



Security and Privacy – things to consider when moving to the cloud

Janne Järvinen - Director, External R&D Collaboration
GN3 Innovation workshop, 11.10.2011

F-Secure – operating globally for over 20 years



Founded in 1988

22 country offices with 800+ employees
and a presence in more than 100 countries



Research and development centers in Finland,
France, and Malaysia

World-class anti-malware research and
operations



Strong solution portfolio covering
both consumers and business

Pioneer in Security as a Service and mobile
security

More than
200 operator
partners globally
and over **100** m
broadband
subscribers



2015

Tomorrow's communication world



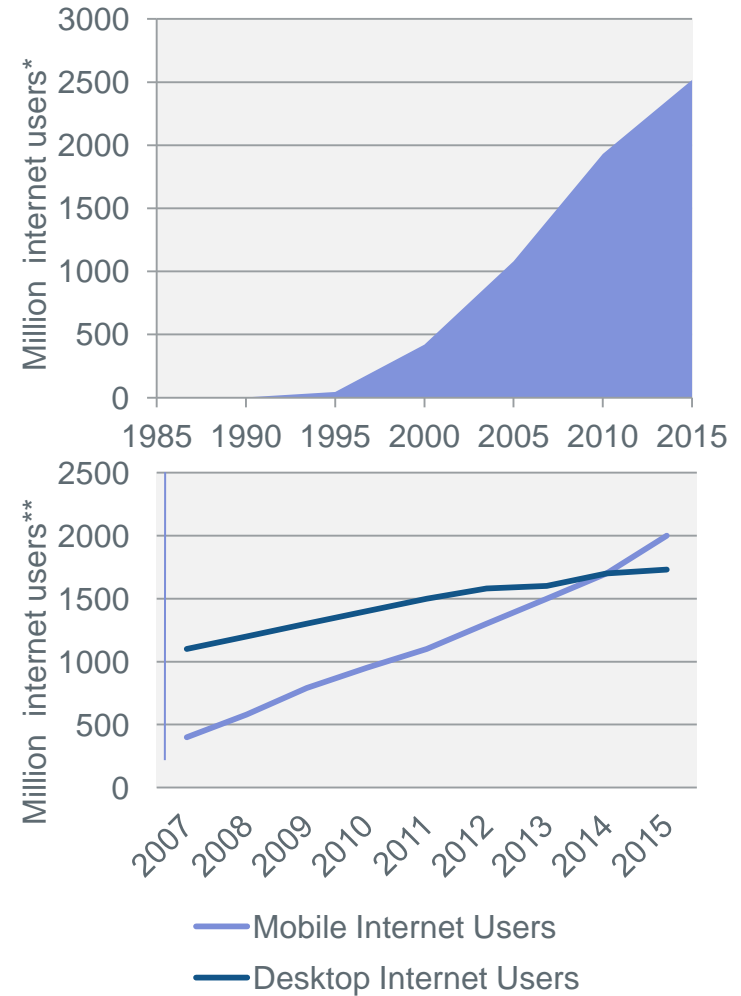
In 2015 there will be over **2.5B Internet users**



In 2015 there will be over **5B cell phones** in use



In 2015 the **web is mobile**



Source: *eTForecasts, **Morgan Stanley Research, 2010



Let's ask the Expert

Google

Google Search

I'm Feeling Lucky

Is it really so bad?



cloud computing is

cloud computing **issues**

cloud computing is **the future**

cloud computing is **bad**

cloud computing is

cloud computing **issues and challenges**

cloud computing is **not new**

cloud computing is **stupid**

cloud computing is **dangerous**

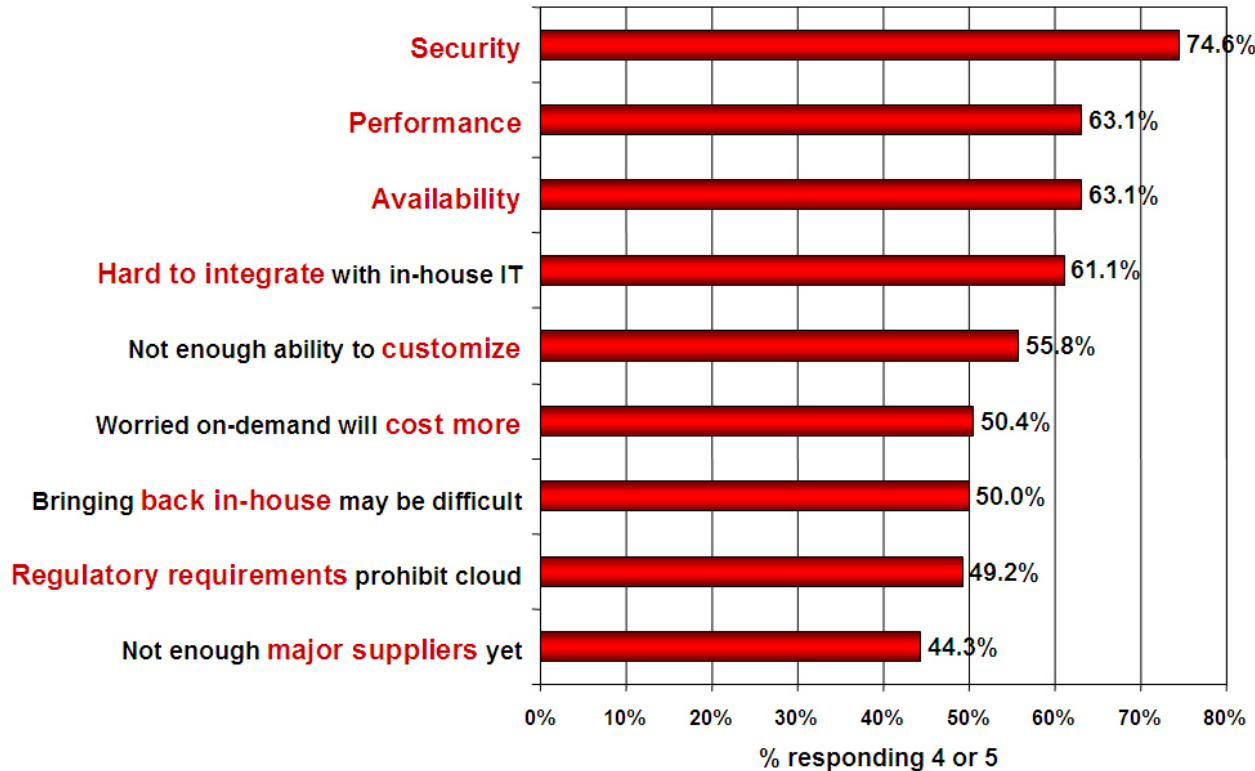
cloud computing is **evil**

cloud computing is **nothing new**

Google Search I'm Feeling Lucky

- ISSUES**
- BAD**
- ISSUES AND CHALLENGES**
- STUPID**
- DANGEROUS**
- EVIL**
- NOTHING NEW**

New things are always a concern...



Security
Performance
Availability

Source: IDC Enterprise Panel, August 2008 n=244

SAAS

Software as a Service

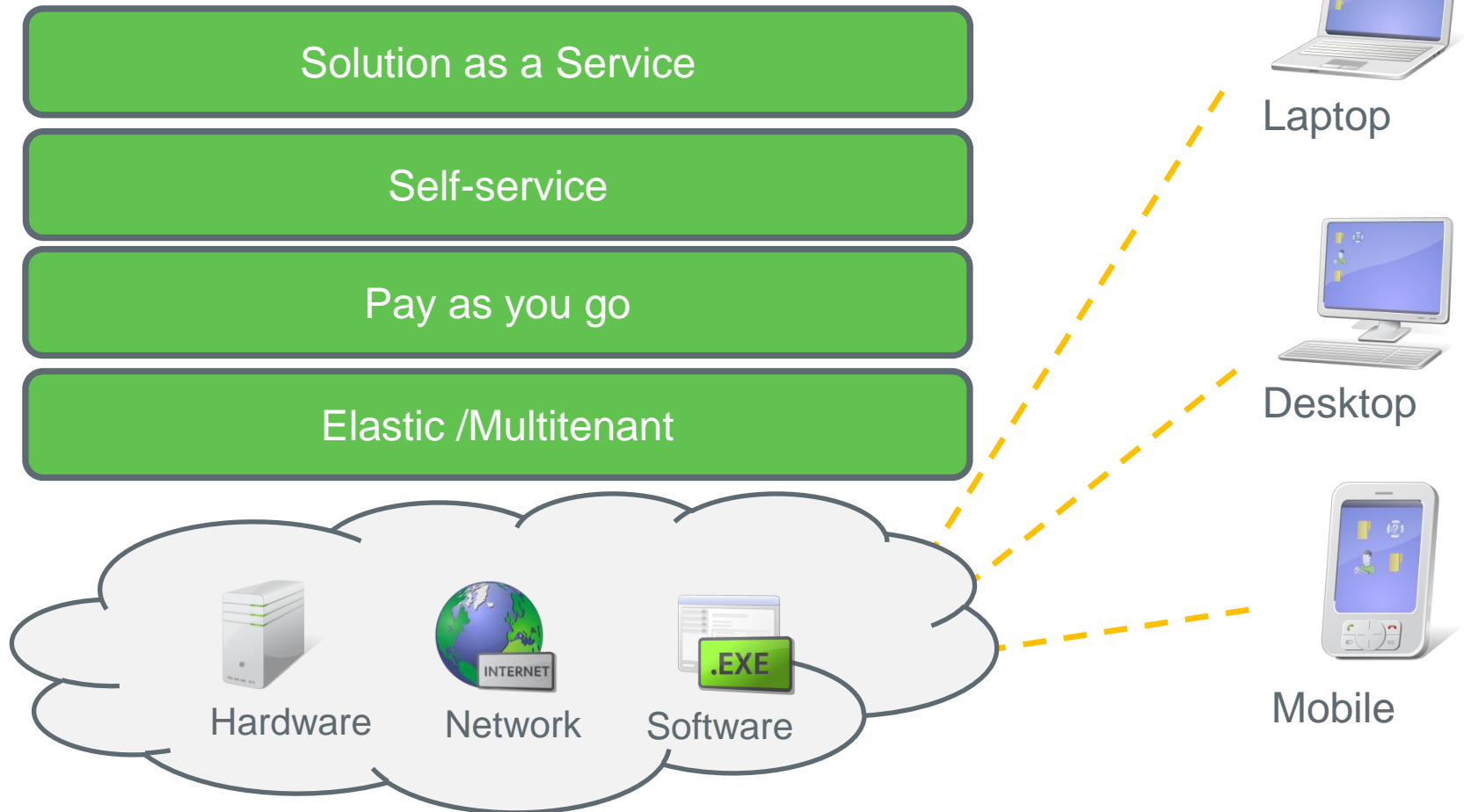
PAAS

Platform as a Service

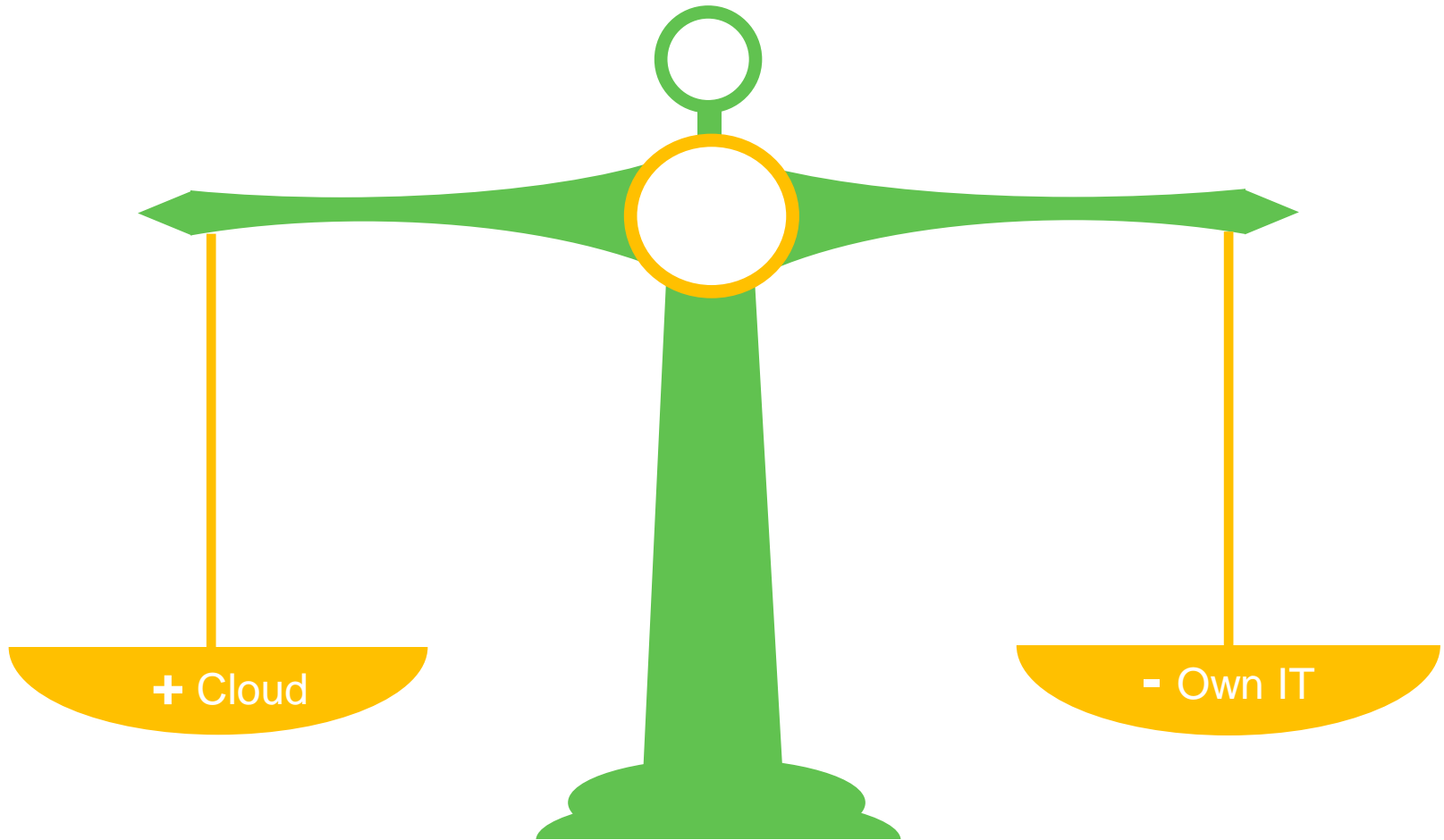
IAAS

Infrastructure as a Service

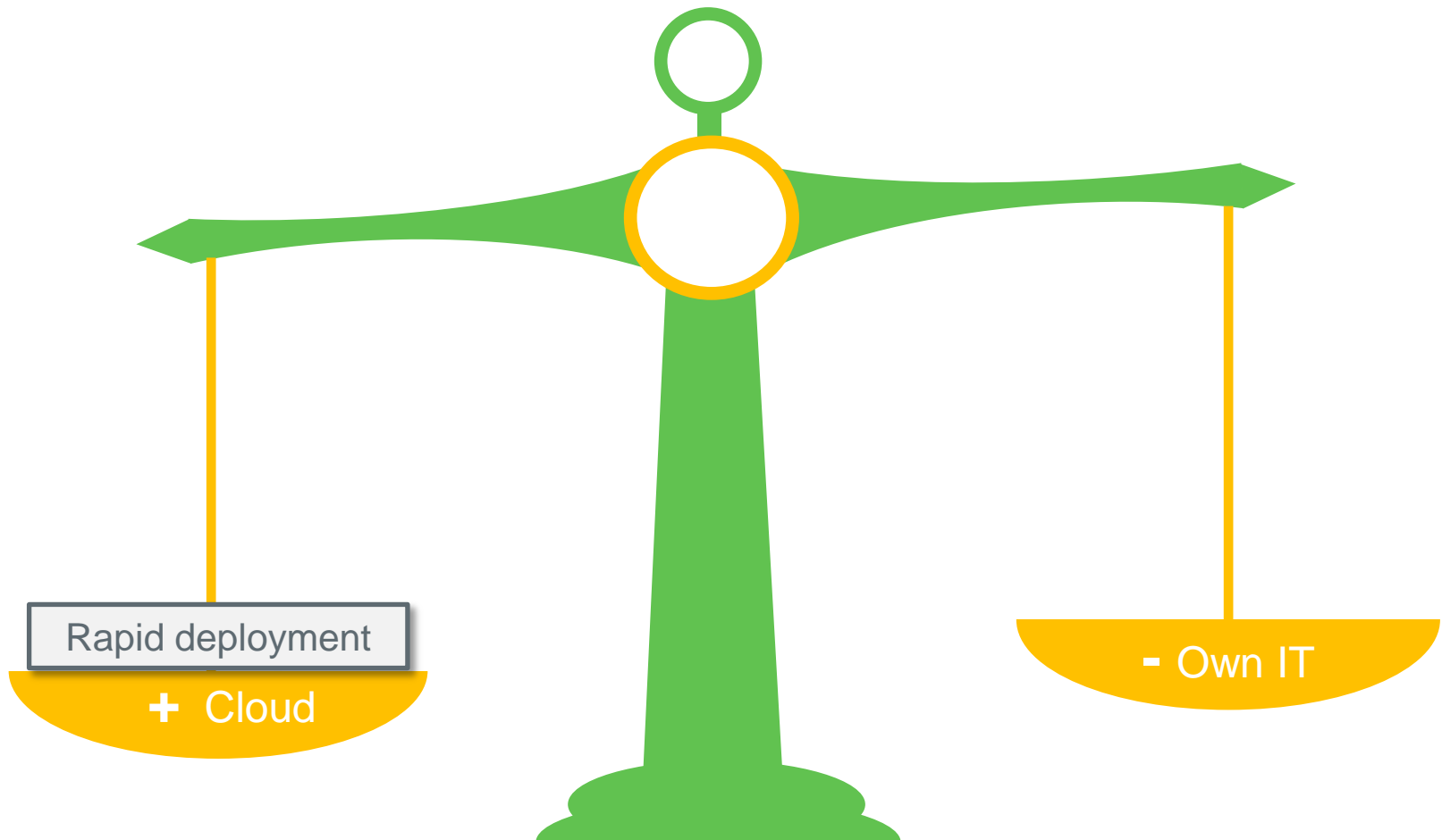
What are cloud services all about?



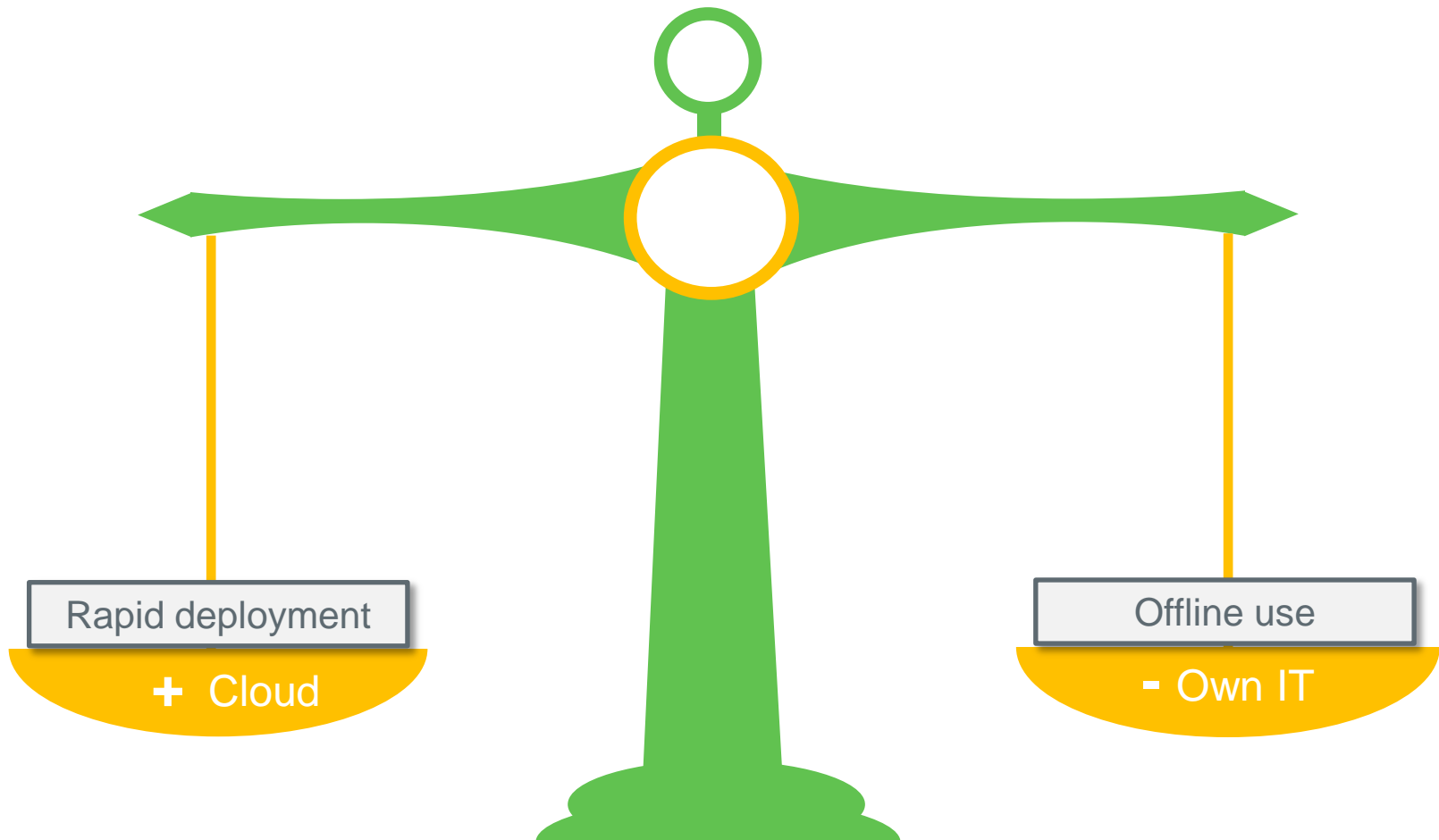
Self-produced service or Cloud?



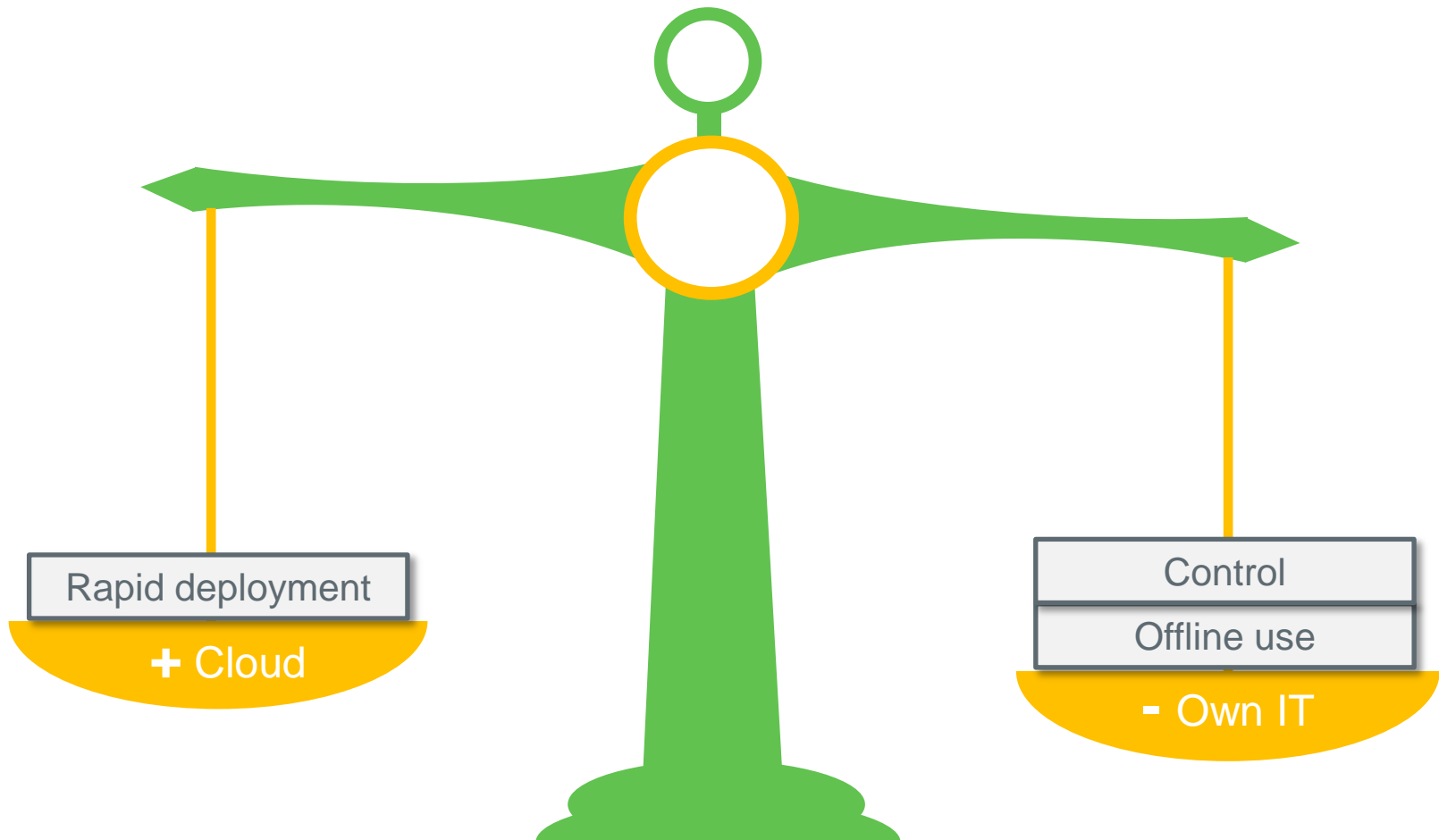
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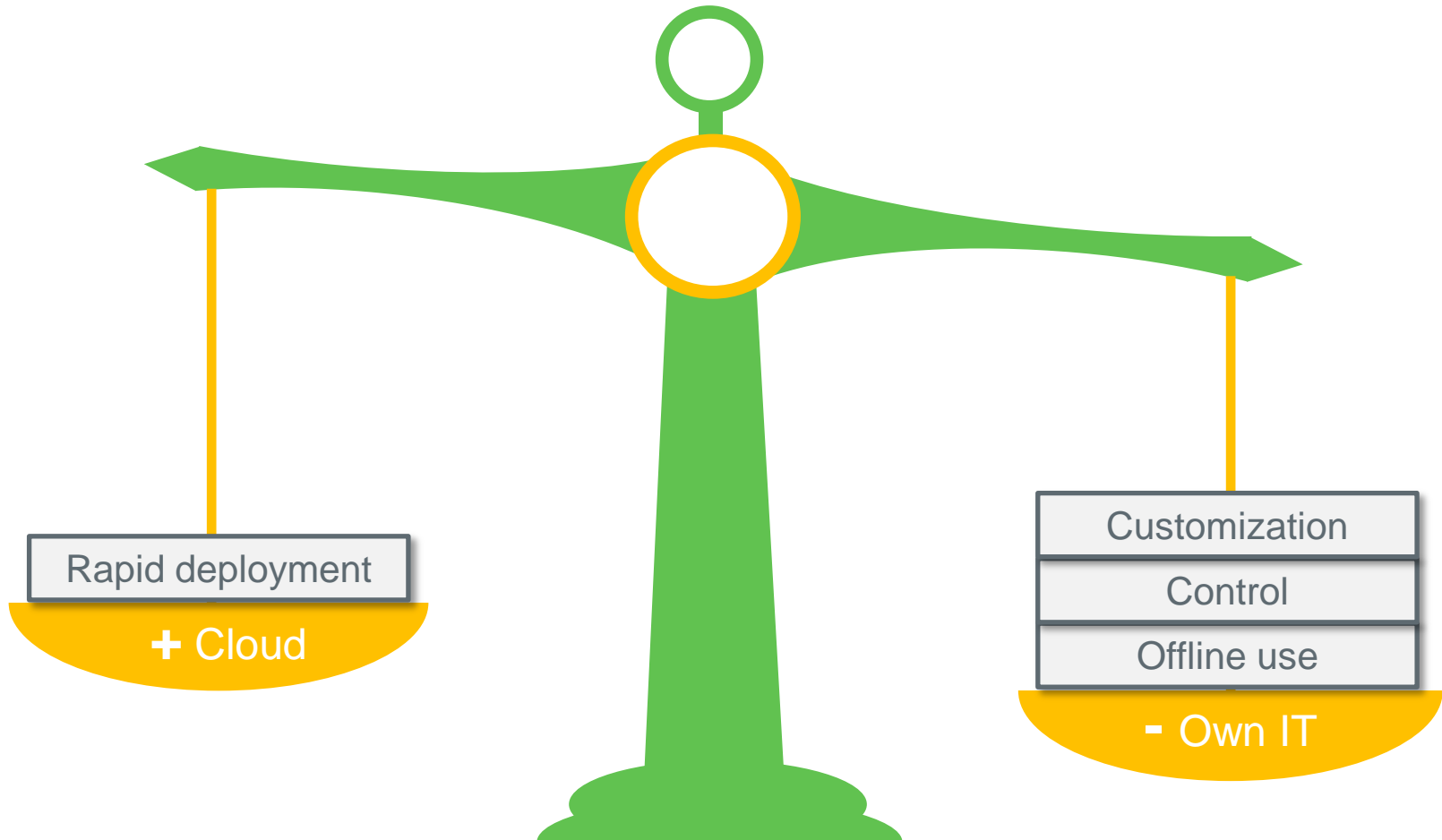
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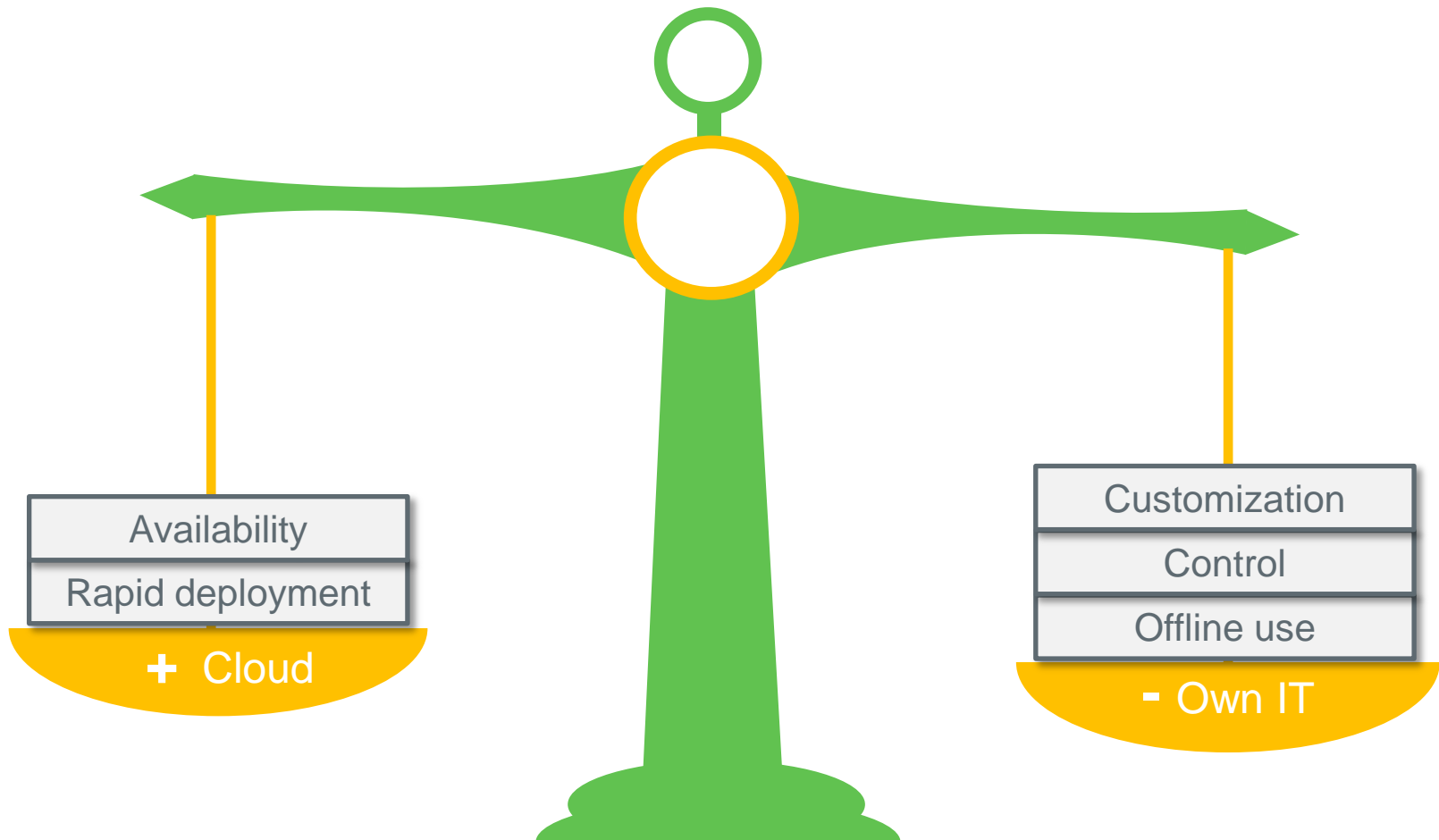
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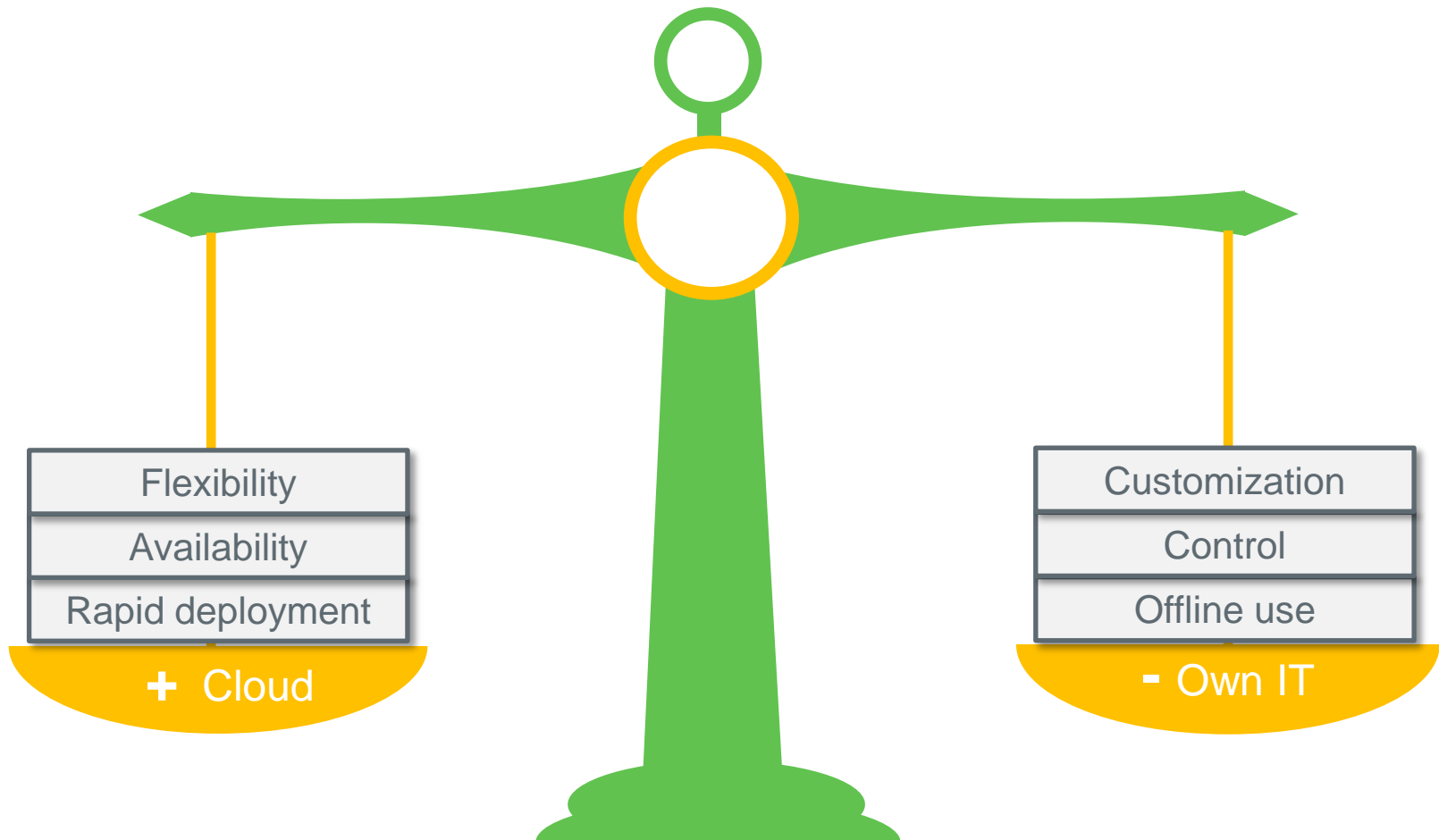
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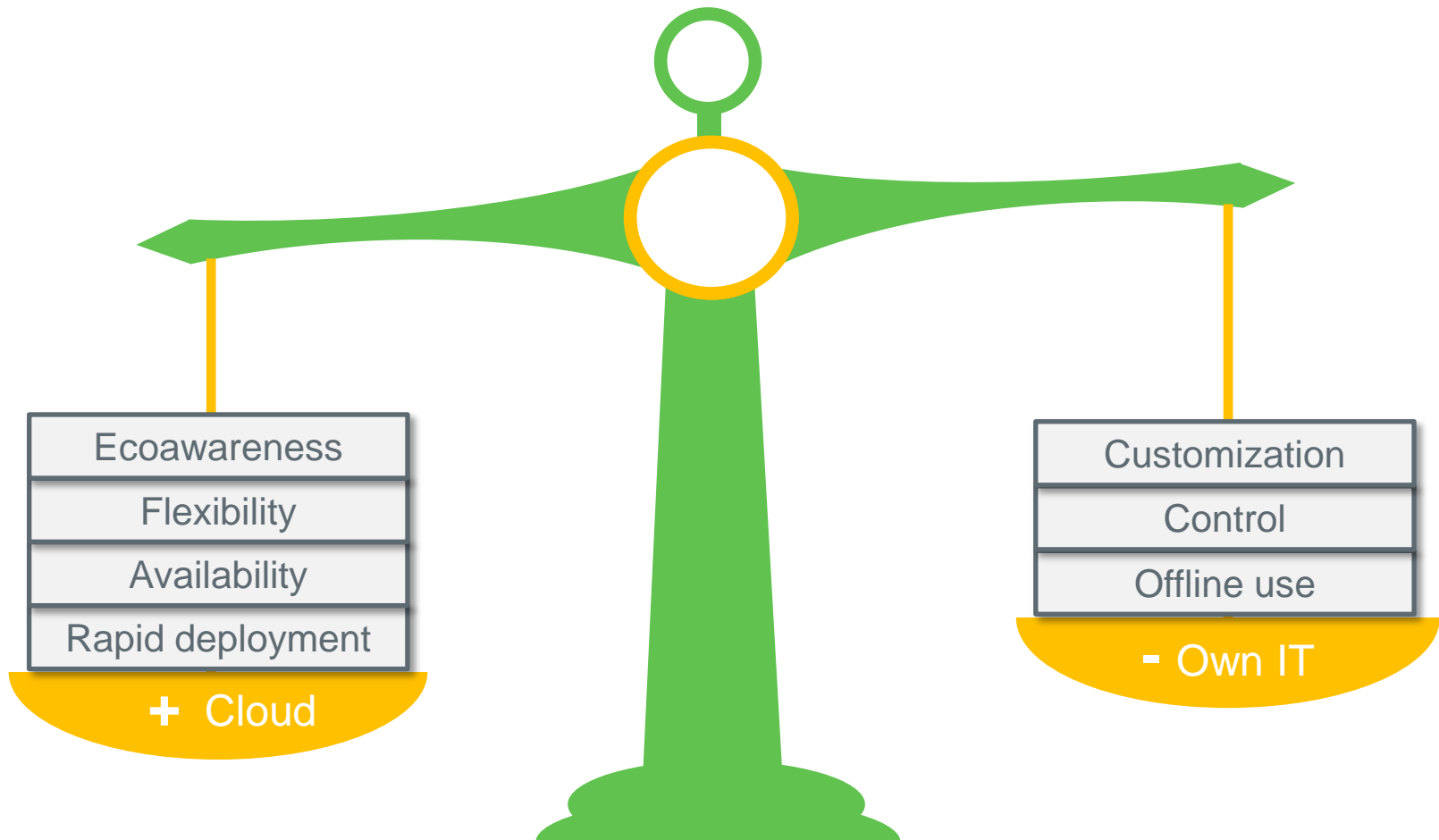
Self-produced service or Cloud?



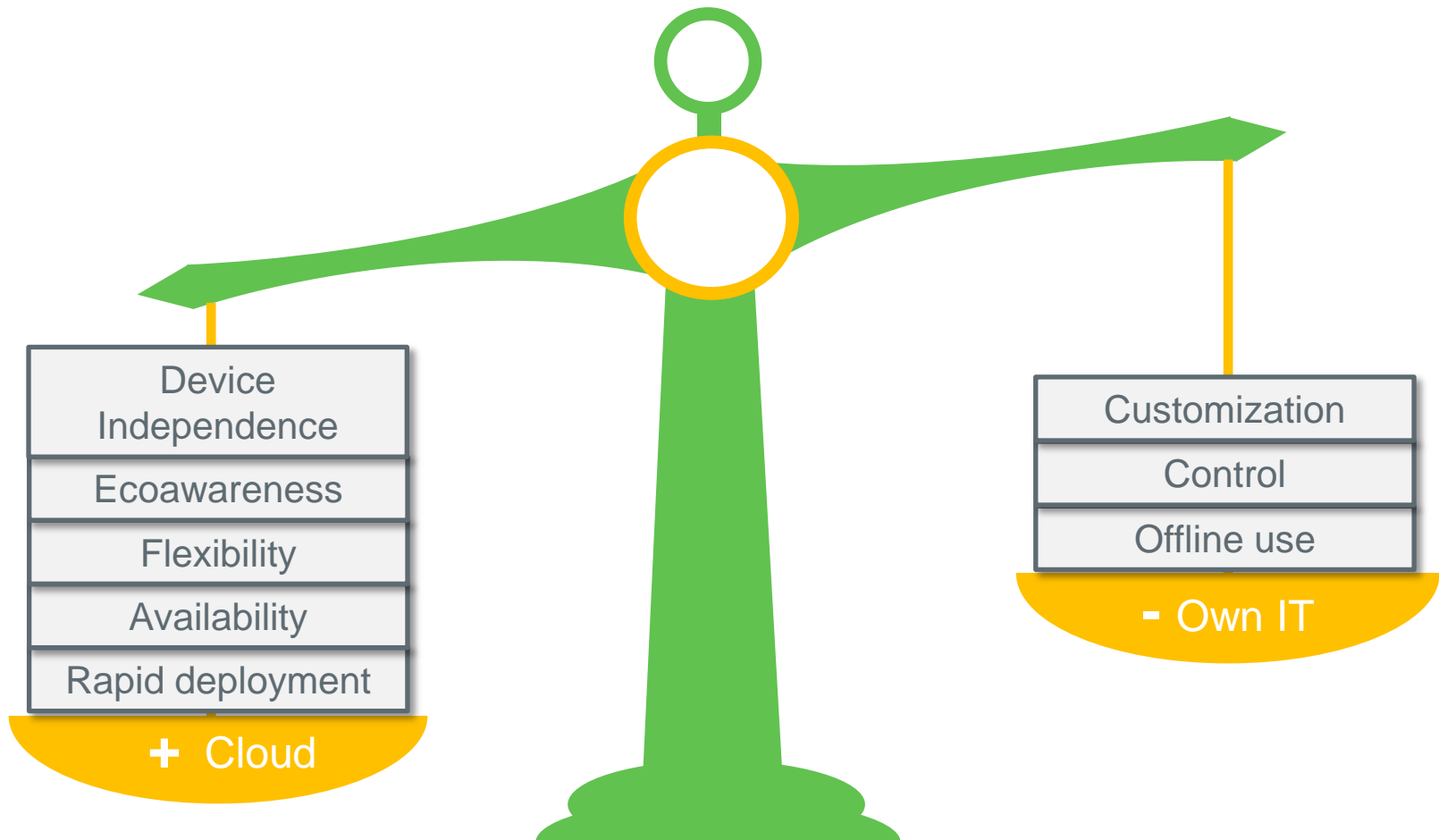
Self-produced service or Cloud?



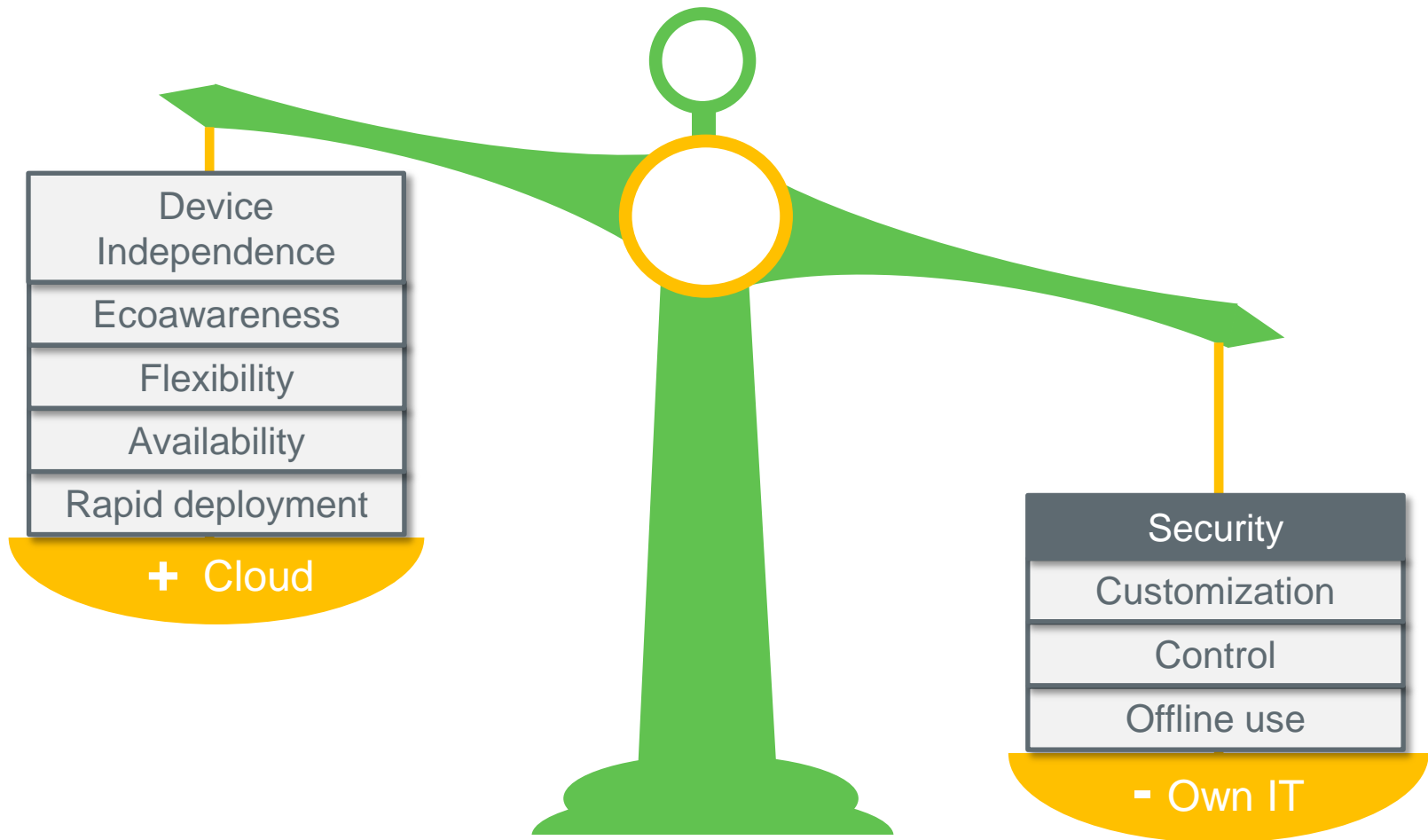
Self-produced service or Cloud?



Self-produced service or Cloud?



Self-produced service or Cloud?



Security need to be considered as a whole – not by a single or separate element

Information classification and protection

- How big part of information/data needs classification and other care? What is stored in the service? Have the legal constraints been considered?

Risk management and requirement fulfillment

- Does it make sense to protect 100€ worth of data with 100€ worth of internal security system?

Identity management and access control

- Who, how, when?

Provider security

- Privacy, contract management, audits, SLA

End-point device security

- **User steps into play**



End-point devices – before and now

Before:

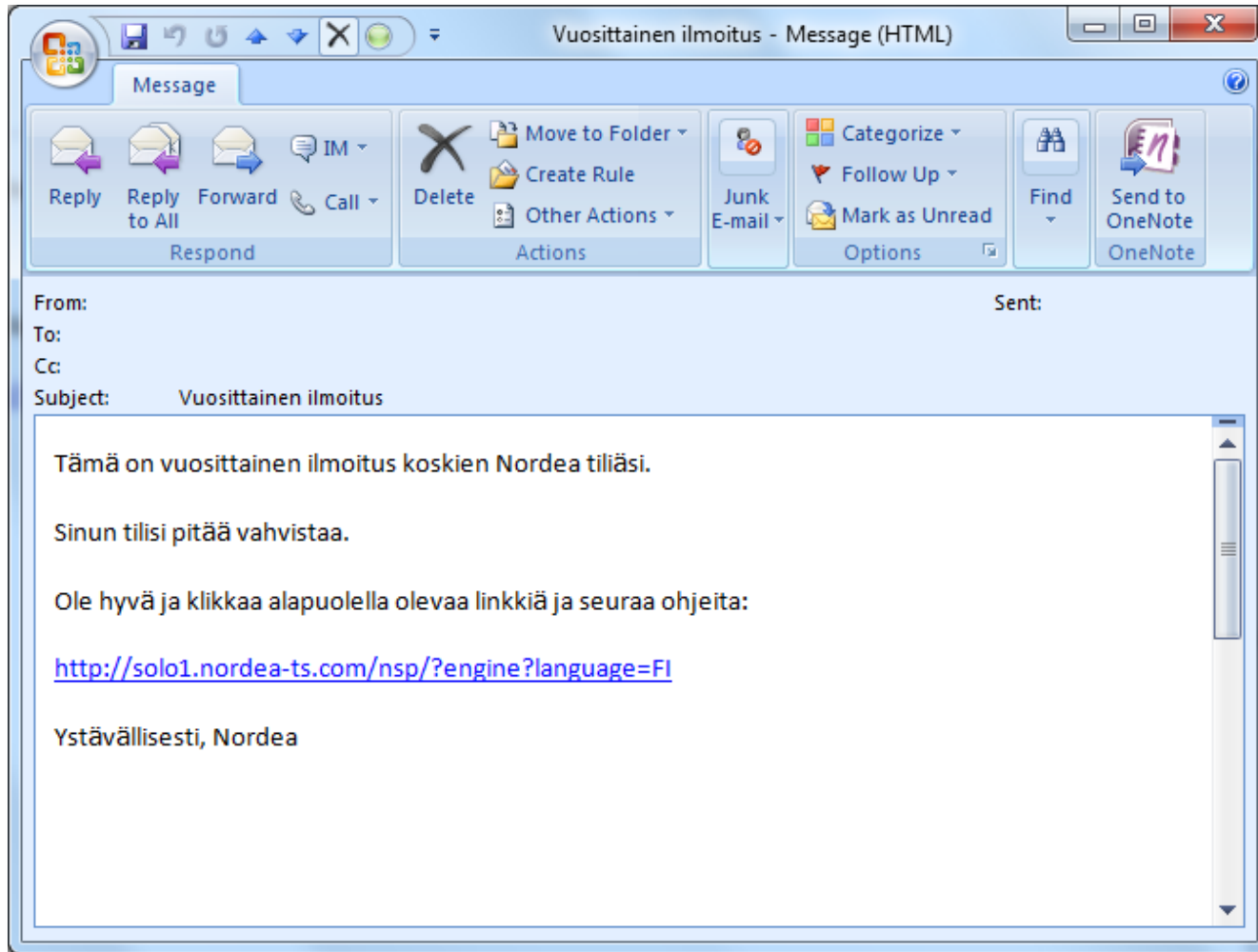
- Devices (typically) are/were employer property
- Device management and control relatively straightforward
- Devices process only data within a closed network

Now:

- More than often devices are employee property
- Due to a multitude of devices their use and control is increasingly under user responsibility
- Devices process data from wherever

Attack against the Cloud

Case: Nordea



Attack against the Cloud Case: Nordea

solo1.nordeasfi.com/nsp1/

Nordea verkkopankki

Suomeksi På svenska In English

Sisäänkirjautuminen

i Nordean verkkopankki- ja korttipalveluissa on katko sunnuntaiaamuna 11. syyskuuta 2011. Katko alkaa yöllä kello 00.00 ja sen arvioidaan päättyvän kello 12.00. Palvelukatkon syynä ovat tekniset ylläpitotoimet. [Lue lisää](#)

Anna käyttäjätunnus ja seuraava vapaa tunnusluku. Jatka napauttamalla OK-painiketta.

Sisäänkirjautuminen

Käyttäjätunnus:

Tunnusluku:

OK

[Millä selaimilla verkkopankkia voi käyttää](#)

[Verkkopankin varavhitys](#) (Tekstiversio)

[Mobiiliverkkopankki](#)

Hanki Nordean pankkitunnukset

Hoidat pankkiasiasi monilla eri välineillä ajasta ja paikasta riippumatta. Pankkitunnukset saat vain Nordean konttorista.

[Hanki Nordean pankkitunnukset](#)

Käytä verkkopankkia turvallisesti

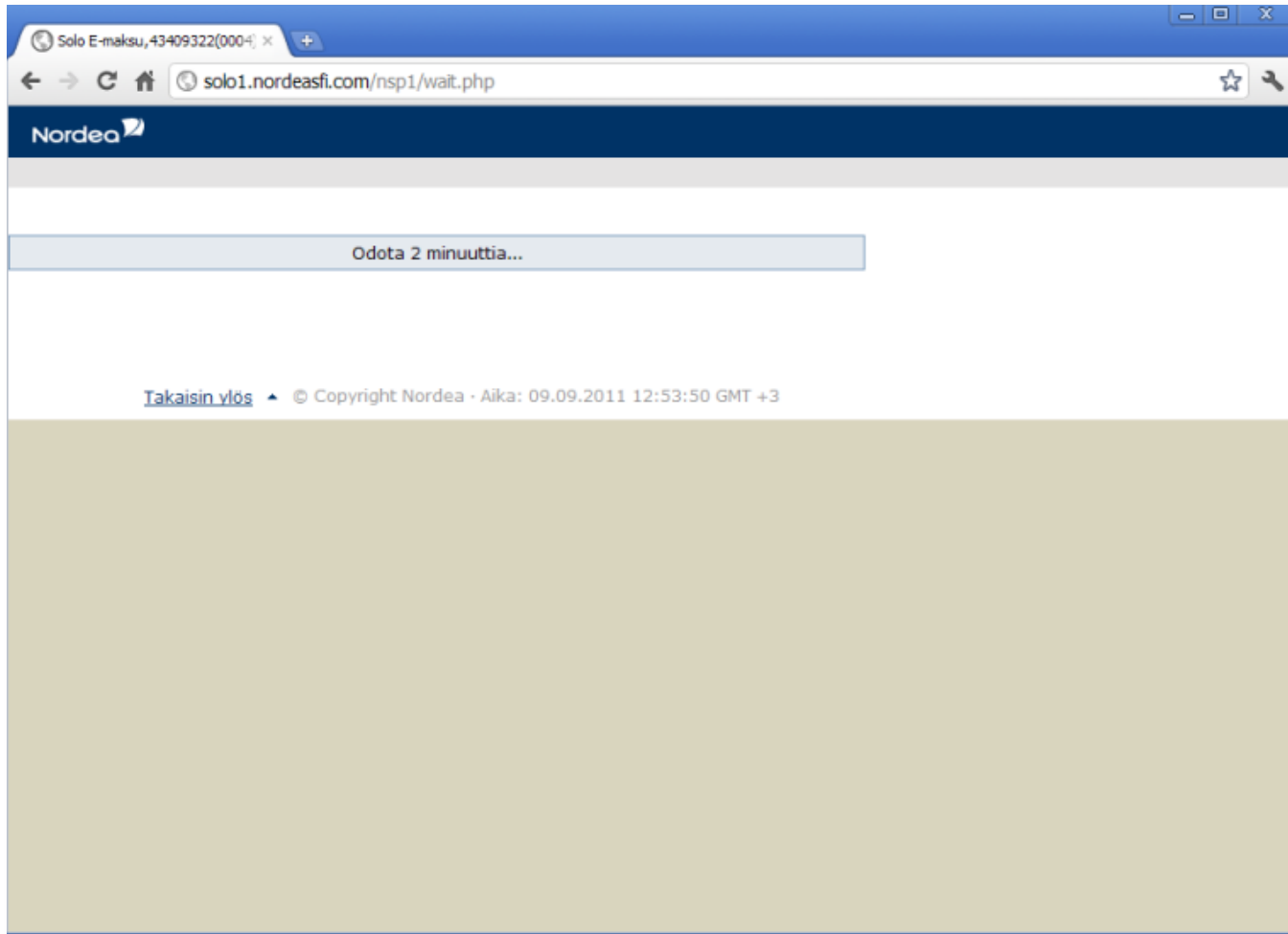
Pankkiasiointi verkossa on turvallista. [Lue tietoturvaohjeet](#)

Onko selainversioi vanhentunut ja pitäisikö se päivittää? [Lue Usein kysytyt kysymykset](#)

[Verkkopankin esittely](#) (Flash) [nordea.fi](#)

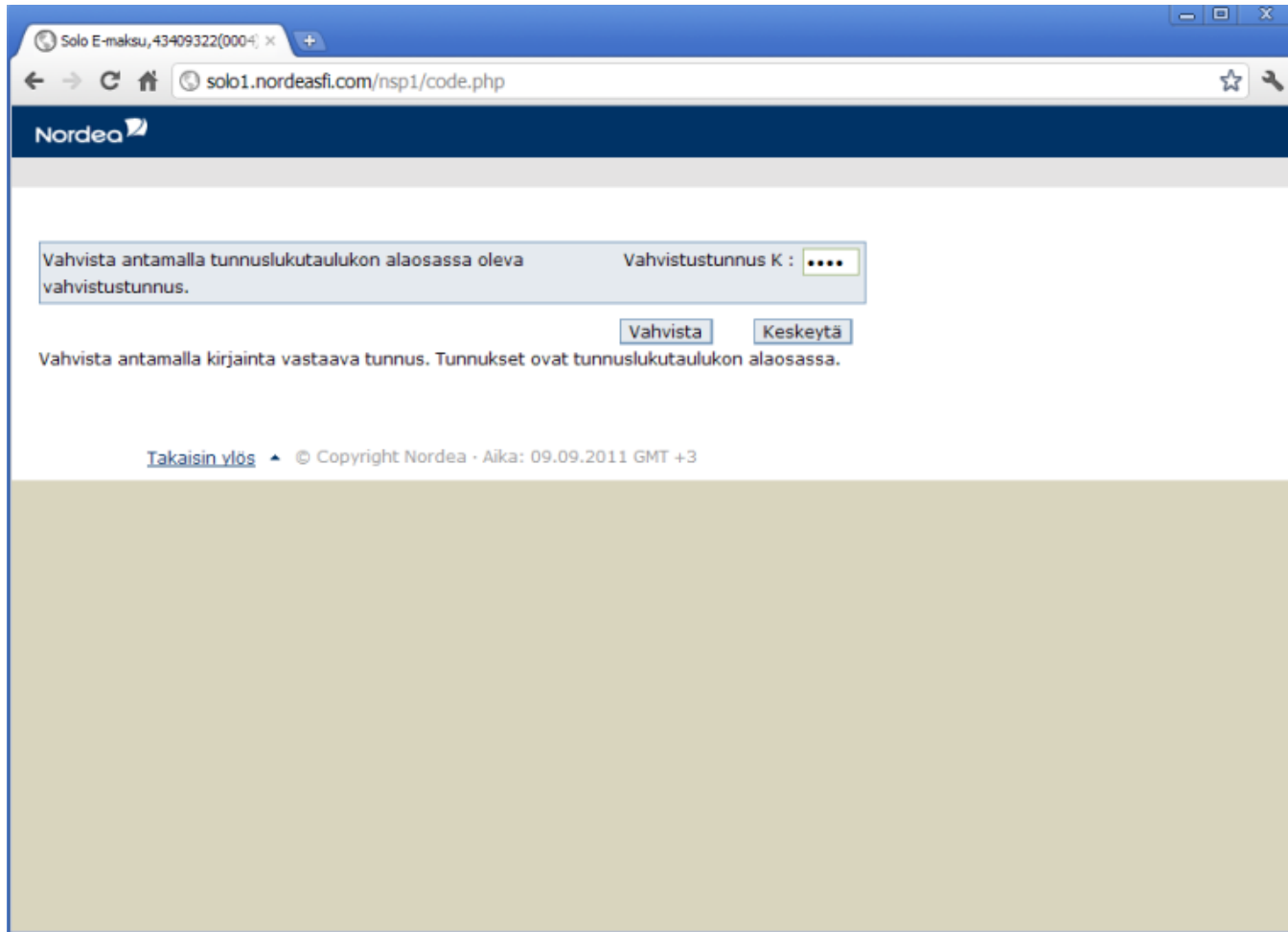
Attack against the Cloud

Case: Nordea



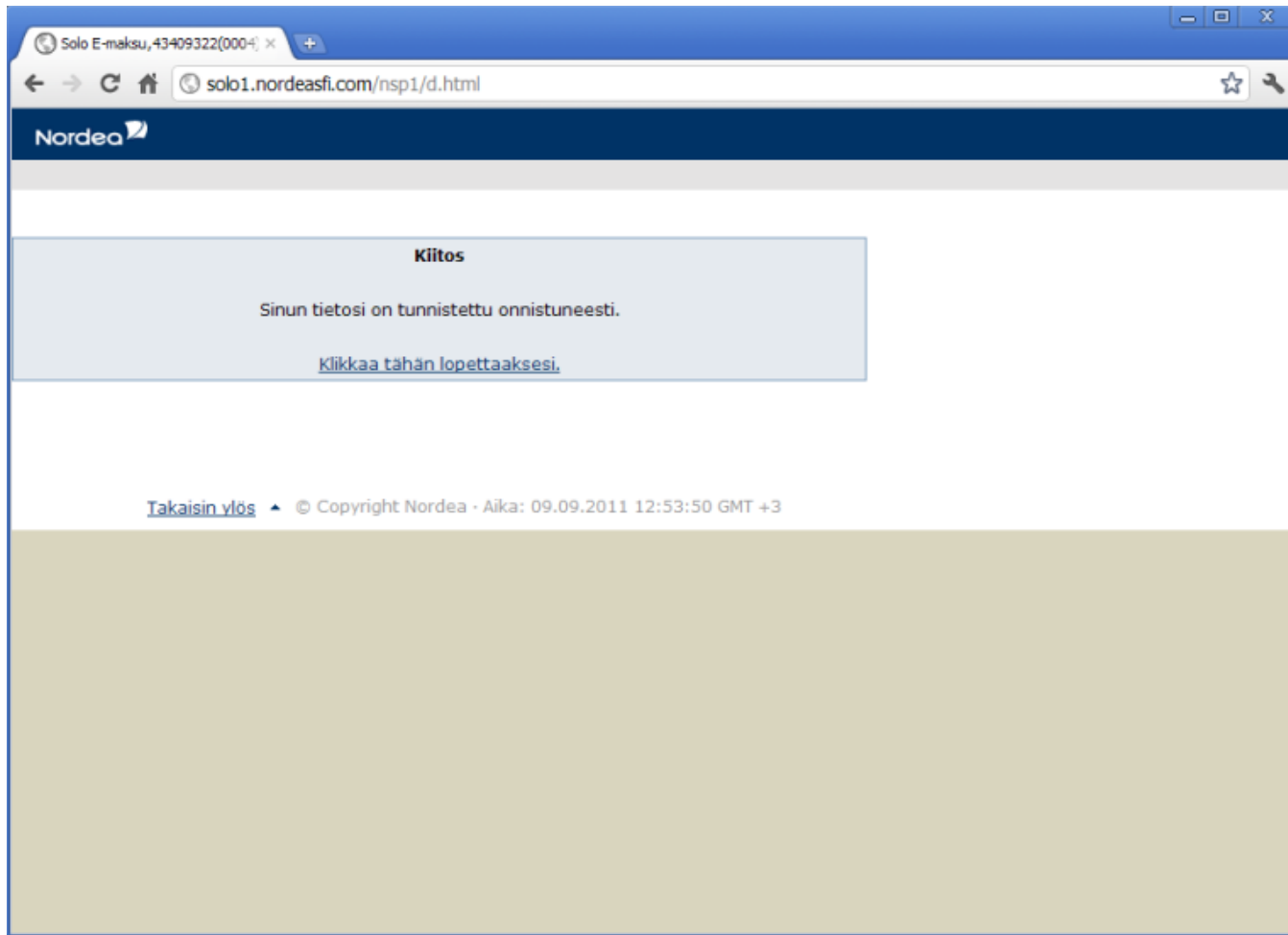
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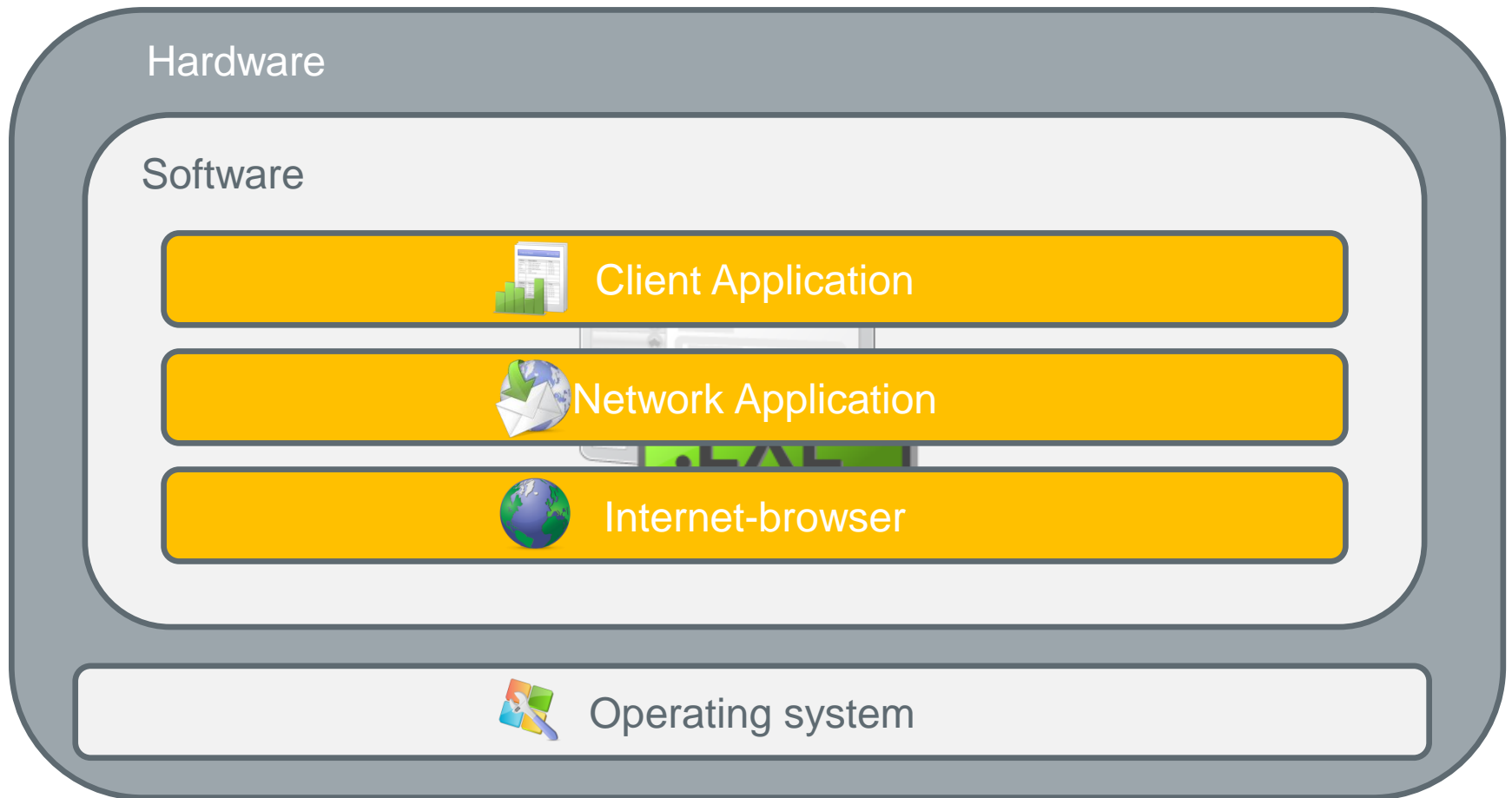


Attack against the Cloud

Case: Nordea



Threat landscape is changing...



... less software in your PC

Hardware



Software



Internet-browser



Operating System

... is browser your computer?

Hardware



Operating System/ Internet-browser/Application

So what is important to remember when thinking about cloud services?

- **Where does the need come from – what is the goal?**
 - Not everything needs to be in the cloud
- **Security is not a blocker but it cannot be ignored**
 - Do not surpass any of the 5 elements
- **Take care of backups**
 - Storing data in different cloud?
- **What information/data is stored in the cloud?**
 - Crypting the data for sensitive stuff



- **Consider the "consumerization"**
 - **but it does not have to be Wild West**

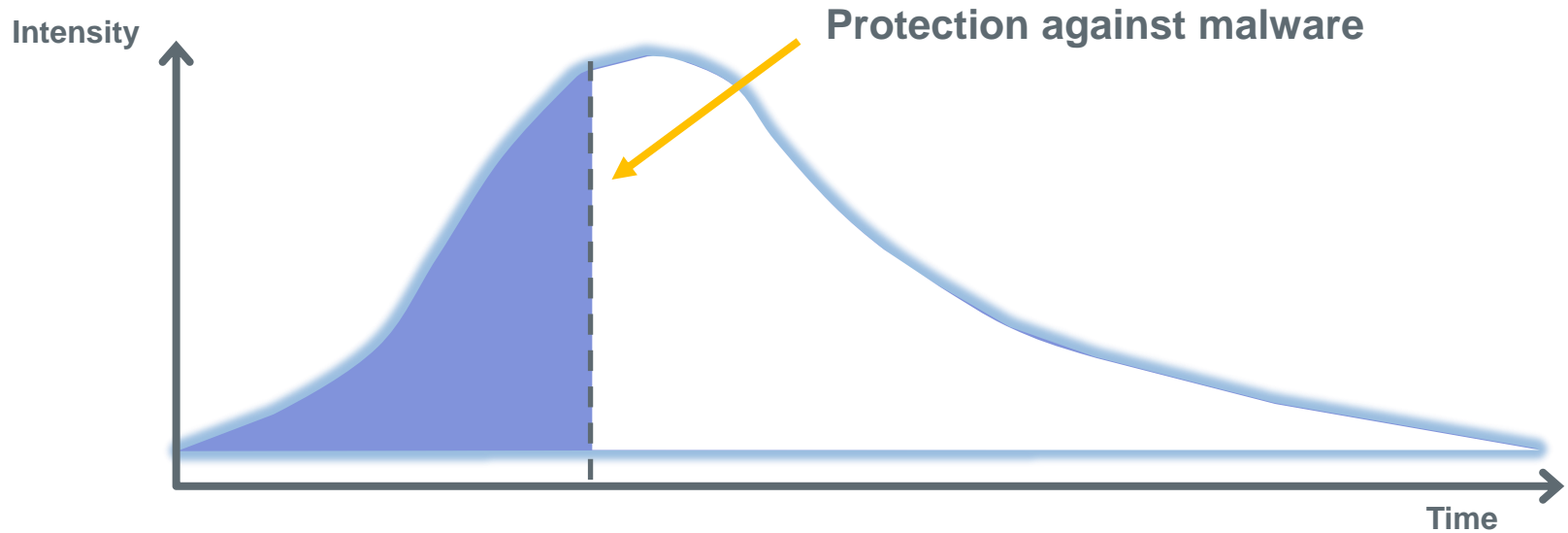
So what is in it for me personally?

- **Use https –secured services where possible**
 - E.g. <https://encrypted.google.com>
- **Follow your use of internet/social media**
 - What you put there stays there
- **Take care of your backups**
 - Is your cloud enough?
- **Note that also internet changes**
 - Dead links – anyone?
- **Consider what to do in case of an outage**



Adapted from Petteri Järvinen / Tietokone 8/2011

F-Secure security in the cloud already from 2008



Cloud-
based
protection

Malware signatures

Set your sights to more Clouds...





F-Secure® 
Protecting the Irreplaceable.