



## Cloud Software Program – SRA overview



TIVIT Cloud Software Program (ICT SHOK) , 16.3.2012  
Tivit, Yritysten tutkimus- ja kehittämisrahoitus,  
Päätös 424/10, 07.05.2010, Dnro 2902/31/2009  
[www.cloudsoftwareprogram.fi](http://www.cloudsoftwareprogram.fi) [www.tivit.fi](http://www.tivit.fi)

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Centre for Science, Technology and Innovation in the field of ICT).

# Summary

## RDI

- Scalable cloud platforms and application enabling solutions are needed
- Also big enterprises need to revise their strategies due to the emergence of cloud services
- Flexibility and productivity of the cloud software and service creation process is a must
- "Instant business from an idea" may proceed – the time from research to business will shorten anyways
- Security, trustworthiness, reliability, accessibility and usability of the cloud are important RDI challenges

## Business opportunities

- Smaller businesses and software developers will find new room in the cloud
- New cloud-enabled ecosystems will need to demonstrate their value creation and capture promise
- The roles of actors in a cloud ecosystem are overlapping, the value core is not necessarily straightforward to identify
- Security, trustworthiness, reliability, accessibility and usability of the cloud are important business enablers
- The users and their "freedom" are, if possible, even more important in the cloud
- SMEs will benefit from the cloud a lot

# Trends

- Global players will affect developments ... once again
  - Apple, Microsoft, Google – cloud strategies
- Newcomers – or are they such any more?
  - Facebook ja Amazon, ... VMWare, ... Rackspace
- Open code and especially open interfaces may change the cloud landscape
  - Open and closed Web applications
  - HTML5 developments
- Cloud development environment – flexibility, speed, openness
- Security and trustworthiness
- User experience ... usage needs and scenarios
  - "Freedom" of the users will create the "power"
- Technological discontinuities?
  - Browser as a universal application platform
  - Cloud to the replace PC by 2014 (Garter, 2012)?
  - Mobile payment
  - Data to knowledge to intelligence to value
  - Cloud data ... green IT break troughs

## Potential surprises

- Cloud 1-2-3 alias cloud becomes a commodity very rapidly
- Software products become "old" overnight
  - Applications disintegrate into the cloud
- Open code and interfaces win over closed applications and platforms
  - Radically new earning logic for software-enabled services, platforms
- Community applications saturate
  - Facebook x.0 is needed because of overloading of the current architecture
- Peace in the battle of mobile ecosystems
  - Frontiers will settle down or clear winners will emerge
  - Mobile platforms are seen not that important after all
- The new era of software development will get stalled
  - Agile and lean do not proceed or produce the required business benefits
  - The legacy party wins and the 30-year war of software development methods continues

## Market outlooks – 1

- “Gartner Says the **Personal Cloud Will Replace the Personal Computer as the Center of Users' Digital Lives by 2014**. The reign of the personal computer as the sole corporate access device is coming to a close, and by 2014, the personal cloud will replace the personal computer at the center of users' digital lives, according to Gartner, Inc.
- Gartner analysts said the personal cloud will begin a new era that will provide users with a new level of flexibility with the devices they use for daily activities, while leveraging the strengths of each device, ultimately enabling new levels of user satisfaction and productivity.
- However, it will require enterprises to fundamentally rethink how they deliver applications and services to users.
- Emerging cloud services will become the glue that connects the web of devices that users choose to access during the different aspects of their daily life.
- Many call this era the post-PC era, but it isn't really about being 'after' the PC, but rather about a **new style of personal computing that frees individuals** to use computing in fundamentally new ways to improve multiple aspects of their work and personal lives, Mr. Kleynhans said.

Gartner, 2012

## Market outlooks – 2

- “Cloud computing has proved to be a new avenue for revenue generation in the existing stagnant markets for **telecommunication operators**. From the business perspective, the essence of a telecommunication operator is to manage huge assets, share them among a large number of customers, and offer pay-per-user services. Cloud computing, which is similar to offering telecommunication services, acts as a natural extension to telecommunication operator's core skill base.
- The traditional network revenue is not increasing at the expected rate. However, cloud computing has helped in accessing new markets and improving the revenue generation. The cloud service is completely network dependent. The efficiency of network infrastructure plays a vital role in offering such services. As major telecommunication operators have a global network infrastructure, it is beneficial for them to enter the cloud market. In addition, **cloud computing would result in enhanced customer relations for the telecommunication operators**, as it enables to extend their service offerings from data transfer to storage services, computing and hosting services, and private cloud offerings with better security solutions under their brand name.
- However, the telecommunication operators have a disadvantage in terms of the IT expertise, for which they either need to partner with another IT operator or create an expertise at their work station.”

Frost & Sullivan, 2011



## Market outlooks – 3

- **“Smaller businesses benefit from cloud adoption.** Overall, cloud business models offer adopters significant savings on capital expenditure. For all ICT services migrated to the cloud, companies neither have to own physical infrastructure nor employ extra IT staff. They pay only for the used resources. Also, they do not face restrictive capacity issues due to the flexibility and scalability that the cloud offers its customers. This allows customers to build as much capacity and bandwidth as they are willing to pay for. Moreover, there are additional investment drivers for small and medium businesses. Cloud adopters gain access to world-class technologies while reducing capital expenditures and minimizing the need to constantly update systems. They also gain access to world-class data centres with storage and backup capabilities that formerly were too costly to handle in-house.
- They also can increase their competitiveness by accessing IT solutions that before were unthinkable for businesses of their size. Finally, they are able to strengthen their security position, which is currently a hot topic.
- Because of cloud computing, **modernization and innovation are increasingly affordable and accessible for smaller enterprises.** The cloud is democratizing access to new technologies. With cloud services, SMBs can increase their adoption of new technologies and limit expenditures for internal IT expertise and other resources.”

Frost & Sullivan, 2012

## Market outlooks – 4

- “Developing a European Cloud Computing Policy. Cloud computing can reduce costs and energy use through more efficient use of hardware and software. According to the E.U., cloud computing is expected to generate **35 billion Euros in revenue** for service providers in Europe by 2014.
- Neelie Kroes, vice president of the European Commission and commissioner for digital agenda, said **the aim is to make Europe not only cloud-friendly, but cloud-active**. Kroes said smaller companies will benefit most from cloud computing, but lower spending power and inability to negotiate with cloud suppliers are key barriers to adoption. Public sector organisations also face other [cloud-related] challenges: Lack of international standards; Ownership of information; Compliance with government regulations; [and] Portability and interoperability.
- A main point that emerged from recent consultations is that cloud computing can be a low-cost and energy-friendly alternative to existing systems. Although the data protection regulations have become stronger to suit the dynamic ICT world, cloud computing will only be accepted with a large-scale adoption. The public sector can harness buying power and a coordinated IT approaches with a more integrated and harmonised cloud system. Once the system is in place, improved operational efficiency and citizens’ confidence and trust would help cloud providers offer standardised services to other organisations. Encouraging the adoption of cloud in the public sector is an essential step toward establishing a ‘cloudactive’ European Union. It would set the trend toward a cloud economy.” Frost & Sullivan, 2012



## Finnish perspective

- IT business in Finland = many bigger and small verticals that need IT and SW in their products and services + rather few big IT companies + very many small SW companies + rather many public organizations making use of IT and SW.
- Not many consumer IT and SW businesses.
- Outsourcing and streamlining have not demolished the domestic SW and IT businesses.
- IT service centers are emerging.
- ⇒ Cloud in verticals
- ⇒ SME cloud suppliers and users
- ⇒ Mobile cloud – a question mark?
- ⇒ Public organizations – role models of cloud users?

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PILVIPALVELUT ■ Aleksis Kolehmainen, 8.3.2012, 21:15

### Pilvipalvelut luovat miljoonia uusia työpaikkoja, mutta uhkaavatko ne it-alan töitä?

Pilvipalveluiden ottaminen käyttöön luo 14 miljoonaa uutta työpaikkaa maailmanlaajuisesti vuoteen 2014 mennessä. Näin arvioi tutkimusyhtiö IDC tuoreesta [selvityksessä](#), jota rahoitti Microsoft.

Suurin osa näistä uusista työpaikoista syntyy kehittyviin maihin. Pelkästään Kiinaan ja Intiaan arvioidaan tulevn 6,8 miljoonaa uutta työpaikkaa.

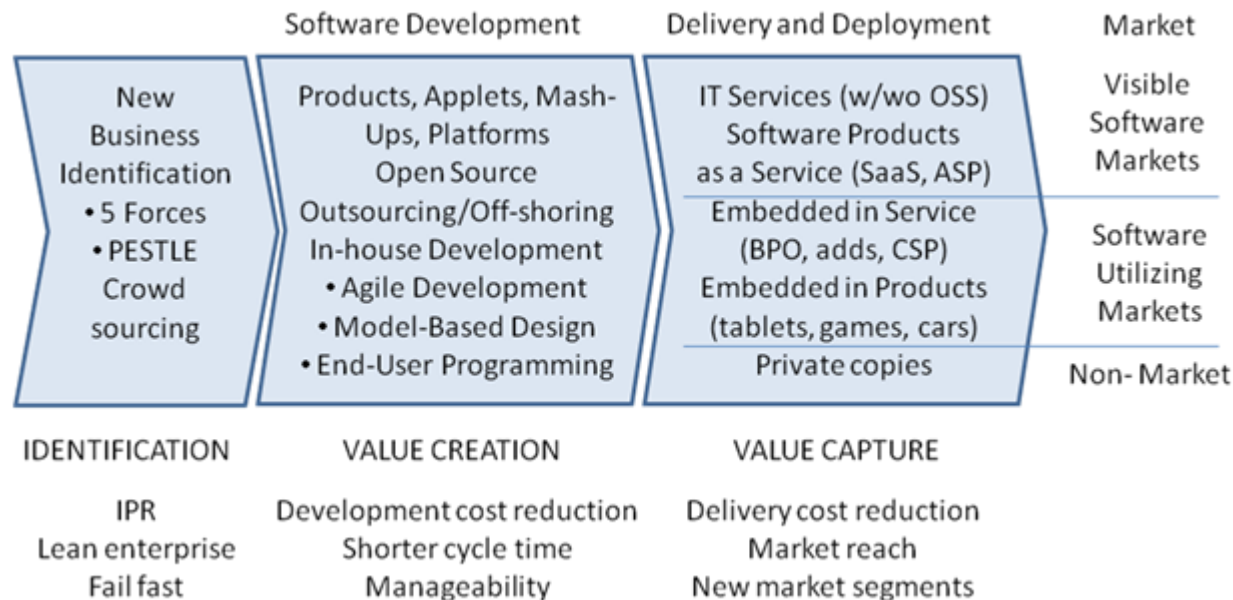
Tätä perustellaan etenkin sillä, että kehittyvien talouksien yrityksiä eivät sido vanhojen niin sanottujen vanhojen legacy-järjestelmien taakka, mikä voi pidätellä suuryrityksiä muualla maailmassa. Niinpä näiden maiden yritykset voivat selvityksen mukaan siirtyä suoraan pilvipalveluiden käyttöön.

Selvityksessä ei oteta suoraan kantaa Suomen työmarkkinoihin, mutta sen [mukaan](#) esimerkiksi Ruotsissa työpaikkojen määrä kasvaa pilvipalveluiden ansiosta 135 prosenttia vuosina 2012-2015 ja Tanskassa 133 prosenttia.

IDC:n tekemää selvitystä on arvosteltu verkossa. Esimerkiksi IT Worldin toimittaja Kevin Fogerty [huomauttaa](#), että todennäköisesti suurin osa selvityksen mainitsemista uusista työpaikoista syntyy työtehtäviin, jotka eivät liity tietotekniikkaan vaan pikemminkin liiketoimintaan. Hänen mukaansa pilvipalvelut pikemminkin automatisoivat it-ylläpitoon liittyviä tehtäviä.

IDG News Service

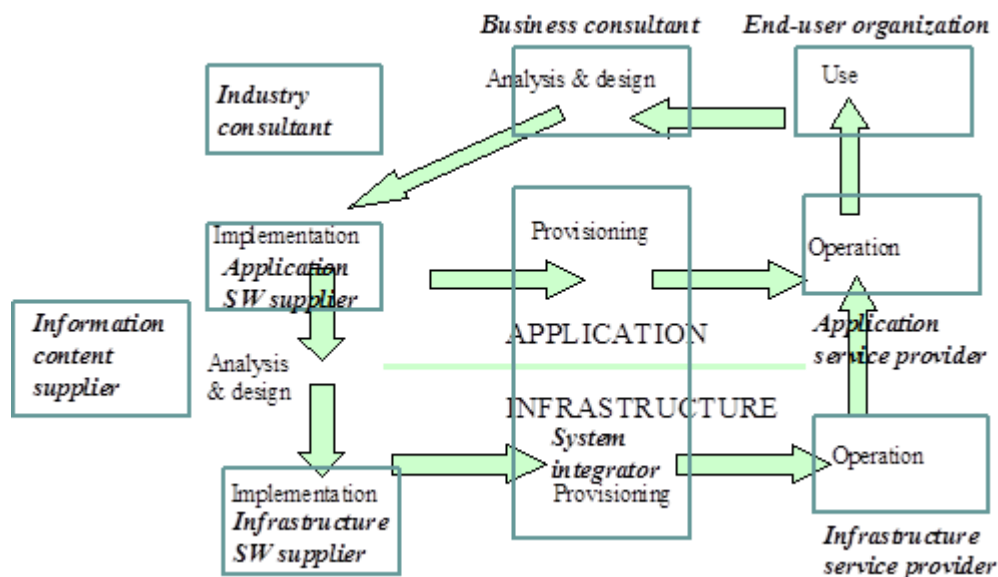
# Value creation landscape



Sector	Size	Annual growth
SW Industry	229 Mrd\$ (2010)	3.1%
IT Services and SW	625 Mrd€	1.0%
Telecommunications	1 400 Mrd€ <sup>1)</sup>	2.9%
Internet Marketing Add-based services (Global Marketing ~400 Mrd)	30-35 Mrd\$ (09)	~20%
Games	42 Mrd\$ (07)	10%
Music & Movies	66 Mrd\$ (10)	1%

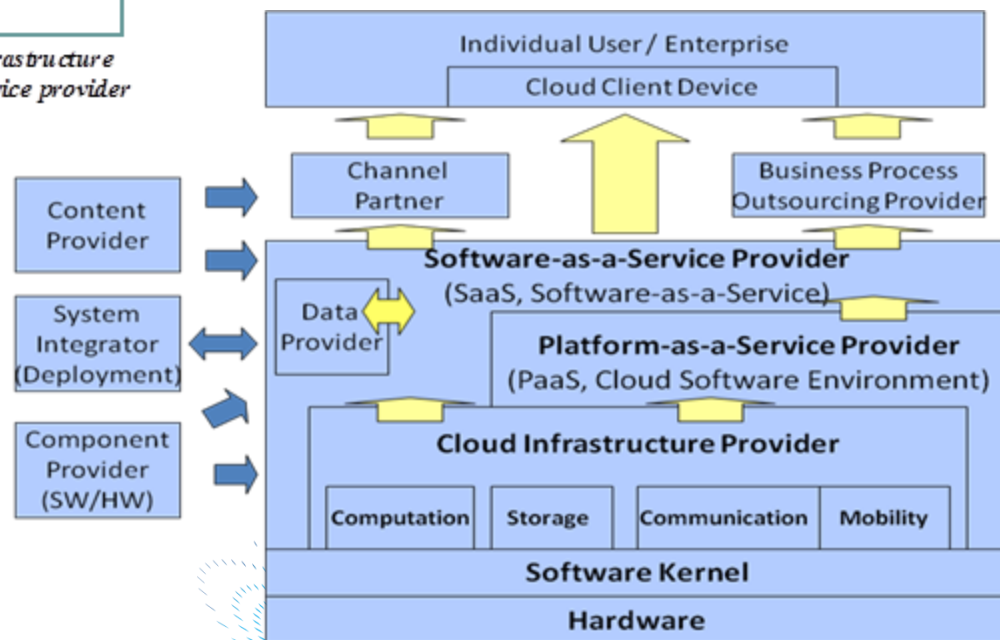
1) Embedded software included here, no data on other verticals in this regard.

# Change of the value creating ecosystems



(1990) ... 2000 ... 2010

2011 ... 2021 ... (2031)



# Roles in value creation

- **Apps developers and service providers**
  - Earning logic
  - Service automation
  - Big SaaS solutions vs. small clouds
- **Communication service providers**
  - Bit pipeline vs. service integrator?
  - Value-adding apps and services?
  - Security, trustworthiness, price and availability of the services
- **Platform service providers**
  - An essential role in all cloud cases
  - Very competitive business
  - Vertical specialization vs. horizontal offering
  - Value-added services play a role
- **Infrastructure and other service providers**
  - Businesses "filling in the holes"
  - Process-related services?
- **End-users**
  - Freedom, freedom, freedom – the digital me and all my friends and soul mates

# Strategic challenges and opportunities

- The change of the primary (and secondary) software industry cannot be escaped
- It is all about data and its creation, management and usage
- Mainly only the Web is needed
- Many value-added services will emerge
- Supporting methods, tools and processes will be required
- We, the users, will be "free"
- Finnish special opportunities?
  - Cloud verticals
  - Cloud security & trustworthiness
  - Agile and lean cloud
  - Web 3.0 – prosumers and the net
  - Towards the ubiquitous cloud (ubicom + communication + digital services)



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## Cloud Software Program

### PREFACE

"The Cloud Software program (2010-2013) aims to significantly improve the competitive position of Finnish software intensive industry in global markets. According to the 2009 survey most significant factors of competitiveness are: **operational efficiency, user experience, web software, open systems, security engineering and sustainable development**. Cloud software ties these factors together as software increasingly moves to the web. Cloud Software program especially aims to pioneer in building new cloud business models, lean software enterprise model and open cloud software infrastructure."

Janne Järvinen, Focus Area Director

