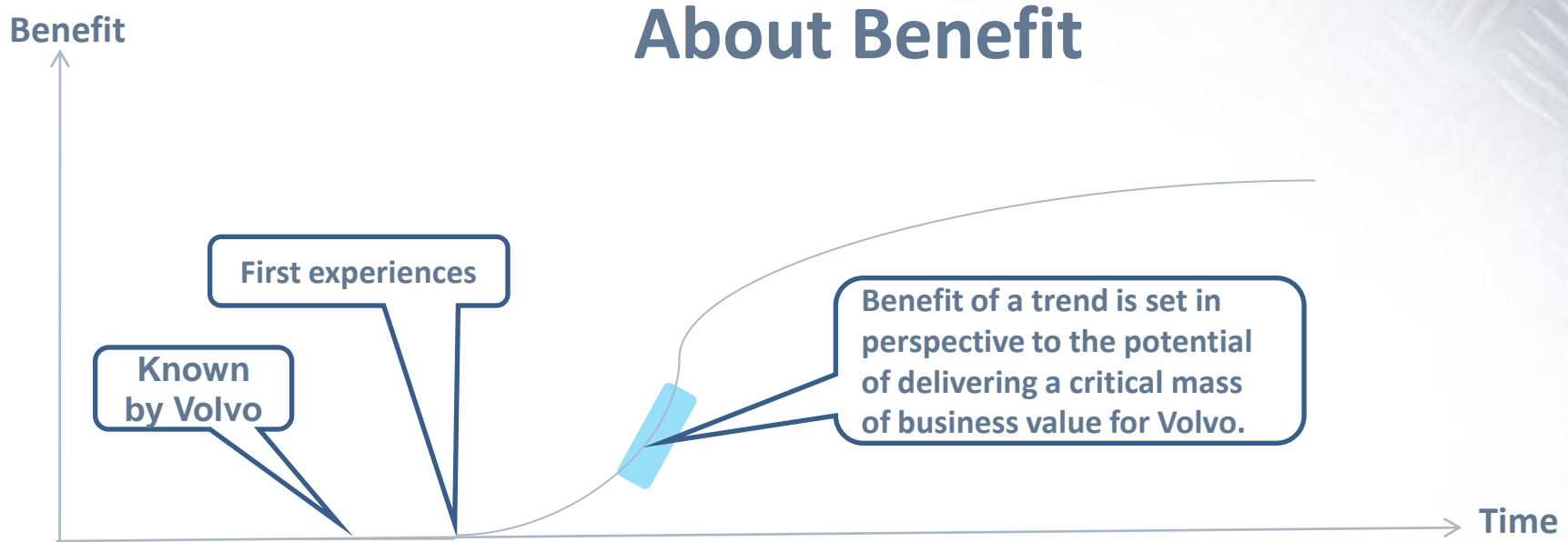


Emerging Trends for Volvo

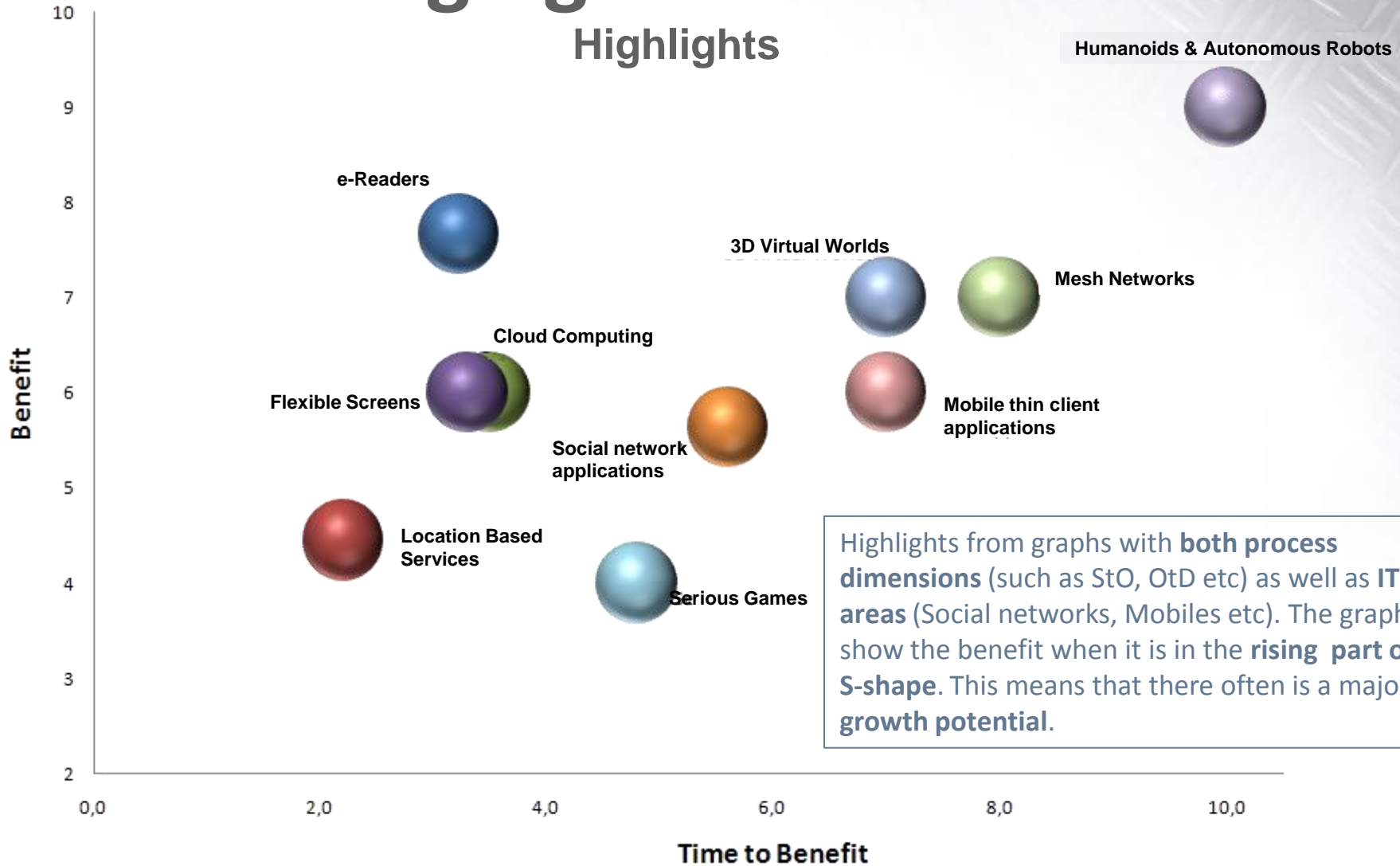


The benefit values are **snap-shots** showing the **potential** in relation to a set time frame.

The online version has speaker notes to provide **more detailed definitions**.

Emerging Trends for Volvo

Highlights



Highlights from graphs with **both process dimensions** (such as StO, OtD etc) as well as **IT areas** (Social networks, Mobiles etc). The graphs show the benefit when it is in the **rising part of the S-shape**. This means that there often is a major **growth potential**.

Emerging Trends for Volvo

e-Readers

A thin light display that can store large amounts of documents. Viewed with **close to paper-feeling**. They will be further developed and combined with devices such as smartphones.

- Assembly instructions!
- Can this technology be used for Head-up displays in vehicles?



Kindle 2

The world consumption of paper has increased 400% in the last 40 years.

Close to 4 billion trees or 35% of the total trees cut around the world are used in paper industries globally.

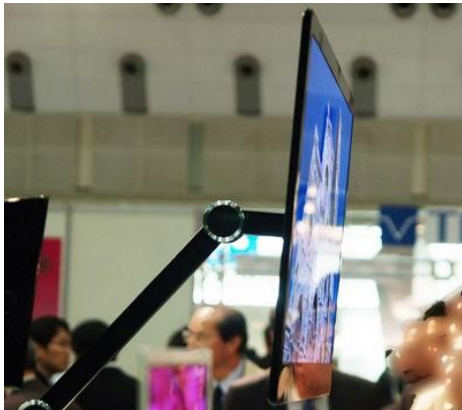


Emerging Trends for Volvo

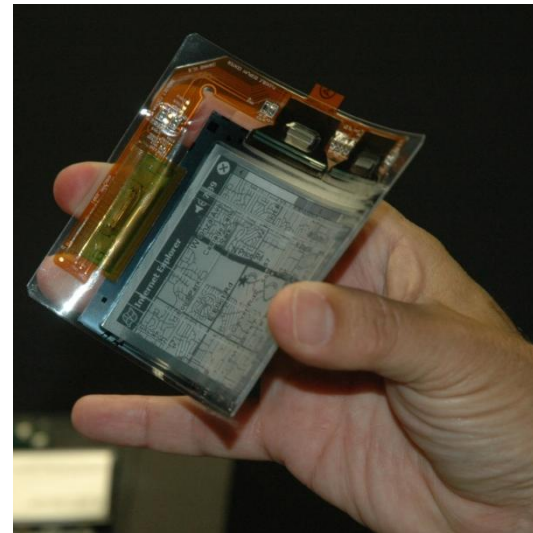
Flexible screens



Researchers have developed the first computer display that is **both flexible and touch sensitive**. A breakthrough that could lead to more practical and easier-to-use **portable devices**.



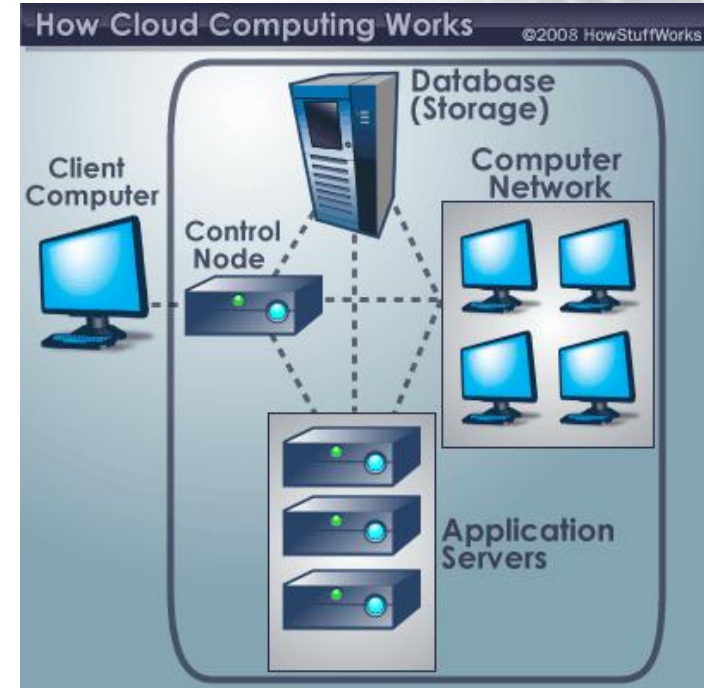
Still expensive and too short burn time, however that is expected to be solved.



Emerging Trends for Volvo

Cloud Computing

- Cloud Services sales are expected to reach 42 billion USD in **2012 = grow threefold**
- Main sales argument is the **cost savings**. Customers expect not to go to a large number of different suppliers to cover their needs for various services
- It is important to offer a **full menu of services**
- Eventually even **mobile will be clients** to cloud offers



Q: Should Volvo/Volvo IT offer more cloud computer services or be a client

Emerging Trends for Volvo

Location Based Services

Using knowledge about **location** to offer services

Both for **Customer offers** and **Operational Excellence**



<http://www.navcen.uscg.gov/ftp/gps/ggeninfo/gps-iff.tif>



By Joseph Simpson



Example: Mobile Trucker community



Example: Location Based Assembly Support

Emerging Trends for Volvo

Social Network Applications

Business applications utilizing Social software and Social networking targeted at **harnessing collective intelligence** to address challenges and opportunities that are fundamentally social in nature

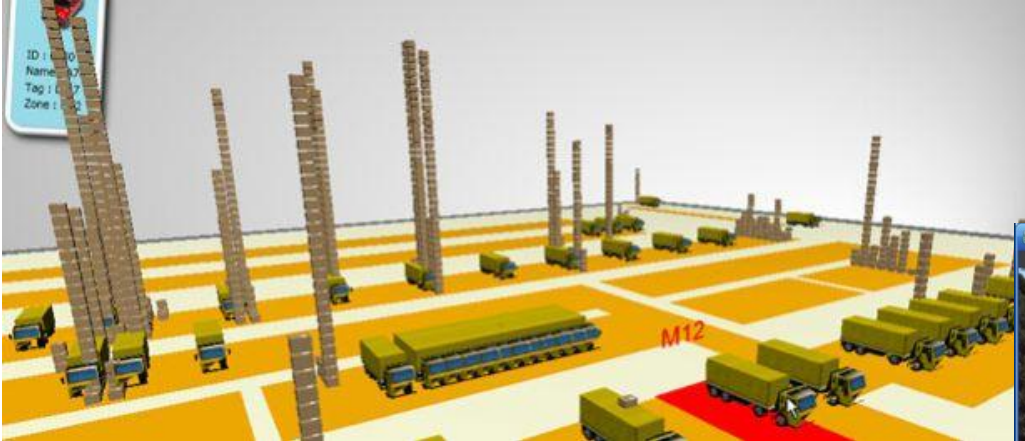
- Idea exchanges
- Crowdsourcing
- Prediction marketplaces
- Community-enabled self-service
- Customer-driven product and service design
- Long-lived and dynamic documentation



Emerging Trends for Volvo

Serious Games and 3D virtual worlds

3D worlds and Games inspires to new types of application interfaces



The cross docking terminal in Ghent (real time and/or simulated)

Game based learning transforms learning from knowing something new to doing something new...

It makes learning fast with direct feedback



A 3D world interface for support. Navigate by walking around (or search as usual).

Emerging Trends for Volvo

Mobile thin client apps

We will see **“thick”** mobile clients for some **years to come**.

With better broadband capacity, 4G, WiMAX, open Wi-Fi etc. the **mobile computing, databases and applications will move into “the cloud”**



Example: Green Commuting

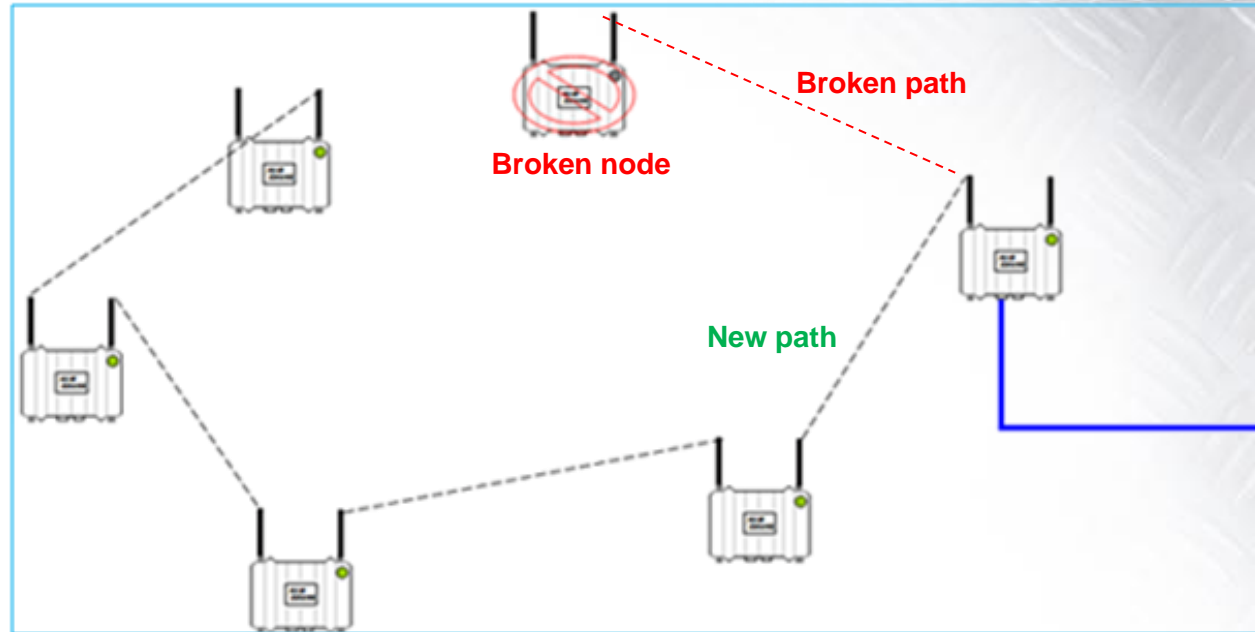
- **Commuting CO2 footprint**
- **Personal CO2 counter**
 - Mobile
 - GPS
- **Comparison and contest** to reduce total CO2 emission

Emerging Trends for Volvo

Mesh Networks

Routing between nodes by “hopping” from node to node until the destination is reached.

Self-healing, if one node stops another one will be found dynamically



From: Wikipedia

- **Industrial sensing and networking**
 - Low cost, Zero management and Resilient
- **Product tagging in advanced manufacturing and logistics.** Multiyear battery life
- **Automation within buildings**
- **Environmental management**
- **Vehicle to vehicle communication**

Emerging Trends for Volvo

Humanoids & Autonomous Robots

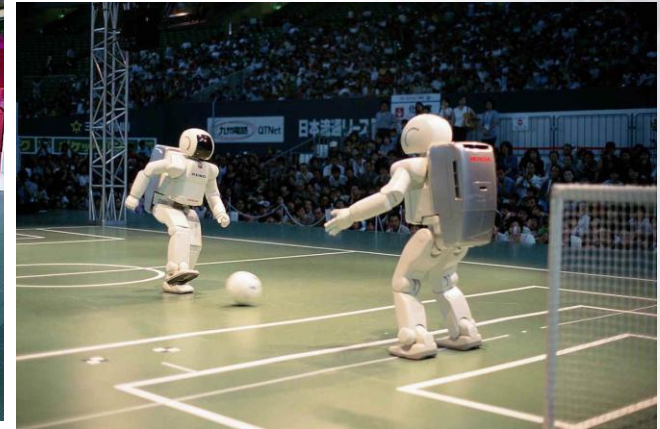
- **Asian Automotive** are the leaders within this area
- Both **Japanese and S. Korean Government** officially support and urge companies to invest in robotics



Example: S Korea investing 1.2 billion US dollars in two Robot parks to be launched 2013 and 2014. Combined science centers and amusement parks.



Robot suit for heavy lifts etc (on the Japanese market)



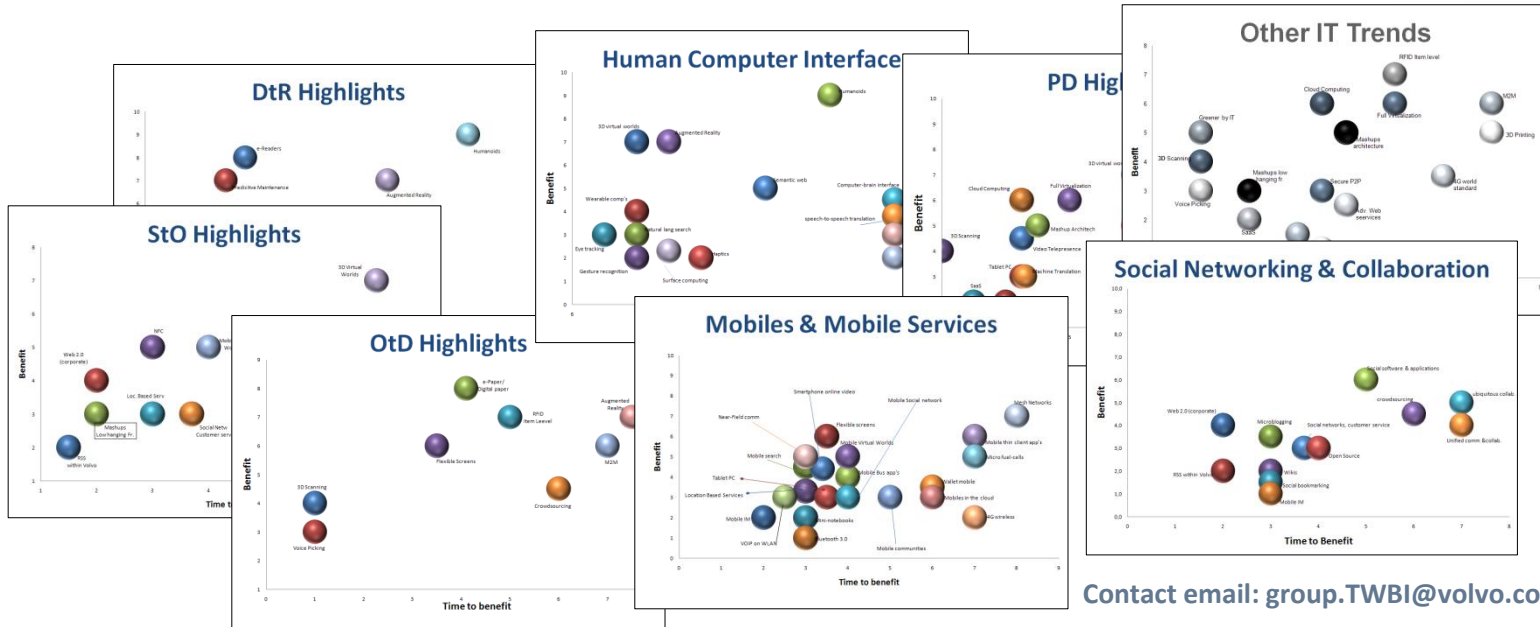
Honda's autonomous robots (humanoids) can take complex decisions

- **When will the first robot suites be used within Volvo?**
- **When will robots make the loading and unloading of trucks?**
- **What is Volvo/Volvo IT role for robotics development?**

Emerging Trends for Volvo

Summary

Contact Volvo IT Solution Units and TWBI for specific Emerging trends (Process or IT Area)



Contact email: group.TWBI@volvo.com

The future is already here - it is just unevenly distributed *William Gibson*