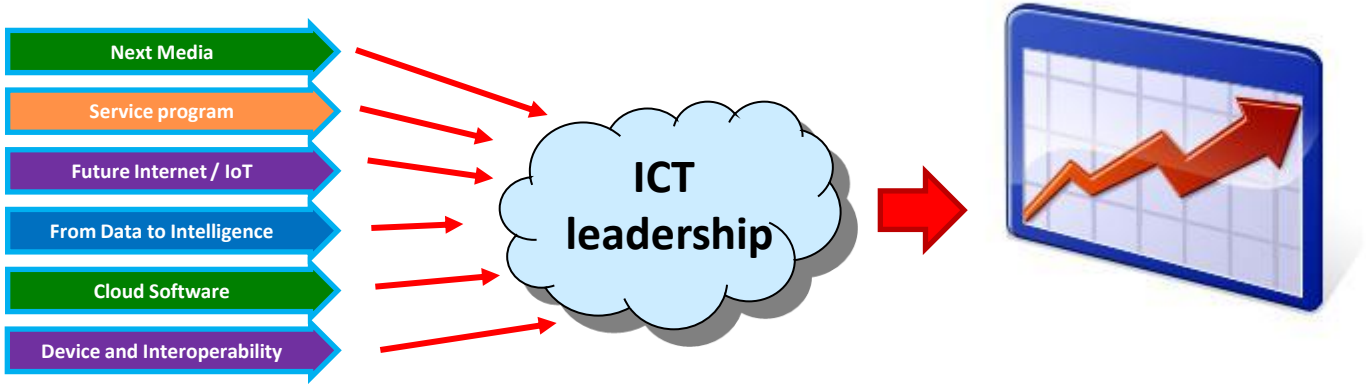
2. Accelerate business growth based on new competences

THE NEW FINNISH GROWTH – VISION SUMMARY

Tivit programs

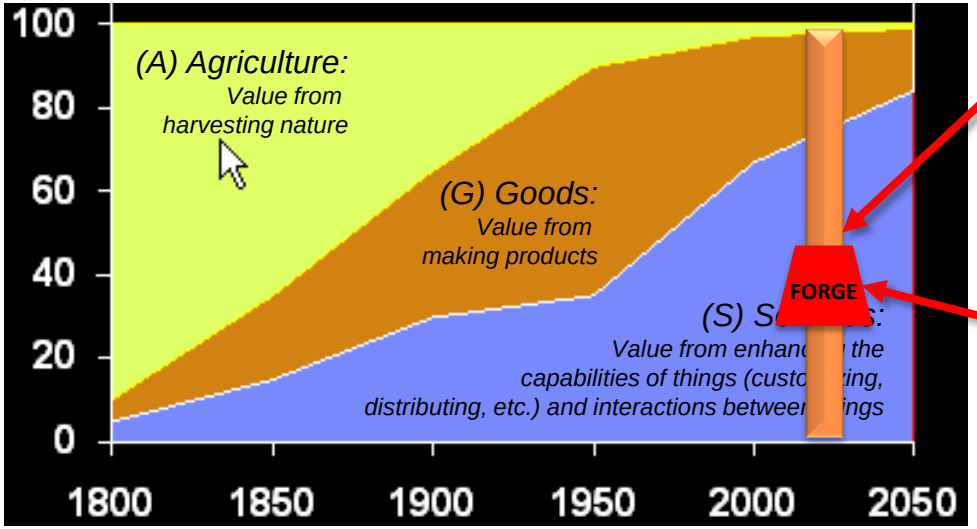
Goal

Business focus and growth



Data intensive digital services
& ICT Enabling the transformation of other industry verticals

NEXT BIG THING: SERVICE INDUSTRY'S BOOM



Boom:
Digitalization of services!

FORGE:
Accelerating the transition towards ICT based service business!

Source: IBM, development in the USA

- **Future Internet Assembly – Research roadmap, May 2011:**

Towards a service economy, where everything is provided as a service	The traditional separation between manufacturing and service industry is progressively fading away, and this trend will probably increase during the current decade. The service economy is currently one of the engines of the current economic recovery. In this respect, we are currently taking part to the so called "servitization of products". A report of the Organisation For Economic Co-Operation And Development (OECD) in 2000 (*1*) claimed that "Services are transforming OECD economies on a

CLOUD: RISKS, THREATS AND OPPORTUNITIES

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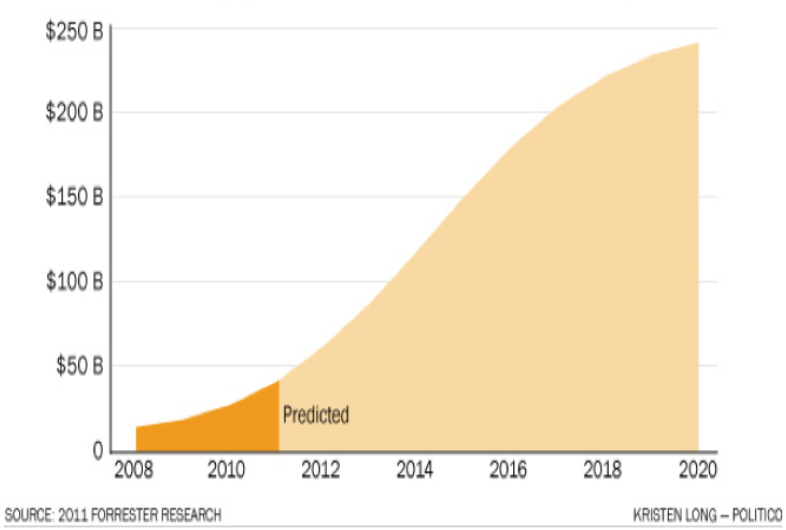
- Huge growth of cloud services
  - Failing to react to this change would be disastrous to Finnish ICT industry – and all industries that utilize ICT
  - There is a **concrete opportunity to build new industry success stories** that compensate the structural changes in large industries – startups are very good but not enough to save Finland
- Cloud hosting business is strategically important to Europe
  - Amazon, Microsoft, Google, IBM and other US-based service providers dominate the cloud industry
  - Patriot Act has raised questions to the security of information stored in US-based servers
  - FORGE can **drive national / European cloud hosting** industry forward
  - European activity is increasing and **Finland can take the leading role**

Global cloud market prediction



Source: http://www.politico.com/news/stories/1111/69366.html

FORGE TURNS MEGATRENDS INTO BUSINESS INNOVATIONS

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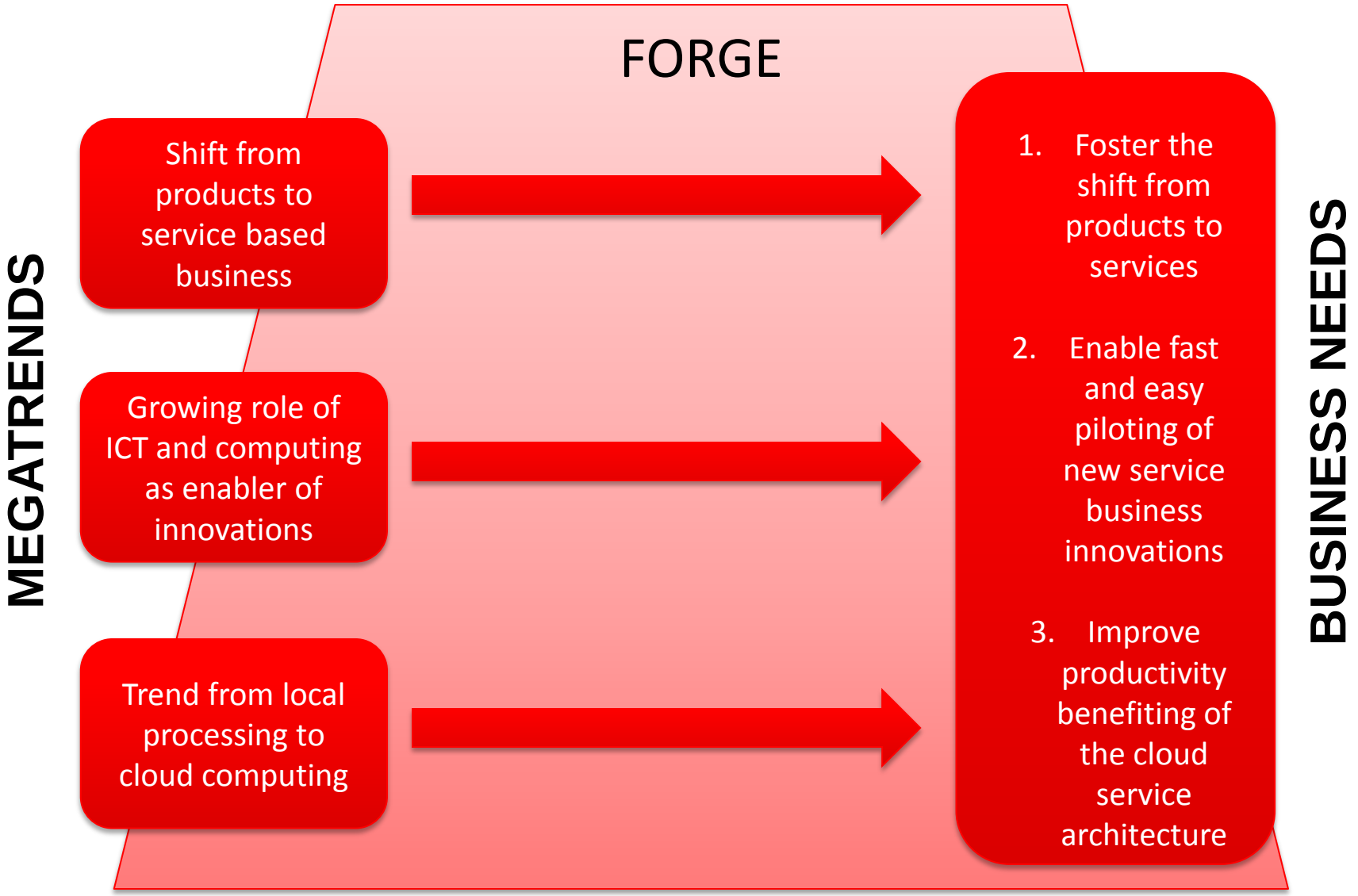

FORGE TURNS MEGATRENDS INTO BUSINESS INNOVATIONS

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WHAT IS FORGE ?

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- FORGE is a development laboratory that provides tools, knowledge, framework and community to boost organizations' competencies and transition to innovative digital cloud-based services

- FORGE aims at
  - introducing cloud services development tools that make service development significantly easier and faster
  - enhancing competencies and solutions for cloud-based services development through networking and communications
  - focusing continuously on value adding in cloud service development

- What FORGE is not
  - FORGE is not a provider of commercial QoS guaranteed cloud, systems integration or service development services
  - FORGE is not a platform for development of "traditional" operational services

FORGE MISSION

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Create growth for the Finnish ICT industry by driving world class innovation and development of digital cloud-based services

FORGE VISION 2016

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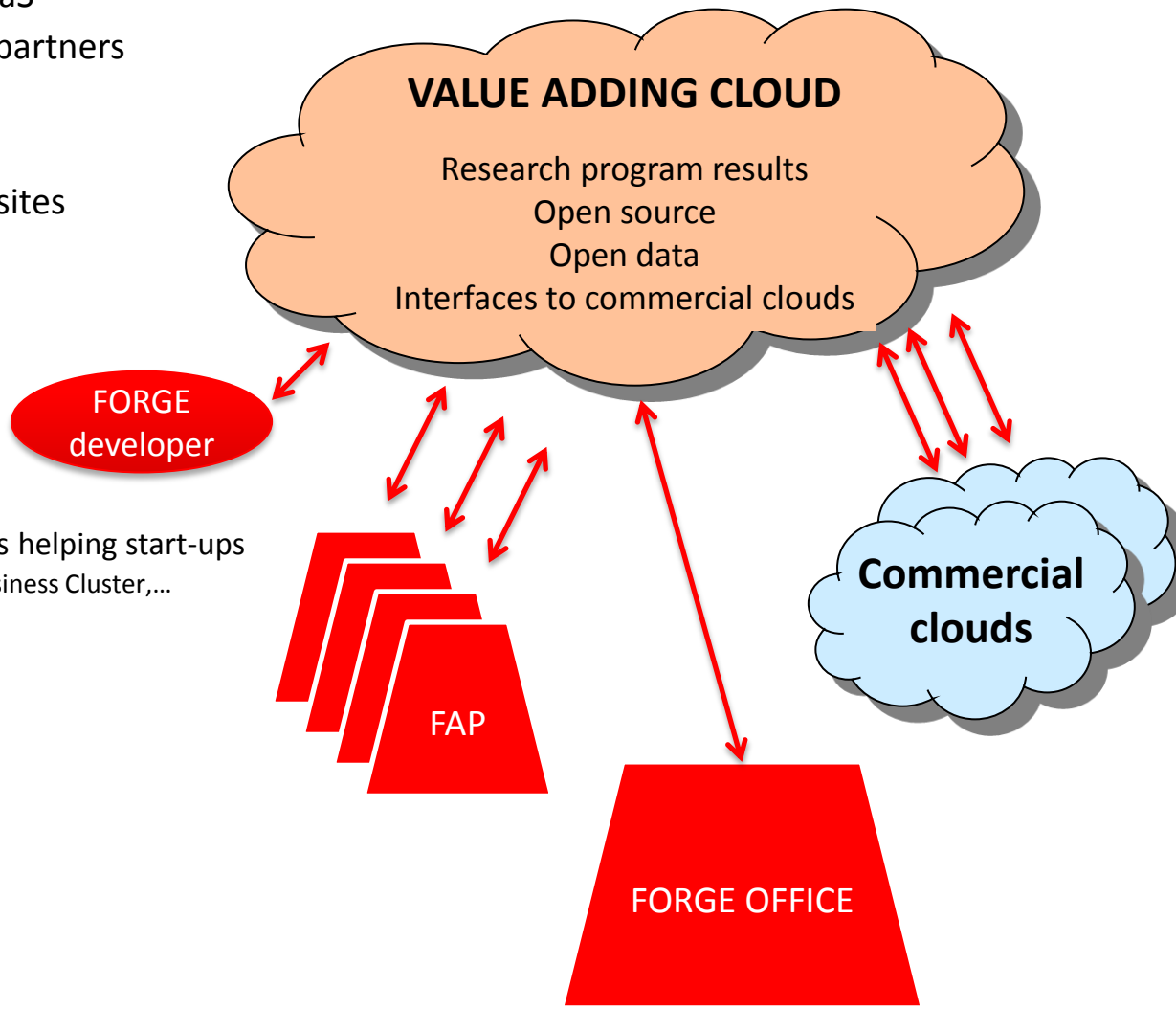
- Finland has become globally recognized, leading European country in development of innovative digital services and cloud computing

- FORGE has initiated a growing and flourishing ecosystem of digital cloud-based services
  - Finnish ICT industry has grown substantially and enjoyed major success on international markets
  - Industry verticals have gained success through new competencies and services
  - Public sector has achieved clear improvements in productivity and service quality by utilizing digital services and cloud technologies
  - Academic research in the field of cloud computing and service innovation has brought significant results
  - Finnish Startup-ecosystem is flourishing with the help of cloud-based service development tools

- FORGE has become de facto environment for piloting of innovative and value-added digital services

STRUCTURE

- FORGE – Value Adding Cloud
  - Open source IaaS, PaaS & SaaS
  - Dev&Test tools provided by partners
  - Image libraries
  - Links to commercial clouds
  - Links to other development sites
  - CSC operated
- Customer sites:
  - Developer site
    - Simple user access (PC + internet)
  - FORGE Access Points (FAP)
    - Development organisations helping start-ups
      - Protomo, OSKE, DigiBusiness Cluster,…
    - Education
    - Promotion
    - Training
  - FORGE OFFICE
    - Management
    - Help desk
    - Showroom (in Otaniemi)



FORGE CLOUD ARCHITECTURE MODEL

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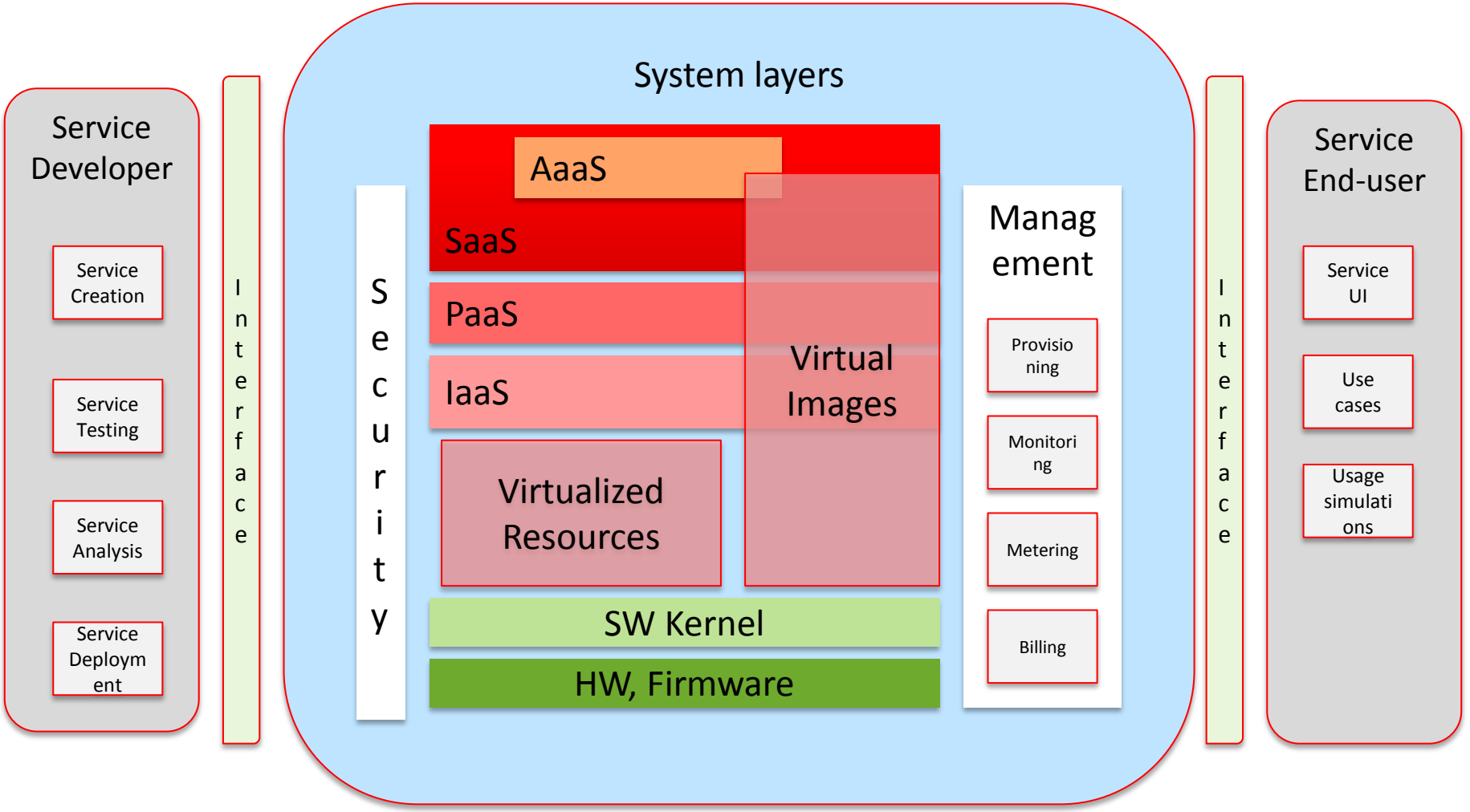

FORGE FOCUS IS ON SERVICE LAYER

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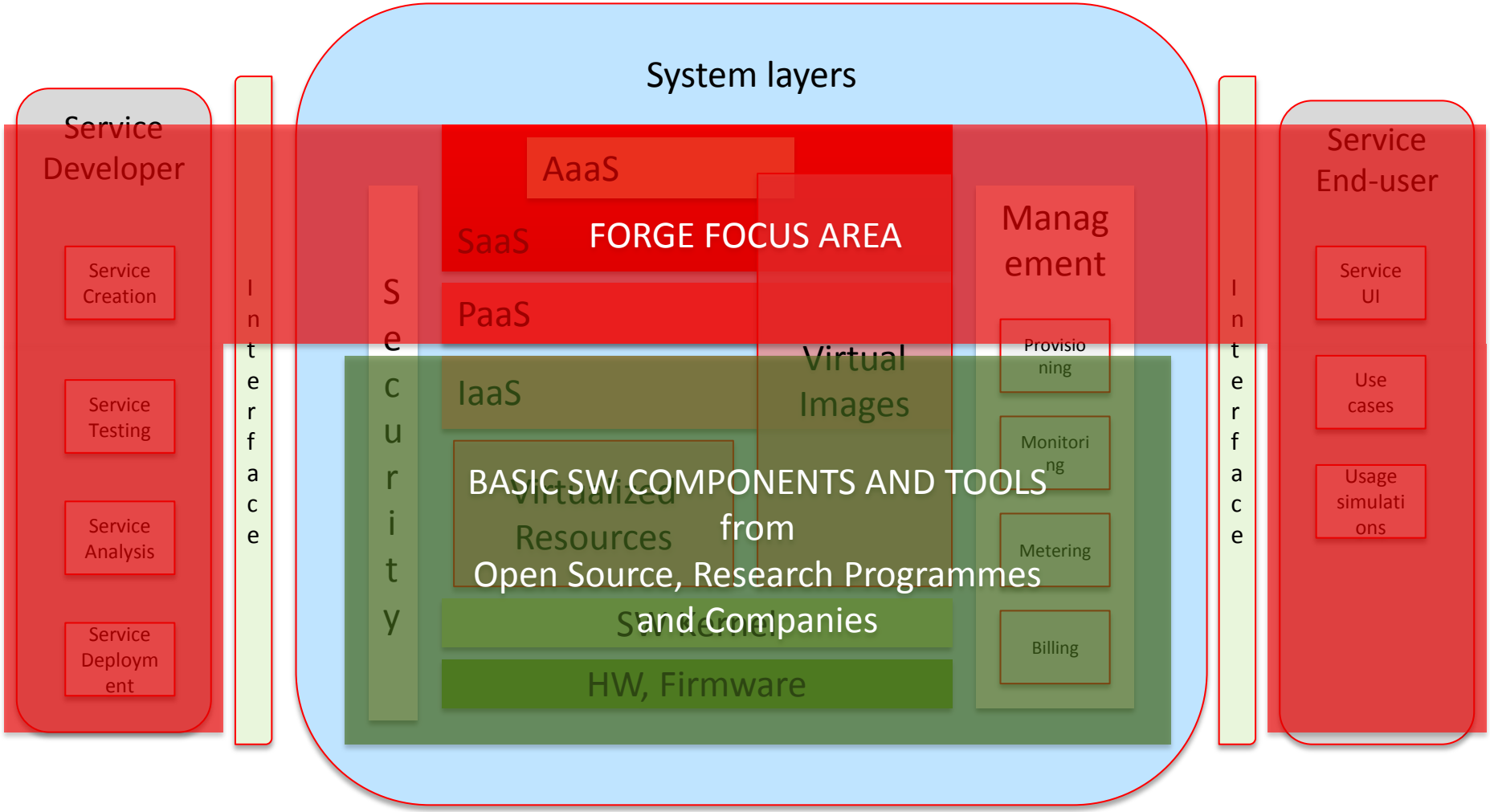

FORGE – SERVICE DEVELOPMENT LABORATORY

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FORGE COMMUNITY

Developers

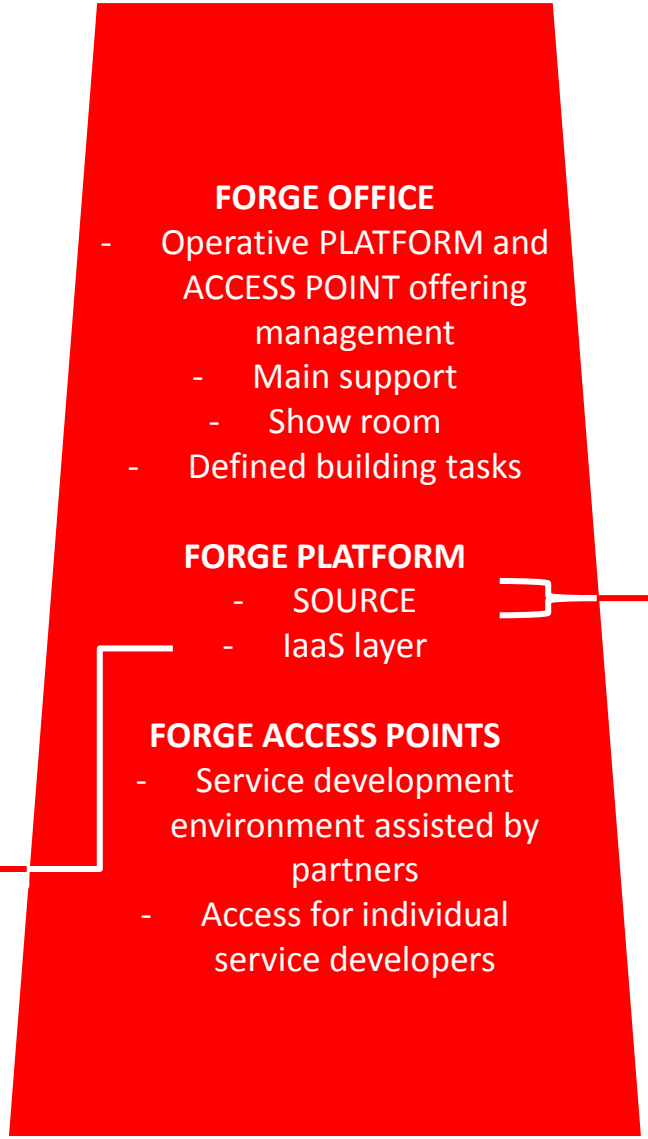
- Mainly ICT companies and universities contributing to the FORGE development and using FORGE for most advanced service R&D

Users

- Companies or public organizations using FORGE for service development

Partners

- Providing technology or essential services
- Dissemination partners



FORGE SOURCE

Mostly open source code

Tools and methods

- Service development tools

SaaS Source

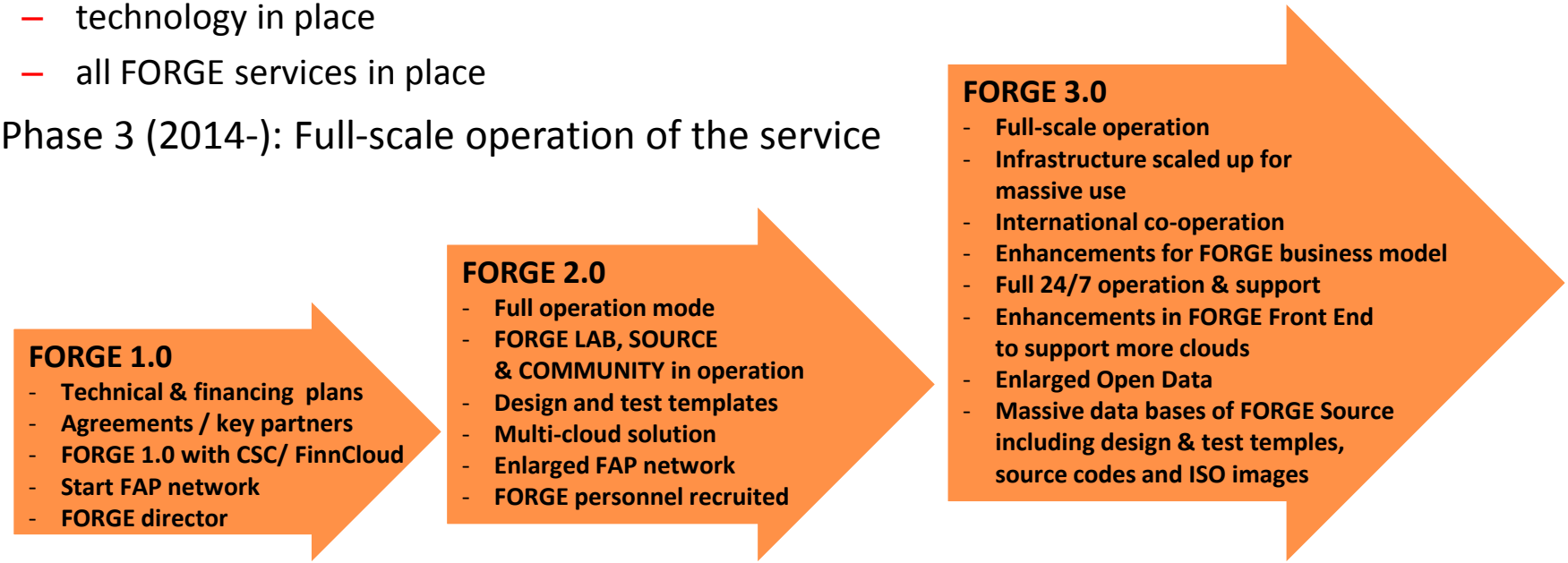
- Service building blocks

PaaS Source

- Platform code
- APIs and interfaces

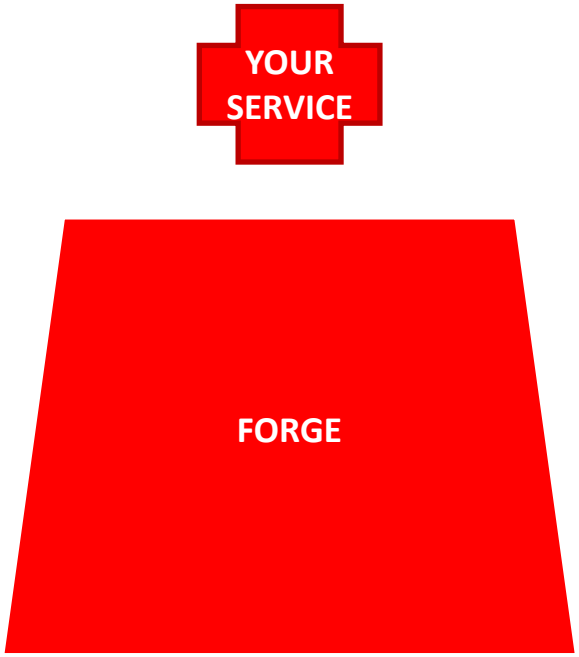
FORGE DEVELOPMENT PHASES

- Phase 1 (2012): Building up and securing financing
  - build-up of concrete implementation plans, launch technology development
  - launch of FORGE COMMUNITY and test set of services
  - agreements with key partners, first in kind contributions
  - financing
  - one full-time employee (FORGE director)
- Phase 2 (2013): Launching the service
  - technology in place
  - all FORGE services in place
- Phase 3 (2014-): Full-scale operation of the service



COOPERATION IN SERVICE DEVELOPMENT

1. What is yours service category to be developed and enriched in FORGE environment?



2. How TIVIT should further develop FORGE offering to meet your service development needs?

TIVIT – ENABLING ICT BASED GROWTH

www.tivit.fi

CONTACTS

- Contact information
  - emails: firstname.lastname@tivit.fi
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  - (Falcon Business Park, Otaniemi)

Global Information Technology – report

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The Networked Readiness Index 2010–2011

By World Economic Forum

Country/ Economy	Rank	Score	Rank within income group*	
Sweden	**1**	**5.60**	**HI**	**1**
Singapore	2	5.59	HI	2
Finland	3	5.43	HI	3
Switzerland	4	5.33	HI	4
United States	5	5.33	HI	5
Taiwan, China	6	5.30	HI	6
Denmark	7	5.29	HI	7
Canada	8	5.21	HI	8
Norway	9	5.21	HI	9
Korea, Rep.	10	5.19	HI	10
Netherlands	11	5.19	HI	11
Hong Kong SAR	12	5.19	HI	12
Germany	13	5.14	HI	13
Luxembourg	14	5.14	HI	14
United Kingdom	15	5.12	HI	15
Iceland	16	5.07	HI	16
Australia	17	5.06	HI	17
New Zealand	18	5.03	HI	18
Japan	19	4.95	HI	19
France	20	4.92	HI	20
Austria	21	4.90	HI	21
Israel	22	4.81	HI	22
Belgium	23	4.80	HI	23
United Arab Emirates	24	4.80	HI	24
Qatar	25	4.79	HI	25
Estonia	26	4.76	HI	26

Table 1: The Networked Readiness Index 2010–2011 and 2009–2010 comparison

	NRI 2010–2011				NRI 2009–2010	
Country/Economy	Rank	Score	Rank within income group*		Rank	Score
Sweden	**1**	**5.60**	**HI**	**1**	1	5.65
Singapore	2	5.59	HI	2	2	5.64
Finland	3	5.43	HI	3	6	5.44
Switzerland	4	5.33	HI	4	4	5.48
United States	5	5.33	HI	5	5	5.46
Taiwan, China	6	5.30	HI	6	11	5.20
Denmark	7	5.29	HI	7	3	5.54
Canada	8	5.21	HI	8	7	5.36
Norway	9	5.21	HI	9	10	5.22
Korea, Rep.	10	5.19	HI	10	15	5.14
Netherlands	11	5.19	HI	11	9	5.32
Hong Kong SAR	12	5.19	HI	12	8	5.33
Germany	13	5.14	HI	13	14	5.16
Luxembourg	14	5.14	HI	14	17	5.02
United Kingdom	15	5.12	HI	15	13	5.17
Iceland	16	5.07	HI	16	12	5.20
Australia	17	5.06	HI	17	16	5.06
New Zealand	18	5.03	HI	18	19	4.94
Japan	19	4.95	HI	19	21	4.89
France	20	4.92	HI	20	18	4.99
Austria	21	4.90	HI	21	20	4.94
Israel	22	4.81	HI	22	28	4.58
Belgium	23	4.80	HI	23	22	4.86
United Arab Emirates	24	4.80	HI	24	23	4.85
Qatar	25	4.79	HI	25	30	4.53
Estonia	26	4.76	HI	26	25	4.81

http://www.weforum.org/issues/global-information-technology

EVA 16.11.2011

- **EVA Analyysi: Suuri kuoppa – Suomen hyvät työllisyysluvut kätkevät tuottavuuden romahduksen**

- Suomalaisissa yrityksissä on finanssikriisin jäljiltä ennennäkemätön tuottavuusvaje. Vuonna 2010 työn tuottavuuden taso oli noin 13 prosenttia aiemman trendinsä alapuolella. Näin sanoo ETLAn tutkimusjohtaja Mika Maliranta tänään julkaistussa EVA Analyysissään ”Suuri kuoppa – Suomen hyvät työllisyysluvut kätkevät tuottavuuden romahduksen”.

  …

  Malirannan analyysi kertoo, että tilanne vaikuttaa surkealta, muttei aivan toivottomalta. Suomella on vahvuuksia, jotka auttavat sopeutumisessa. Ensinnäkin, taantumankin aikana talous jatkoi uudistumistaan ja Suomessa luotiin suhdannetilanteeseen nähden yllättävän paljon uusia työpaikkoja. **Toiseksi, Suomen sähkö- ja elektroniikkateollisuudessa vuosien mittaan rakentunut vahva ja monipuolinen osaamispohja antaa Suomelle hyvät lähtökohdat uudistua osaamisintensiiviseksi palvelutaloudeksi.**