



Technology inspiring a connected life

Bosch Software Innovations

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Technology inspiring a connected life: Internet of Open Stuff

Dr. Stefan Ferber

Open World Forum 2012, Paris, 12.10.2012

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Bosch 2011 key figures

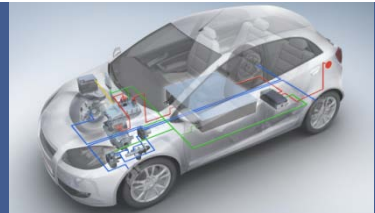
Bosch Group total

- 51.4 billion EUR in sales
- 303,200 associates including 38,750 in research and development



Automotive Technology

- 59% share of sales
- World's largest supplier of cutting-edge automotive technology



Industrial Technology

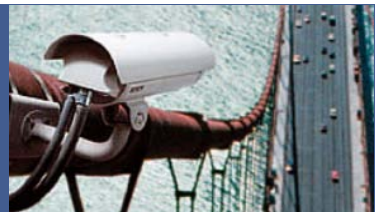
- 14% share of sales
- World's leading manufacturer of large gearboxes and of powertrain, packaging, and process technology



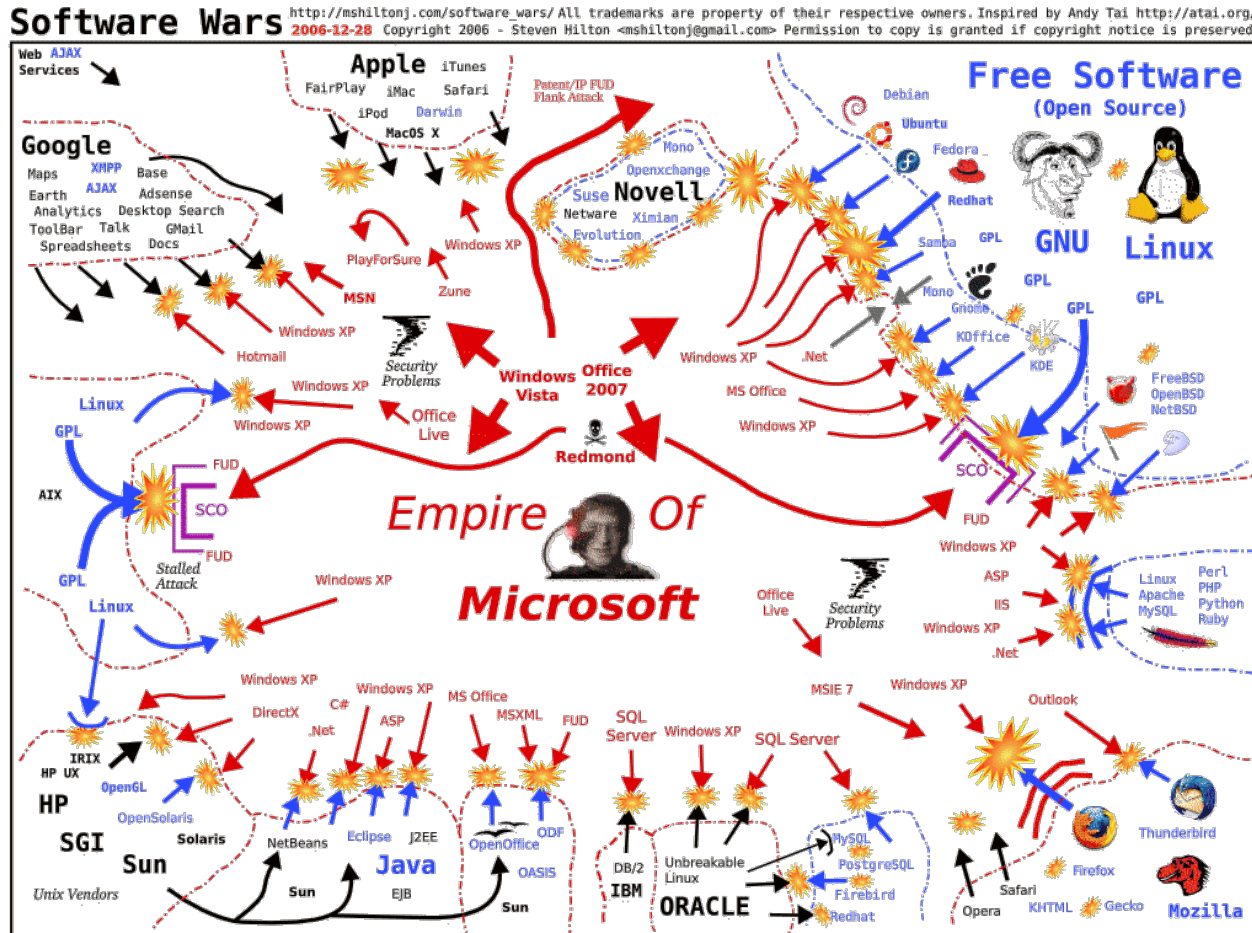
Consumer Goods and Building Technology

- 27% share of sales¹
- World's largest power tool manufacturer, leading the field in household appliances, heating and cooling, and security systems

¹ Including other segments



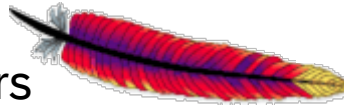
Open Source Communities as Competitors



Community Examples Open Source Software

→ Apache Web Server

- 90 Core Developers
- > 5.000 Contributors
- > 100 related top level projects
- > 100 Countries
- Apache License V2.0



→ Linux / Debian



- > 2.000 Developers
- > 10.000 Sub projects
- > 100 Countries
- 20 Processor architectures
- GNU and other Licenses

→ Eclipse

- > 2.000 Developers
- > 1.200 related top level projects
- > 85 Countries
- > 200 company members
- Eclipse Public License

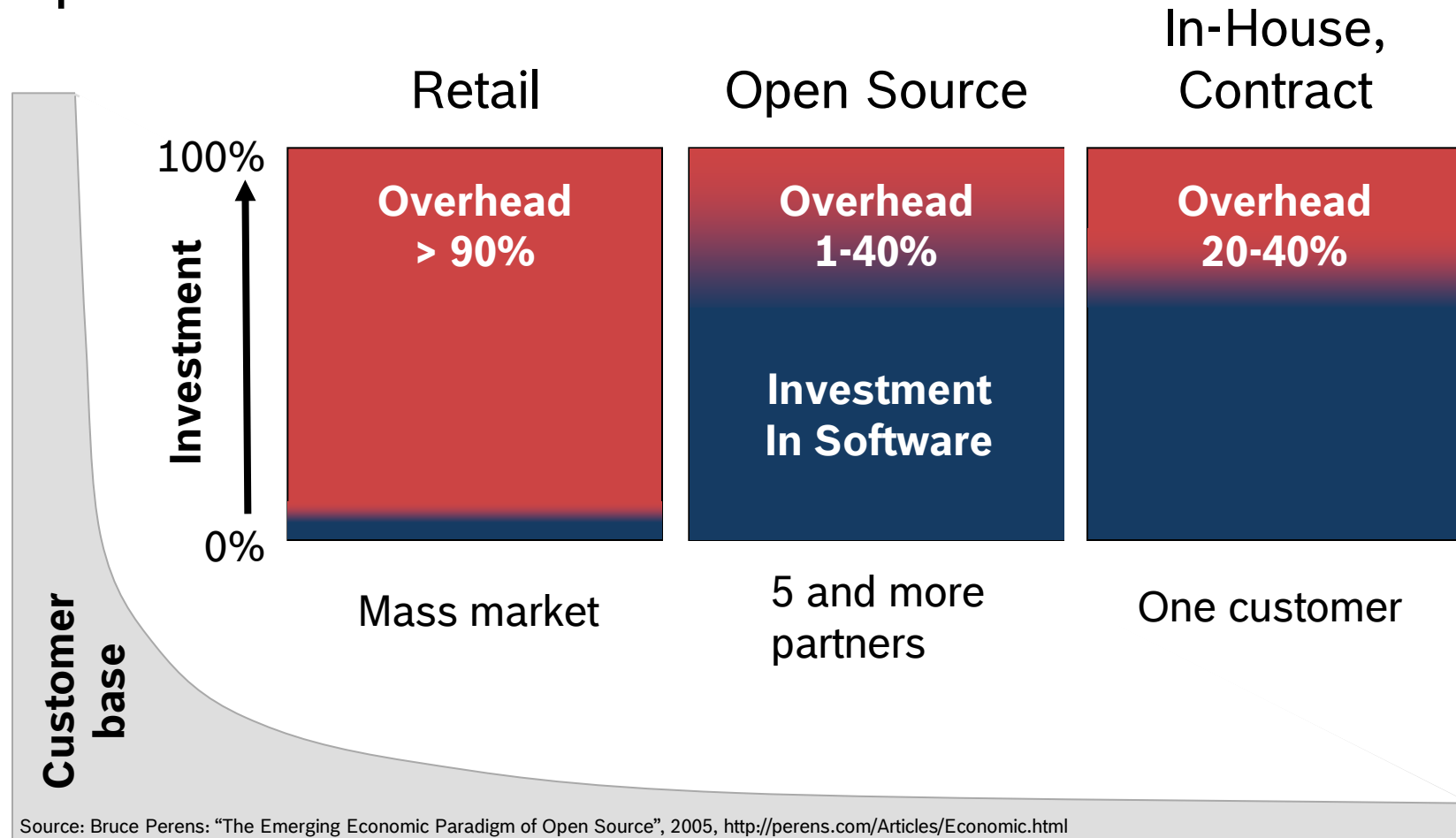


→ Mozilla



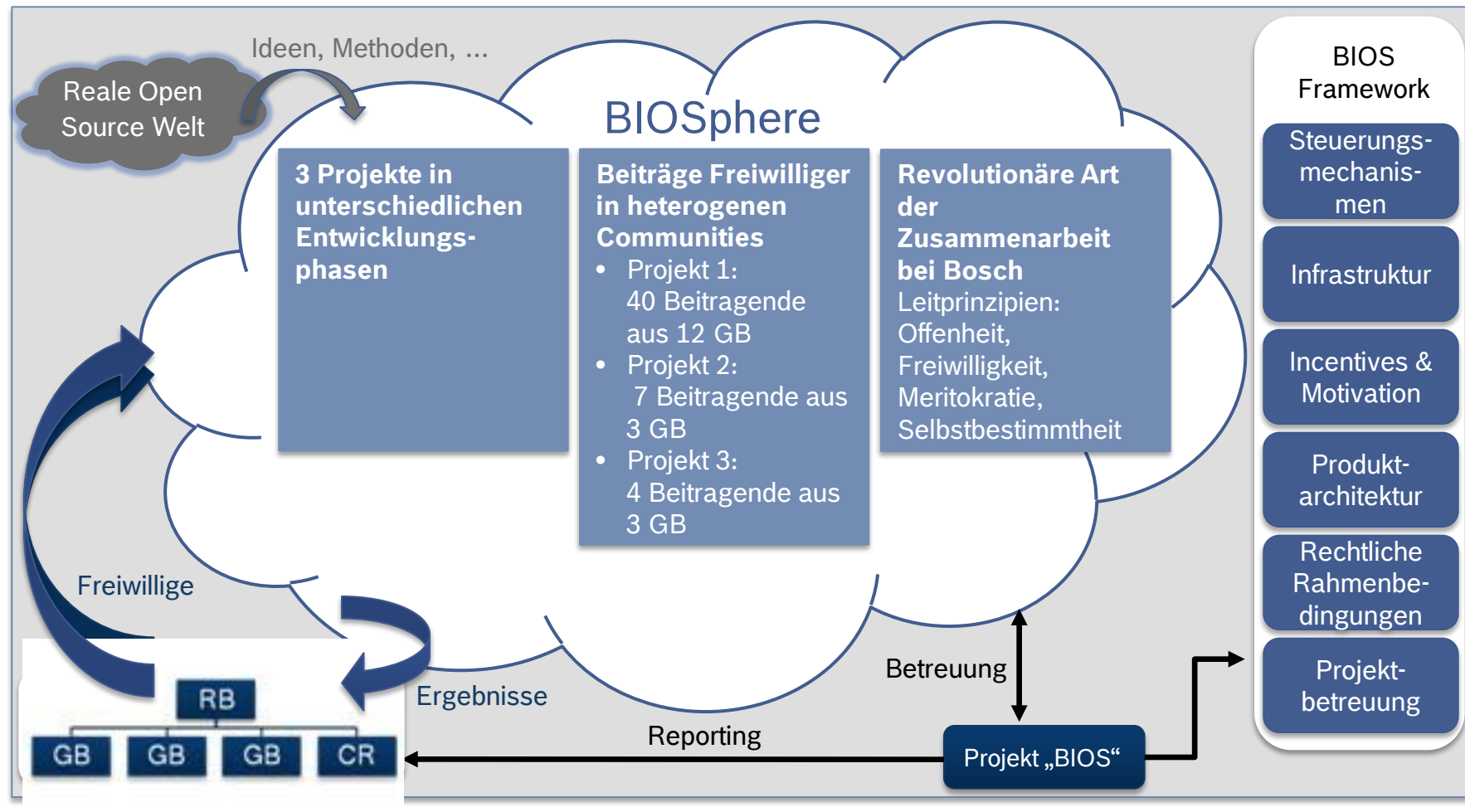
- > 15.000 “Developers”
- > 15.000 Development Sites
- > 100 Countries
- Mozilla Public License

Open Source Software Economics



Open Source Software in Old Industry

Wikinomics bei Bosch: Bosch Internal Open Source - BIOS



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Buderus App EasyControl

EasyControl - Mit der Buderus App EasyControl wird die Regelung mobil.



<http://youtu.be/uCeO6uKdUPA>



Bosch Software and Systems House

Overview Bosch Software Innovations and inubit

- **Our offering:**

Product Solutions

inubit Suite

Visual Rules Suite

Infrastructure Management Suite

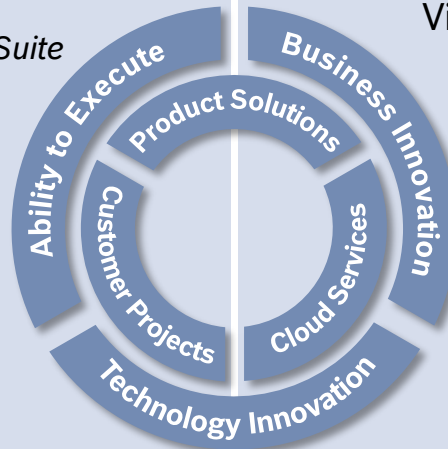
Customer Projects

*e.g. in the areas of finance,
industry, energy, public
administration, healthcare*

Cloud Services

eMobility

Energy Management



- **Locations:**

Immenstaad, Stuttgart, Berlin,
Chicago, Palo Alto,
Vienna, Singapore
and Shanghai

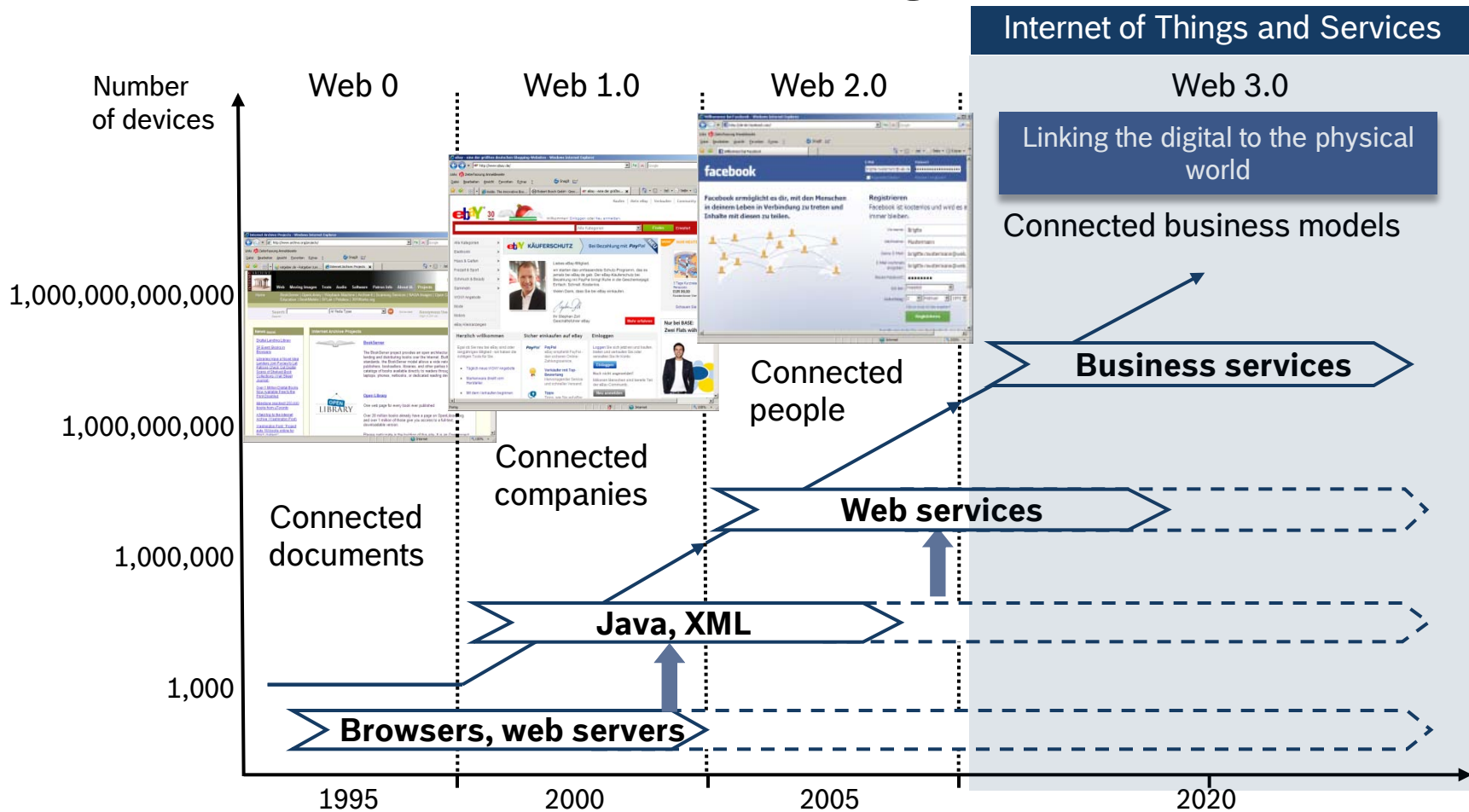
- **Personnel:**

~ 450 worldwide



Technology inspiring a connected life

Internet – The Driver of Change



Internet of Things & Services (IoTS) in a Nutshell

Business Innovations

Weaving smart things, enterprises, and people leads to innovation in services and business models.

Market Disruptions

Players of different industries compete and cooperate in new market segments leading to business ecosystems linked to communities.



People Competences

Software and system competencies linked to deep domain knowledge and enlightened with creativity are the core for innovation in technology and business.

Technology Advances

Internet technologies offer a platform to inter-connect billions of things. Open Source communities accelerate the development and implementation of standards.

Technology inspiring a connected life



Connected Mobility



Connected City



Connected Energy

Enabling business success
in a connected world



Connected Industry

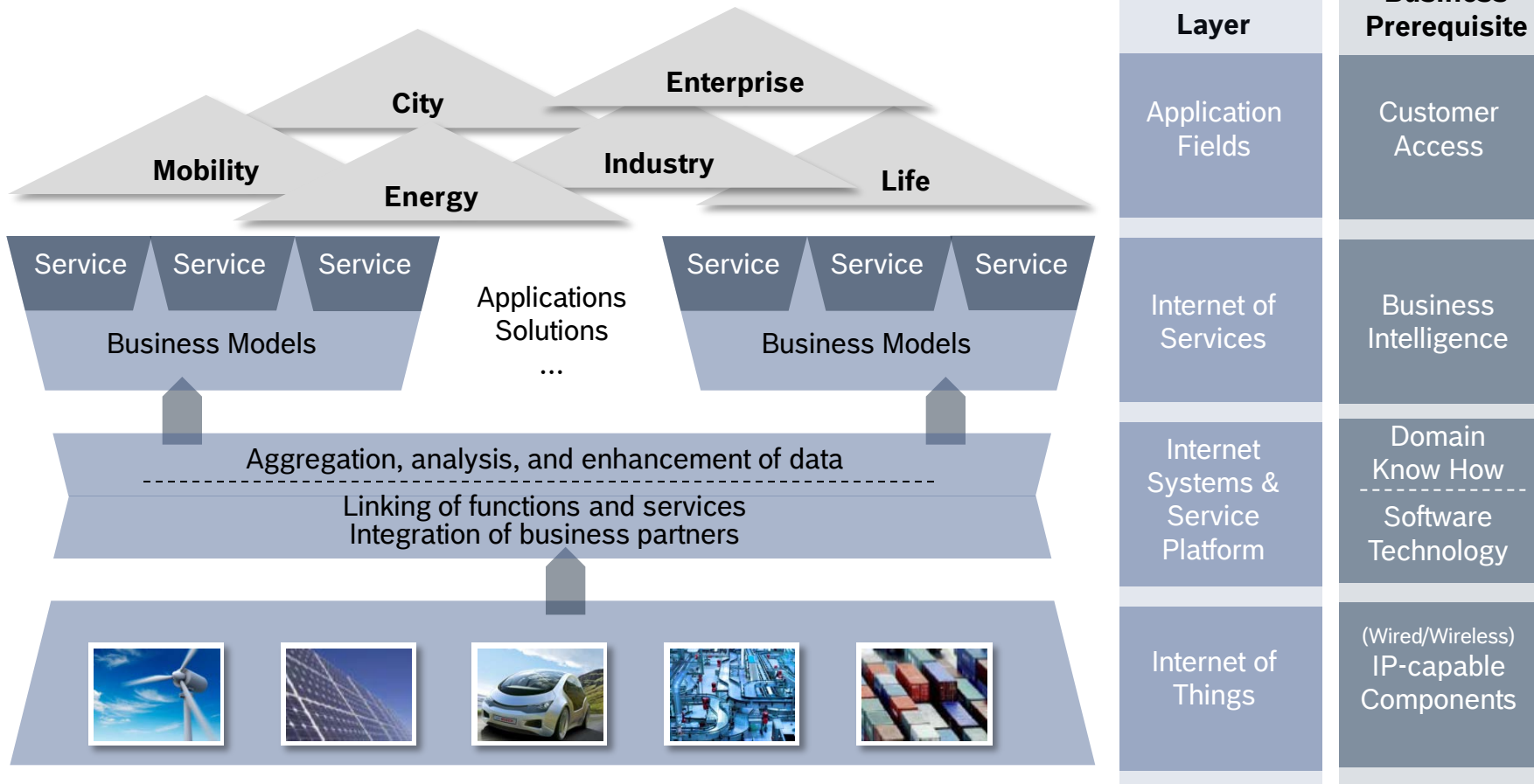


Connected Life



Connected Enterprise

Reference Model Internet of Things & Services



eMobility “pioneering technology in Singapore”

SINGAPORE



eMobility Solution

Technology and service provider

- Openness to 3rd party vendors
- Integration of new business models
- Local operation of infrastructure

Project figures

- **2011:** Launch of Charging Service
 - **2012:** 60 Electric Vehicles, 63 charging stations
 - **2014:** break-even 1,500-3000 EV (ca. 2% of vehicles)
 - **By 2016:** Develop business model, partners & drivers
- Second highest population density
 - Top ranked on Innovation Index
 - Living city lab and talent hub (AP)

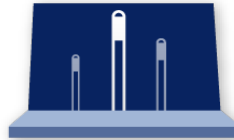
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Driver



Service Provider

Dynamic Applications

Bosch Charging Station



Charging



Access



(Telephony)



(Surveillance)



Billing

Third Party Charging Station



Charging



Access



Billing

eMobility Solution

Business Management

Charging Site Management

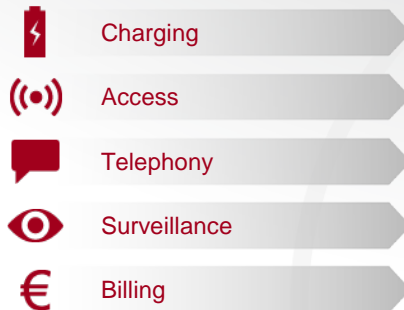


Bosch eMobility Singapore - ... and further options

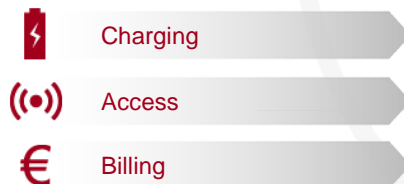


Dynamic Applications

Bosch Charging Station



Third Party Charging Station

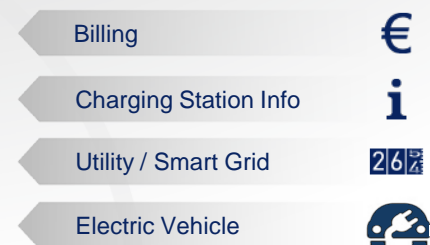


eMobility Solution

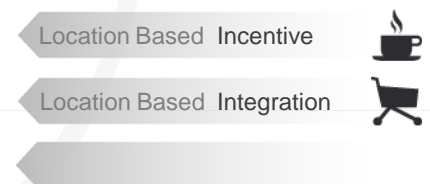
Business Management

Charging Site Management

Third Party Interfaces

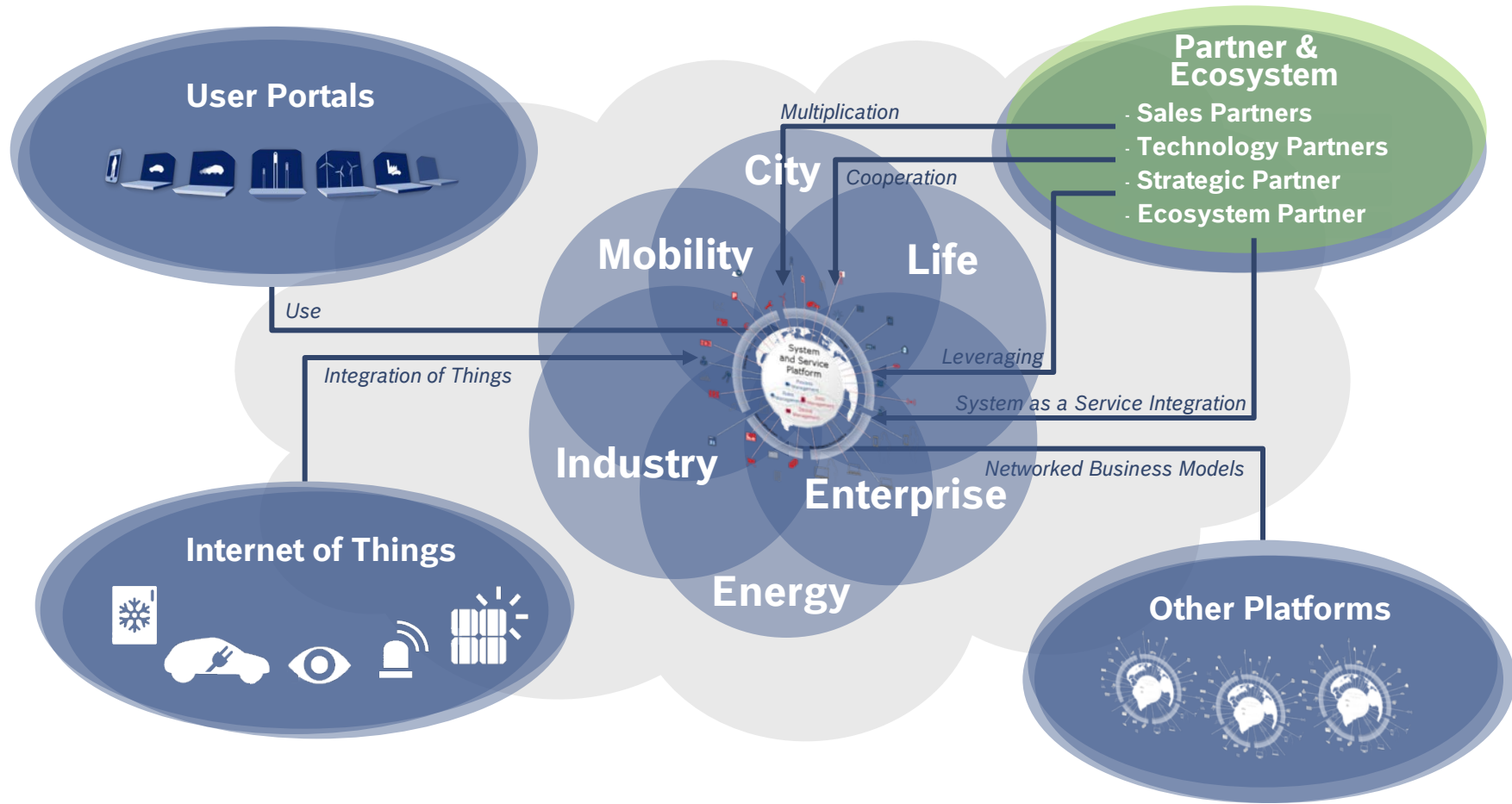


Business Ecosystem



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The Ecosystem as open Business Environment



Panel Position: Open but...

- ➔ Internet business models and technology enter the mobility and energy market called “connected car” or “smart grid”. The biggest challenge for traditional market players is to serve this dynamic upcoming multi-sided market based on
 - Internet technology for distributed applications and communication
 - Interoperability for multiple stakeholders based on openness

- ➔ Bosch is building a platform for IoT applications that we call internally the “Internet Application Platform”
 - Open Source Components
 - Partner Companies on the Platform
 - Open Data for Users but still privacy
 - No Data harvesting from drivers, users, ...

Blogging **Internet of Things**
Technology inspiring a connected life
<http://blog.bosch-si.com>



Q & A

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