

TiViT

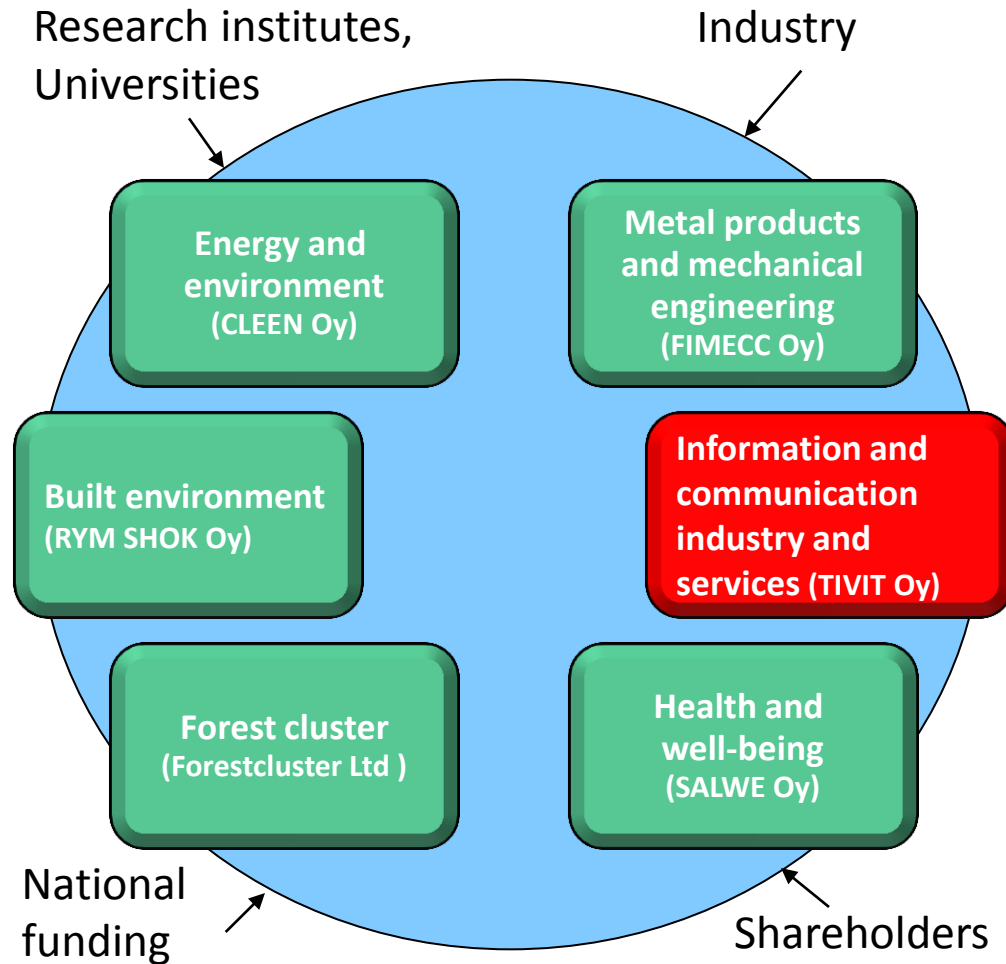
TIVIT PRESENTATION

Reijo Paajanen

CEO

Tieto- ja viestintäteollisuuden tutkimus TIVIT Oy

SHOK* NETWORK IN FINLAND 2011



TiViT

SHOK in the area of ICT:

- Private, non profit company
- Established in 2008
- Owned by industry, universities and other active Finnish innovation network players

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

- 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

- Core theme 2011...2015:
 - Enabling real time society

TIVIT RESULTS AND BUSINESS FORUM 12.4.2011

TIVIT RESULTS AND BUSINESS FORUM 12.4.2011

8.30 – 9.00	Registration and coffee (Hall G)			
9.00 – 10.15	MODULE 1 (Hall F): ECOSYSTEM VIEW AND ROLE OF AN ORCHESTRATOR Opening and setting the scene / <i>Reijo Paajanen, CEO, TIVIT Oy</i> Keynote Speaker Perspectives on interconnected global business ecosystems / <i>Saku Mäkinen, Professor, TUT</i> Experiences from the Bay Area / <i>Burton Lee, Lecturer, European Entrepreneurship and Innovation, Stanford; Managing Director, Innovarium Ventures</i>			
10.15 – 10.45	Coffee (Hall G)			
10.45 – 12.15	MODULE 2 (Hall F): BUSINESS RENEWAL AND TRANSFORMATION Keynote Speaker ICT Practices as Core Innovation Capability: a Comparative Look at the European and American Firms / <i>Burton Lee, Lecturer, European Entrepreneurship and Innovation, Stanford; Managing Director, Innovarium Ventures</i> The Ways to Transform a Large Company: What do we know about Effective Business Transformations / <i>Seppo Laukkanen, president, Lantern Oy, PHD Researcher, Hanken</i> Ecosystem Creation Support by TIVIT / <i>Jaakko Talvitie, project & development manager, Business Concepts, TIVIT Oy</i>			
12.15 – 13.15	Lunch (Hall E)			
13.15 – 13.30	TIVIT RESULTS / <i>Pauli Kuosmanen, CTO, TIVIT Oy (Hall F)</i>			
13.40 – 15.30	TIVIT Program presentations 20 minutes each			
	FUTURE INTERNET (room 103)	DIEM (room 104)	NEXT MEDIA (room 108)	CLOUD SOFTWARE (room 110)
13.40 – 14.00	<i>Improved end-to-end connectivity for energy constrained and challenged environments</i>	<i>DIEM – Creating applications using open embedded data</i>	<i>eReading – Evolution or Revolution</i>	<i>Cloud of Things Business case</i>
14.10 – 14.30	<i>Future Internet</i>	<i>Mobile Mixed Reality in DIEM</i>	<i>Next Media program – Transforming the media Experience Methods for Multimodal Content Analysis of Media</i>	<i>Cloud Security</i>
14.40 – 15.00	<i>Future Internet</i>	<i>Building Automation in DIEM</i>	<i>Hyperlocal Content: Do or Die</i>	<i>Cloud Software Program</i>
15.10 – 15.30	<i>Future Internet</i>	<i>Interoperability in Smart Exercise Environments</i>	<i>Dynamic Media Business Models and Internationalization of Media Services</i>	<i>Cloud Case Vaadin</i>
15.15 – 15.45	Coffee (Hall E)			

BUSINESS FORUM

RESULTS

TiViT

**THREE KEY DRIVERS IN ICT -
CREATING NEW OPPORTUNITIES**

The Tivoli logo is rendered in a bold, white, sans-serif font. The letters 'i' and 'i' are lowercase, while 'T', 'V', and 'T' are uppercase. The background is a solid orange color with a faint, repeating pattern of overlapping diamond shapes that create a sense of depth and movement, particularly on the left side.

TiViT

GROWTH OF DATA AND PERFORMANCE

The Zettabyte Scale

1 Petabyte

1,000 Terabytes or
250,000 DVDs

1 Exabyte

1,000 Petabytes or
250 million DVDs

1 Zettabyte

1,000 Exabytes or
250 billion DVDs

1 Yottabyte

1,000 Zettabytes or
250 trillion DVDs

200 Terabytes

A digital library of all books ever written in any language

100 Petabytes

The amount of data produced in a single minute by the new particle collider at CERN

5 Exabytes

A transcript of all words ever spoken

100 Exabytes

A video recording of all the meetings that took place last year across the world

150 Exabytes

The amount of data that has traversed the Internet since its creation

175 Exabytes

The amount of data that will cross the Internet in 2010 alone

66 Zettabytes

The amount of visual information conveyed from the eyes to the brain of the entire human race in a single year

20 Yottabytes

A holographic snapshot of the earth's surface

EXPANSION OF DIGITAL DATA

The Digital Universe 2009 – 2020

Machines creating data

Growing by a Factor of 44

Chaos vs. organization

Human creation

Ontologies and metadata

Architectures

Analysis

2020
35 ZB*

Value adding

New data categories

Intelligence

2009
0.8 ZB*

Server farms

Data ownership

Range of processing devices

Sensors

Source: IDC Digital Universe Study, sponsored by EMC, 10/2010
Data security and privacy

>>> CREATION OF HUGE DATA RESERVES

The World is Getting Smarter – As we build better *service systems*
SSME* educates people about *complex systems that serve customers*
 ...about a diverse *ecology* of types of *service systems* that all interact



Smart traffic systems



Intelligent oil field technologies



Smart food systems



Smart healthcare



Smart energy grids



Smart retail



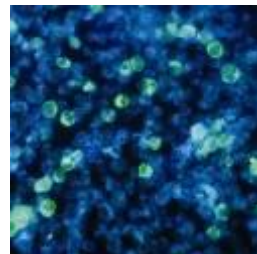
Smart water management



Smart supply chains



Smart countries



Smart weather



Smart regions



Smart cities

Data is the basement for every smart and green industry!

* **SSME= Service Science, Management and Engineering**

The Tivoli logo is a stylized, white, leaf-like shape with a grid pattern, positioned in the top left corner of the slide. The background is a solid orange color with a faint, larger version of the Tivoli logo pattern.

TiViT

SPEED OF DIGITAL BUSINESS

SPEED OF DIGITAL BUSINESS - EXAMPLE

Facebook says future is chat not email

- November 15, 2010 5:45pm [by Chris Nuttall](#)
- Facebook founder Mark Zuckerberg said the future of messaging was online conversations not email, as he unveiled an upgraded browser-based email and messaging service at a news conference in San Francisco on Monday.
- **With more than half a billion members**, such a service could turn Facebook into a serious webmail challenger to Microsoft, Yahoo and Google **overnight**.

...



Wake up and enjoy new services!

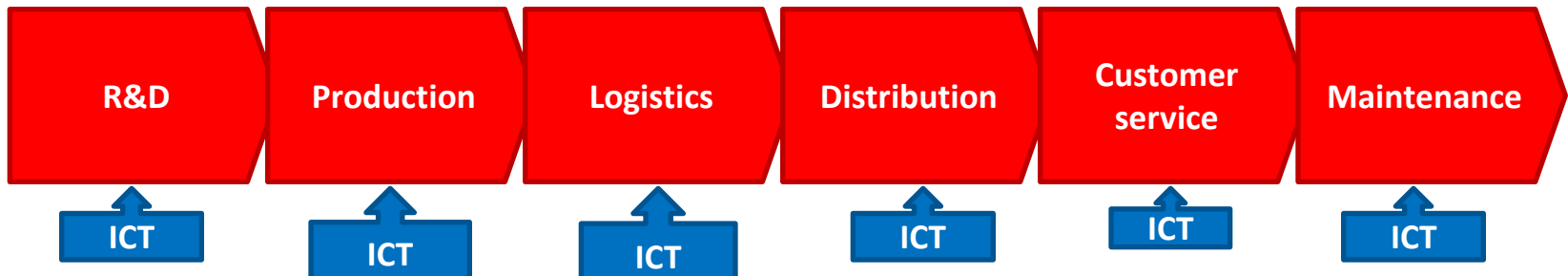
Source: <http://blogs.ft.com/techblog/2010/11/facebook-gets-webmail-live-news-conference/>

BUSINESS TRANSITION

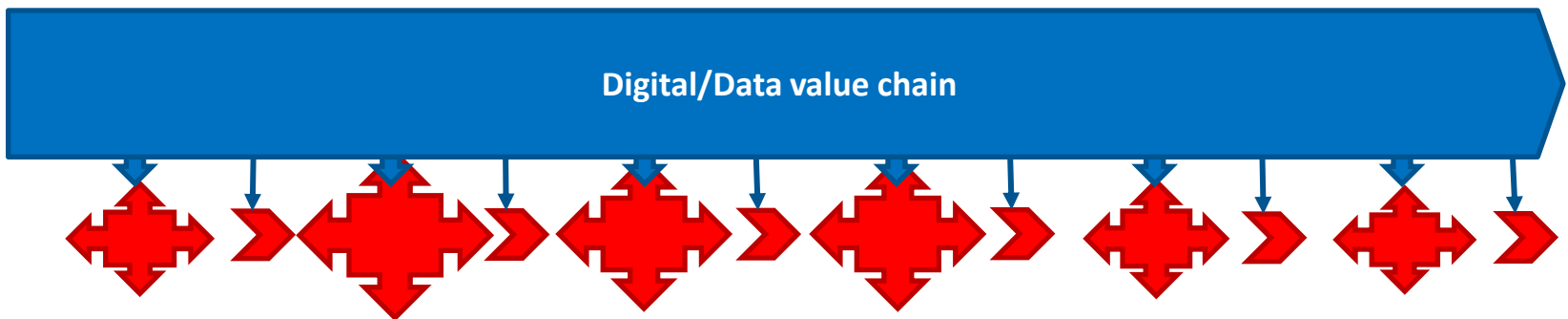
- Physical business:
 - R&D phase > production facility > logistics > distribution network > customer service > maintenance
 - New business/product creation requires changes in every part of the chain
 - This is extremely slow, complex and expensive process
- Digital business:
 - R&D phase > run the global service in the cloud
 - Global coverage over night, expense depends on the real usage
- >>> Digital business performance is overwhelming
- >>> Megaⁿ business transition

Megaⁿ business transition illustration

Physical business
Digital business



Computers have been used to help and to increase the productivity in the physical business



New paradigm: Design first the digital business + Build/outsource necessary physical elements

BUSINESS ENVIRONMENT MEGATRENDS

- Sustainability and new regulations (e.g. waste mgt, energy)
- Scarce natural resources (oil & energy, raw materials, water...)
- Population growth & urbanization
- Greater consumer awareness and knowledge, increased product and service customization, increased supply chain insight, increased customer involvement in product/service development
- Digitalization
 - Internet from year 2002 to year 2012 : 75 times larger
 - Smart devices from 60 billion /2010 to 200 billion / 2020 => Embedded digitalization
 - Services are accessible any time, anywhere and by anyone
- Global flow of goods, capital and information (McKinsey)
- From production era to service and solution society and to information and knowledge society

SUMMARY

- The growth in physical business is getting harder
- The growth in digital business is getting easier and is accelerating

TiViT

SERVICES

Service Worlds: Economics and Social Science

Global change in what people do and how value is created

Ten Nations

Total 50% of World Wide Labor

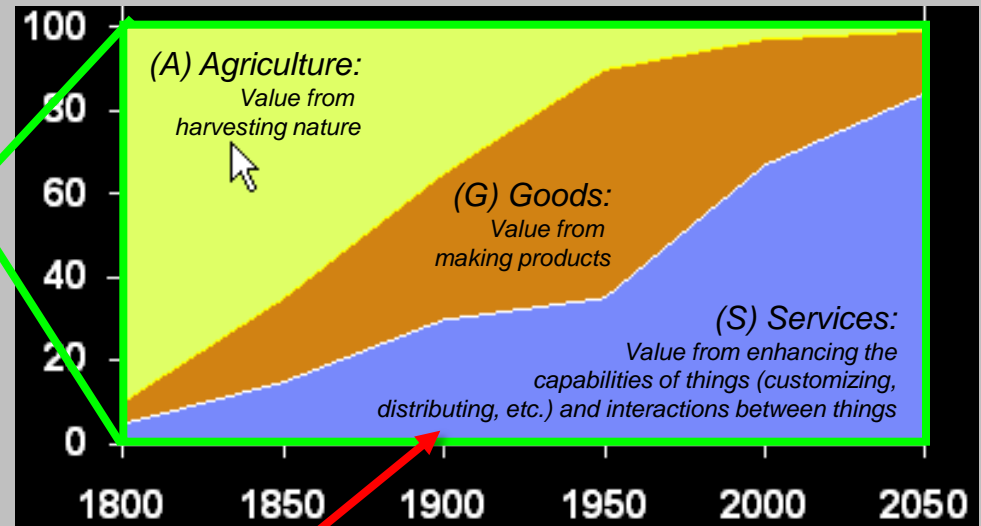
A = Agriculture, G = Goods, S = Services

Nation	Labor %	A %	G %	S %	Service Growth
China	21.0	50	15	35	191%
India	17.0	60	17	23	28%
U.S.	4.8	3	27	70	21%
Indonesia	3.9	45	16	39	35%
Brazil	3.0	23	24	53	20%
Russia	2.5	12	23	65	38%
Japan	2.4	5	25	70	40%
Nigeria	2.2	70	10	20	30%
Bangladesh	2.2	63	11	26	30%
Germany	1.4	3	33	64	44%

1980-2005
PC Age

US Employment History & Trends

United States



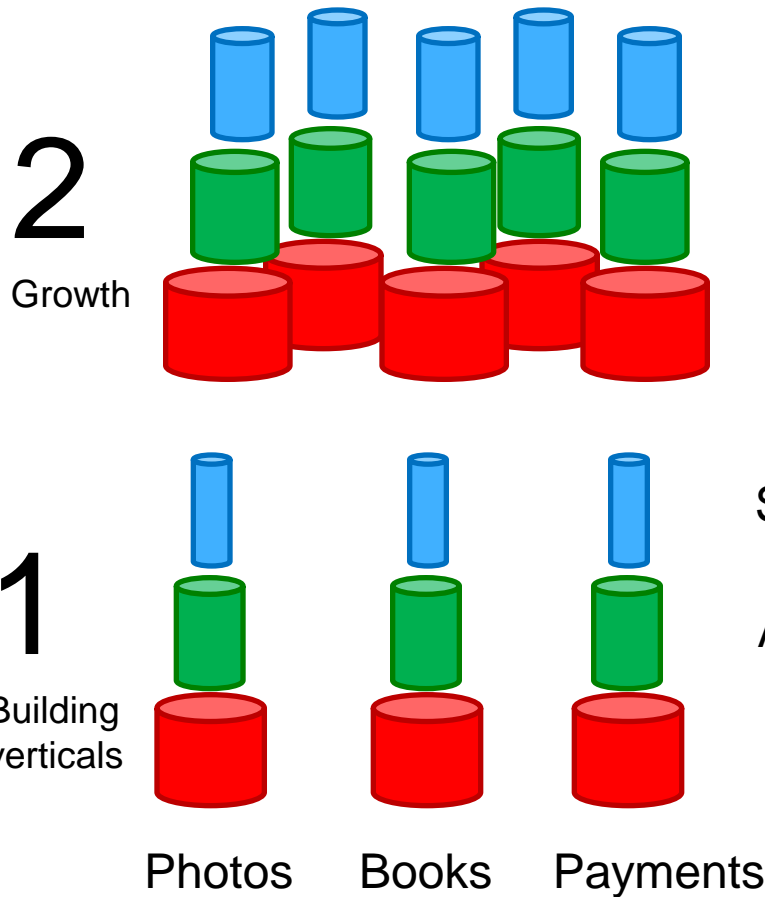
The largest labor force migration in human history is underway, driven by global communications, business and technology growth, urbanization and low cost labor

International Labor Organization

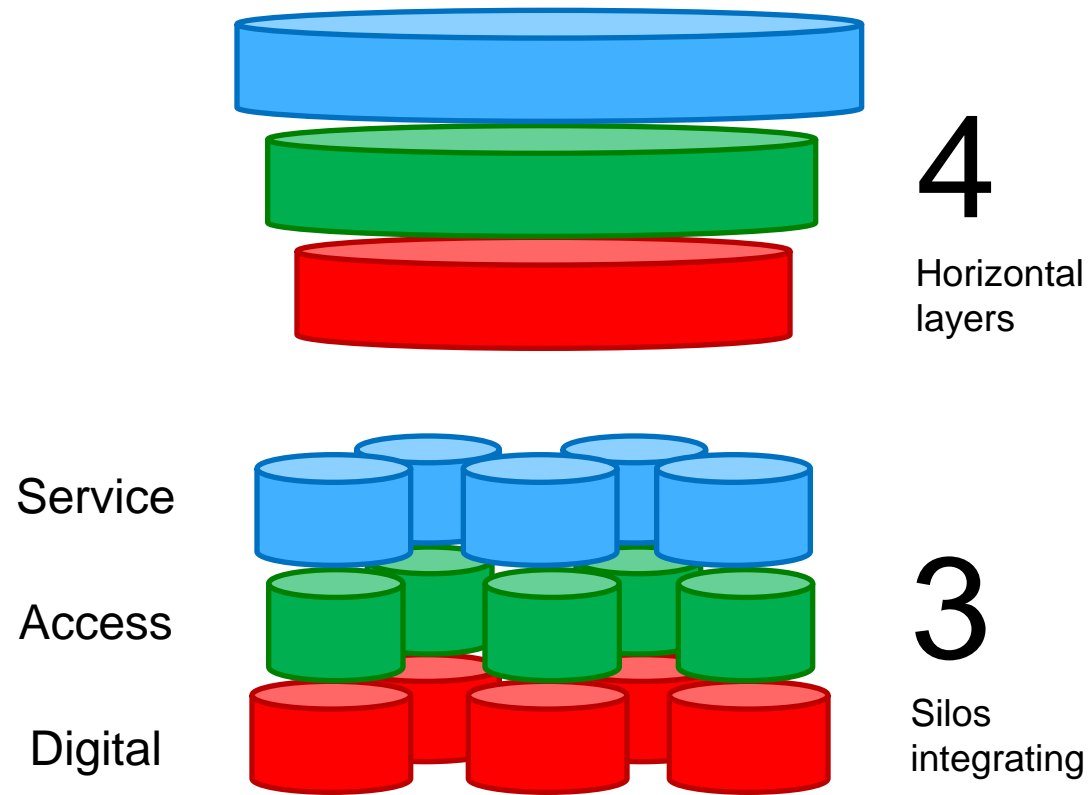
Digital services can be operated globally from any corner of the world

DOMINATING TRENDS AND POTENTIAL DISCONTINUITIES

- TRENDS



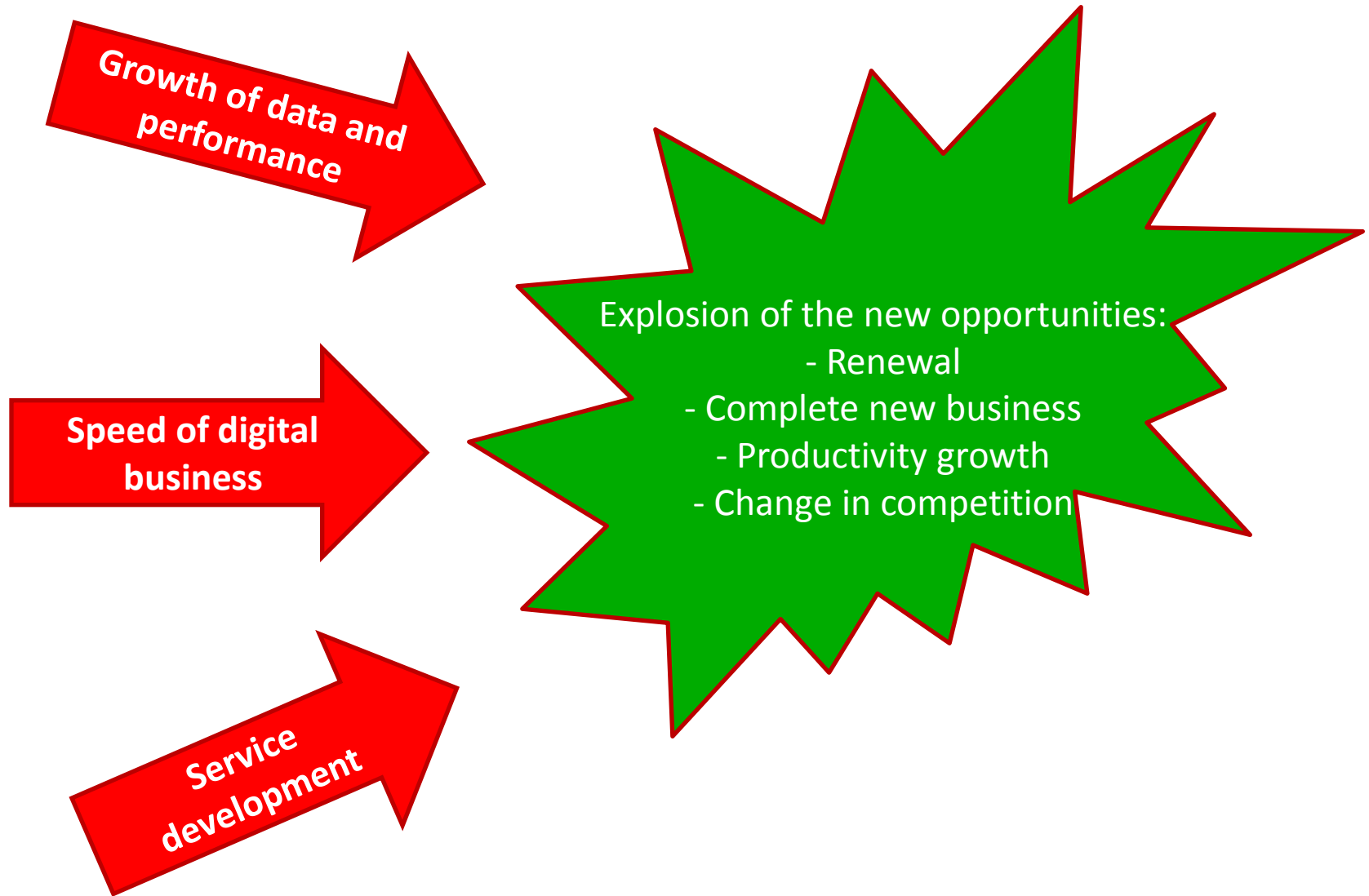
- DISCONTINUITIES



TiViT

SUMMARY

SUMMARY



The TIVIT logo is rendered in a bold, white, sans-serif font. The letters 'i' and 'i' are lowercase, while 'T', 'V', and 'T' are uppercase. The background is a solid orange color with a faint, large-scale grid pattern that appears to be a stylized representation of a globe or a network.

TiViT

TIVIT – ENABLING THE ICT BASED GROWTH

www.tivit.fi