



XVIII Foro
Mundial
de la Calidad y de la
Gestión para la Mejora
INLAC 2014
27 al 30 de Mayo • Cancún, México

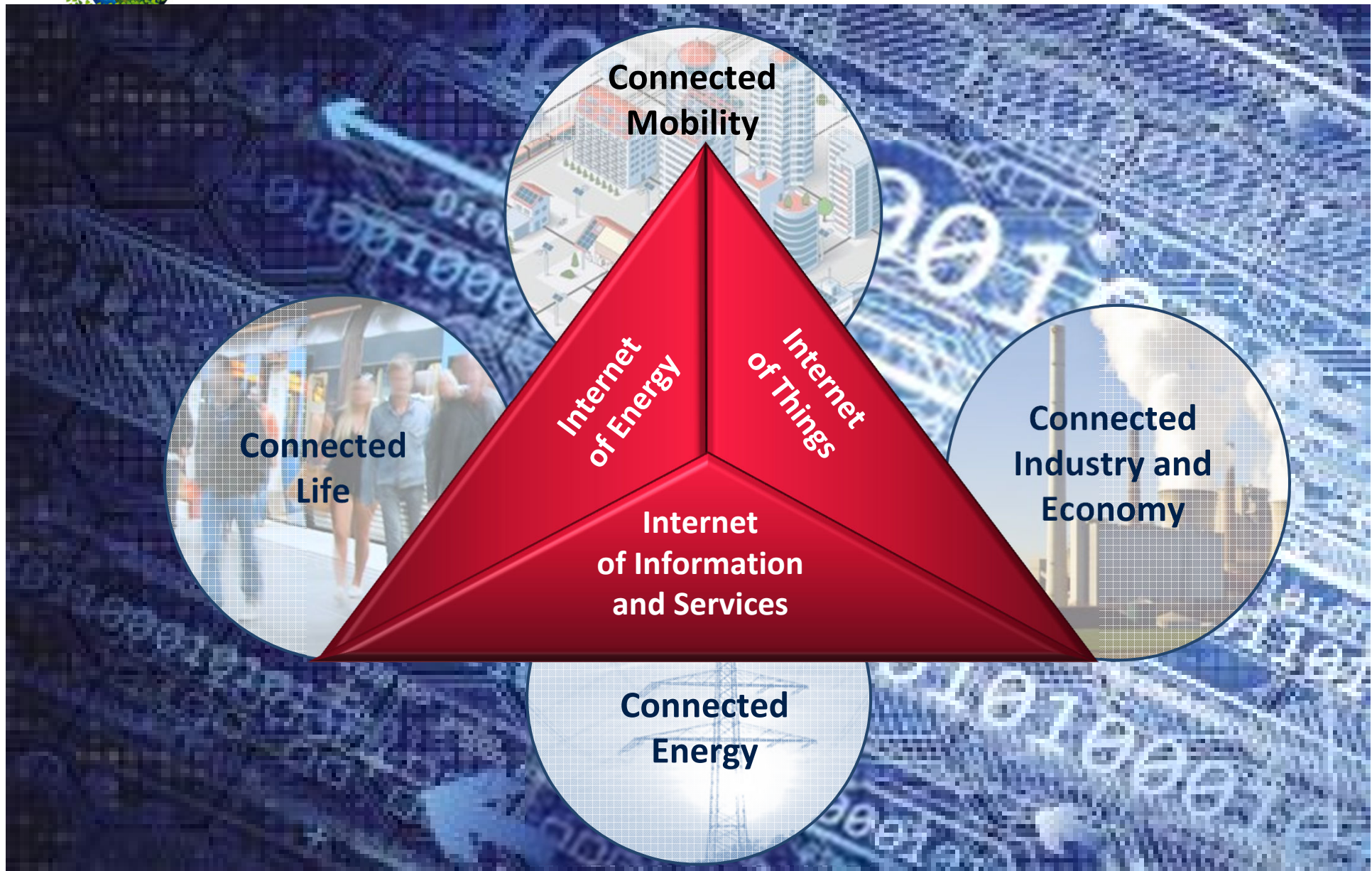
Strategies to potentiate the
capacity of the organizations



Leo Stuehler
Alemania



The challenge – The Internet of Everything





Agenda

■ Introduction - The Fundamental Concepts “System” and “Process”

■ Strategic Key Elements of the Organizations

■ Performance Analysis and Evaluation

■ Summary



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Introduction - The fundamental concepts “System” and “Process”

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Motivation – Why think about systems ?



“**System**” is the most widely used concept in the history of mankind to understand, describe, investigate and communicate about all aspects of the World, e.g.

- **Human systems:** cells, organs, body, family , states, groups, organizations, games, sports, religions, culture
- **Natural systems:** elementary particles, atoms, molecules, flora, fauna, weather, ocean, solar system, The Universe
- **Technical systems:** cars, trains, airplanes, TV, mobile phone, computer, Internet, energy systems, IT systems
- **Business systems:** currencies, investment & financing, insurance



The Fundamental Concept “System”

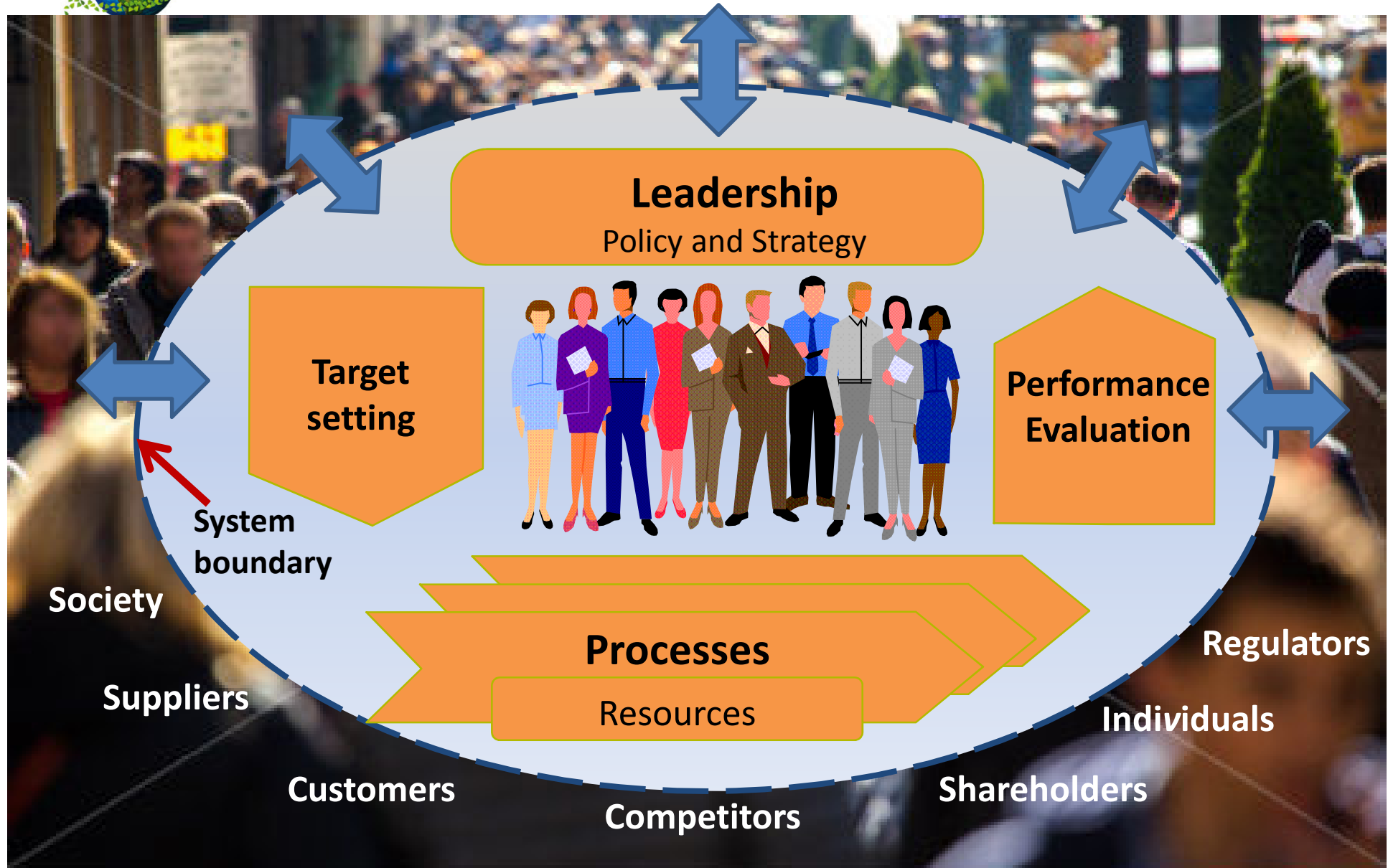
Definition:

Set of interrelated elements considered in a defined context as a whole and separated from their environment by an imaginary boundary

- **Elements** of a system may be natural or man-made material objects (tangible), as well as modes of thinking and the results thereof (intangible)
- **Three important aspects of a system** to be considered:
 - The characteristics of each individual element
 - The relationship and interaction between these elements
 - The impact of the system as a whole on its environment
- The term "system" should be qualified when it is not clear from the context to what it refers, for example control system, calorimetric system, system of units, transportation system, security system, periodic system of elements, management system, etc.



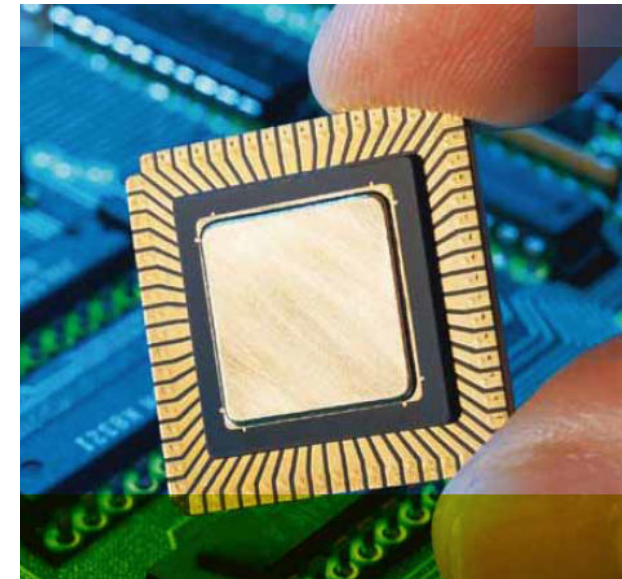
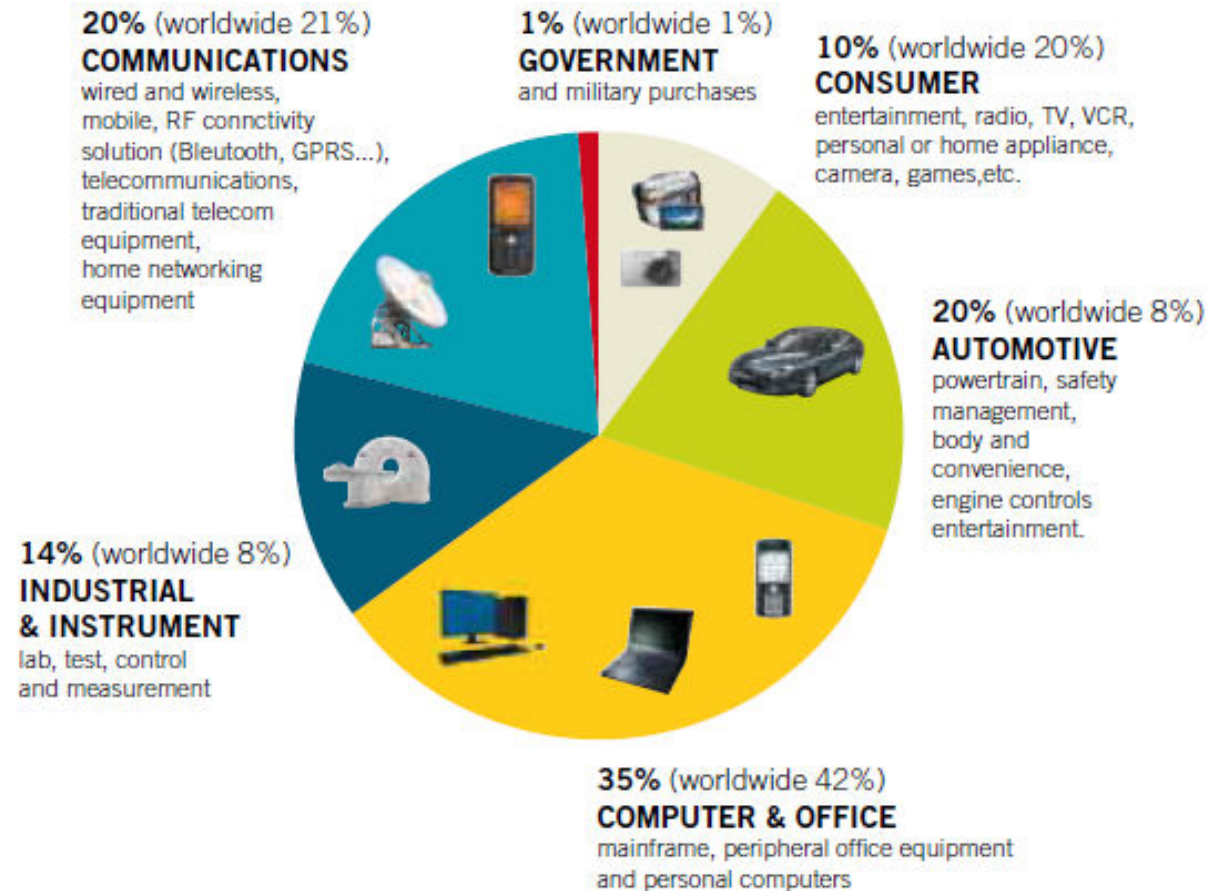
Example: A generic system model of an Organization





Example: Semiconductors, the ubiquitous systems

Semiconductor consumption by sectors in Europe (and worldwide)





Motivation – Why think about processes ?

“**Process**” is the most widely used concept in the history of mankind to understand, describe, investigate and communicate about all **time related aspects** of the World, e.g.

- **Human processes:** from birth to death, working, playing, making music, writing, singing & dancing, eating & drinking , etc.
- **Processes in nature:** hydrological cycle, erosion, weather phenomena (rain, hailstorms, tornados, hurricanes, tsunamis), spontaneous chemical reactions (explosion, corrosion, life cycles of fauna and flora
- **Technical processes:** controlled ways of transforming matter or energy into desired forms of results
- **Business processes:** ... too many !



Definition “Process”

- Set of **interrelated** or interacting **activities** which transforms inputs into outputs (ISO 9000:2005)
- **Types of activities** include
 - identification,
 - transformation,
 - transportation and
 - storageof objects
- Therefore “process” can be considered as a specific category of systems



Agenda

- Introduction - The Fundamental Concepts “System” and “Process”



Strategic Key Elements of the Organizations

- Performance Analysis and Evaluation

- Summary



Strategic Key Elements of the Organizations

- Purpose of the organization
- Products and Services
- Processes
- People
- Partner
- Place



Key Element: Purpose of the organization

Main aspects

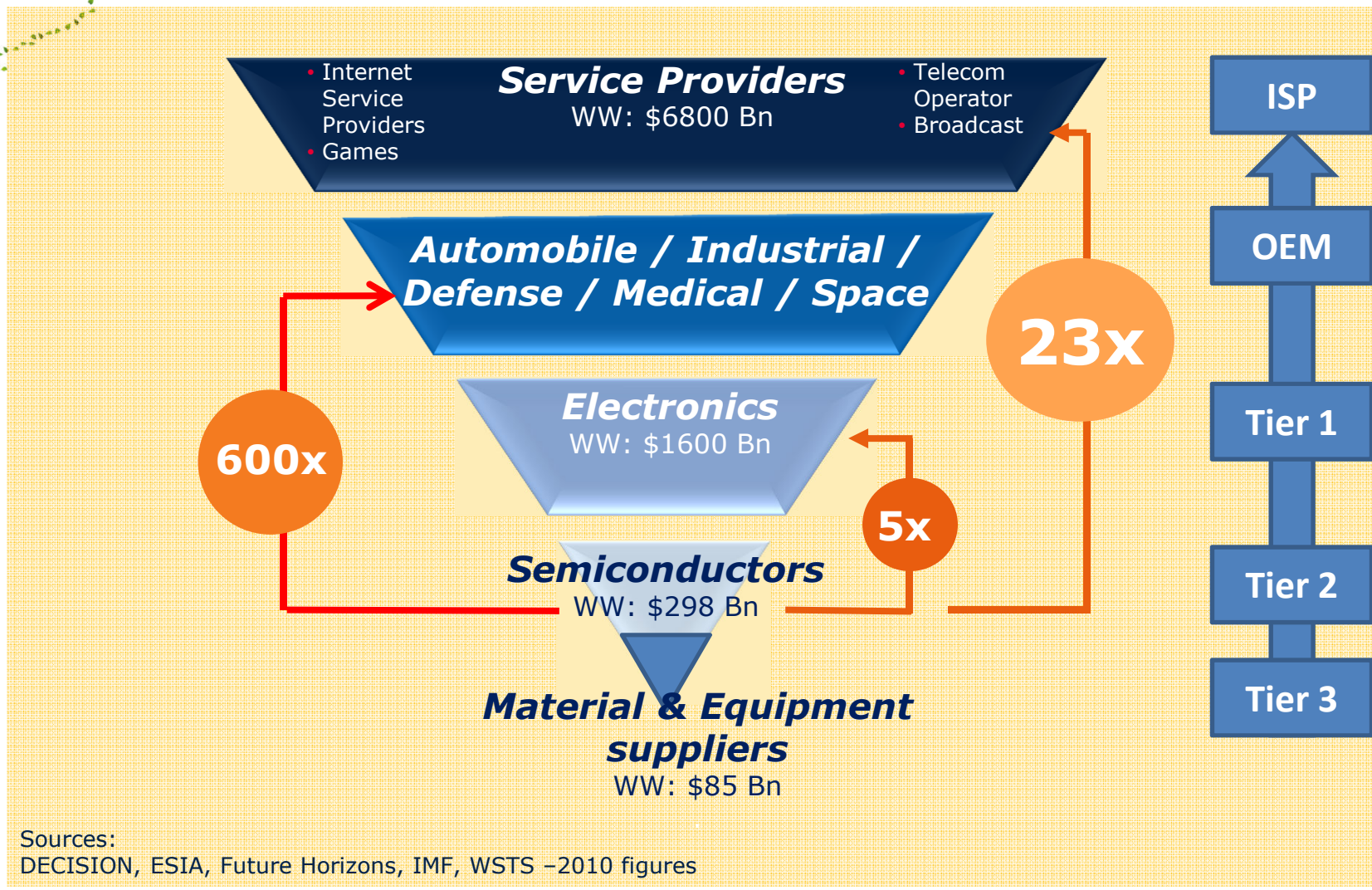
- Determine the context of the organization
- Create and share a powerful Vision (or leave it!)
- Communicate a clear Mission Statement (or leave it!)



Example: Context of the organization (1/3)



Semiconductors, a key enabling technology with big leverage



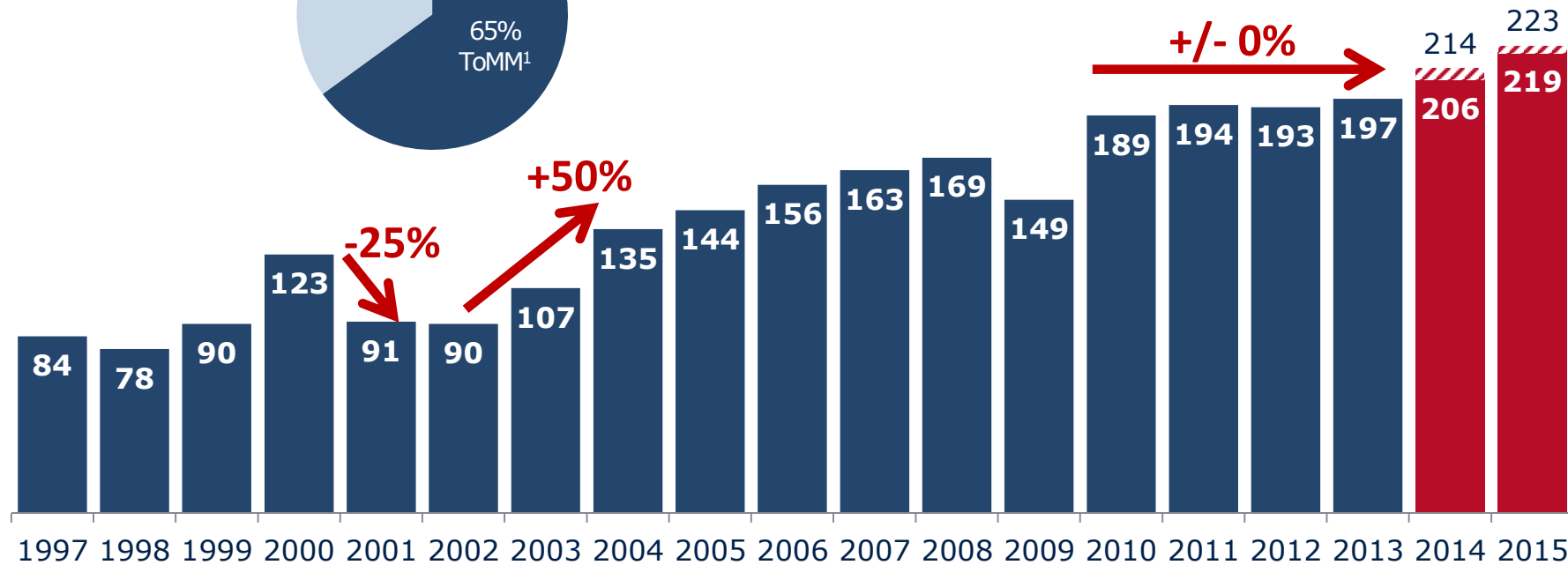
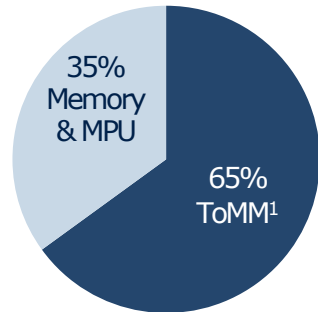


Example: Context of the organization (2/3)



Global Semiconductor Market (in Bn USD) (w/o Memory, w/o Microprocessor)

Total 2013: USD 306 bn



■ Market size (revenue) ■ Forecast revenue range

¹ ToMM: Global semiconductor market w/o Memory, w/o Microprocessor; nearly 2/3 of the total semiconductor market are relevant for Infineon

Source: WSTS for historical data. Forecast: Ø of WSTS, IHS, Gartner, IC Insights; last update April 17, 2014



Example: Context of the organization (3/3)

Infineon provides semiconductor and system solutions, focusing on three central needs of our modern society:

Energy Efficiency



Mobility



Security



Automotive Division



Industrial Power Control Division



Power Management & Multimarket Division



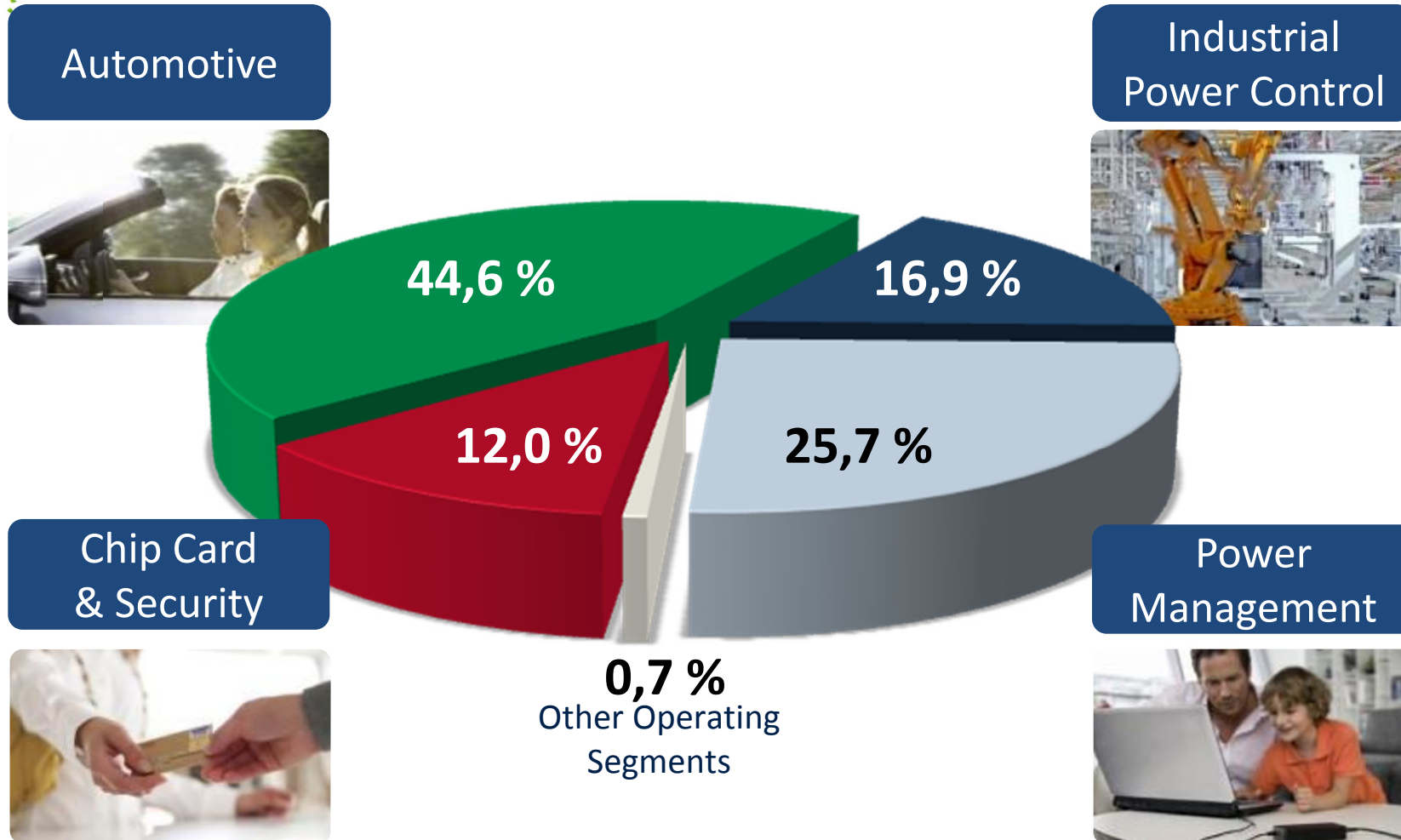
Chip Card & Security Division



Example: Infineons product portfolio



Revenue by Segments (FY 2013: € 3,843 Mio.)





Example: Mission statement



Infineon
Compass



- We are the semiconductor innovation leader for Energy Efficiency, Mobility and Security
- Our solutions help modern society to grow while preserving our environment.
- This reflects Infineon's responsible reaction to worldwide changes like globalization, climate shift and population increase
- We stand for high performance to deliver the best to our customers, employees and shareholders – anywhere, anytime



Key Element: Products and Services

Main aspects of value proposition to the markets

- Front runner vs follower
- Standard products vs customer specific designs
- Mass production vs small volume
- Short innovation cycles vs stable supply over years
- Quality and reliability requirements



Did YOU know that **TriCore**TM ...

- ... was the first 32-bit automotive microcontroller with integrated DSP functionality?
- ... is now in its fifth generation, from the earliest 250nm AUDO 1 family to the new, cutting-edge, 65nm AURIXTM family?
- ... is the first with the secure hardware extension module for theft protection and tamper resistance?
- ... is the first with a complete safety software package up to ASIL D?
- ... is the microcontroller of choice for **over 50 automobile brands** worldwide?
- ... is the clear market leader for engine control applications?
- ... is used in **every 2nd new car produced** today?





Example: Commitment to Quality



Infineon's Next Level of Zero Defect Program – On the Way to Zero-Defect Products and Services

- **Back End Automation Roadmap project (BEAR)** reduces manual handling
- “Top 5 Defects Reduction in Backend” addresses technical and systemic root causes
- **Quality Firewall: Subproject “Highest outgoing product quality by intelligent outlier screening”**
- **Extend “Next Level of Zero Defect” into supplier base**



Key Element: Processes

Main aspects

- The 4 elements of a process management system
- Target setting and deployment
- Resources (other than people)
 - Capture the organizational knowledge
 - Technology portfolio
 - Infrastructure
 - “Make or Buy”
 - Level of detail regarding documentation



The Fundamental Concept “Process”

A Process Management System based on 4 elements

**Definition
of “Process”**

**Assignment of Roles
and Responsibilities**

**The Building Blocks
of a Generic Process
Model**

**Organization
Specific Business
Process Framework**











Example: Roles and Responsibilities



Role	Process Owner	Process Leader	Process User
Tasks	<p>Expert and “architect” of the process</p> <ul style="list-style-type: none">■ Define, review, & release processes■ Drive change projects■ Prepare process documentation■ Coaching of process leaders and process users■ Align with other process owners and contact partners	<p>Head of process users in his area of effectiveness - “runs the business”</p> <ul style="list-style-type: none">▪ Provide necessary process resources▪ Target setting (KPIs)▪ Process release together with process owner▪ Monitors process performance▪ Initiate measures and escalate in case of deviations▪ Support process owner for improvement of processes	<p>Every person performing activities within a process</p> <ul style="list-style-type: none">▪ Execute the process in a customer- and output oriented way▪ Adhere to all relevant rules and regulations▪ Identify and report deviations to process leader▪ Identify areas for improvement and report to process owner or process leader

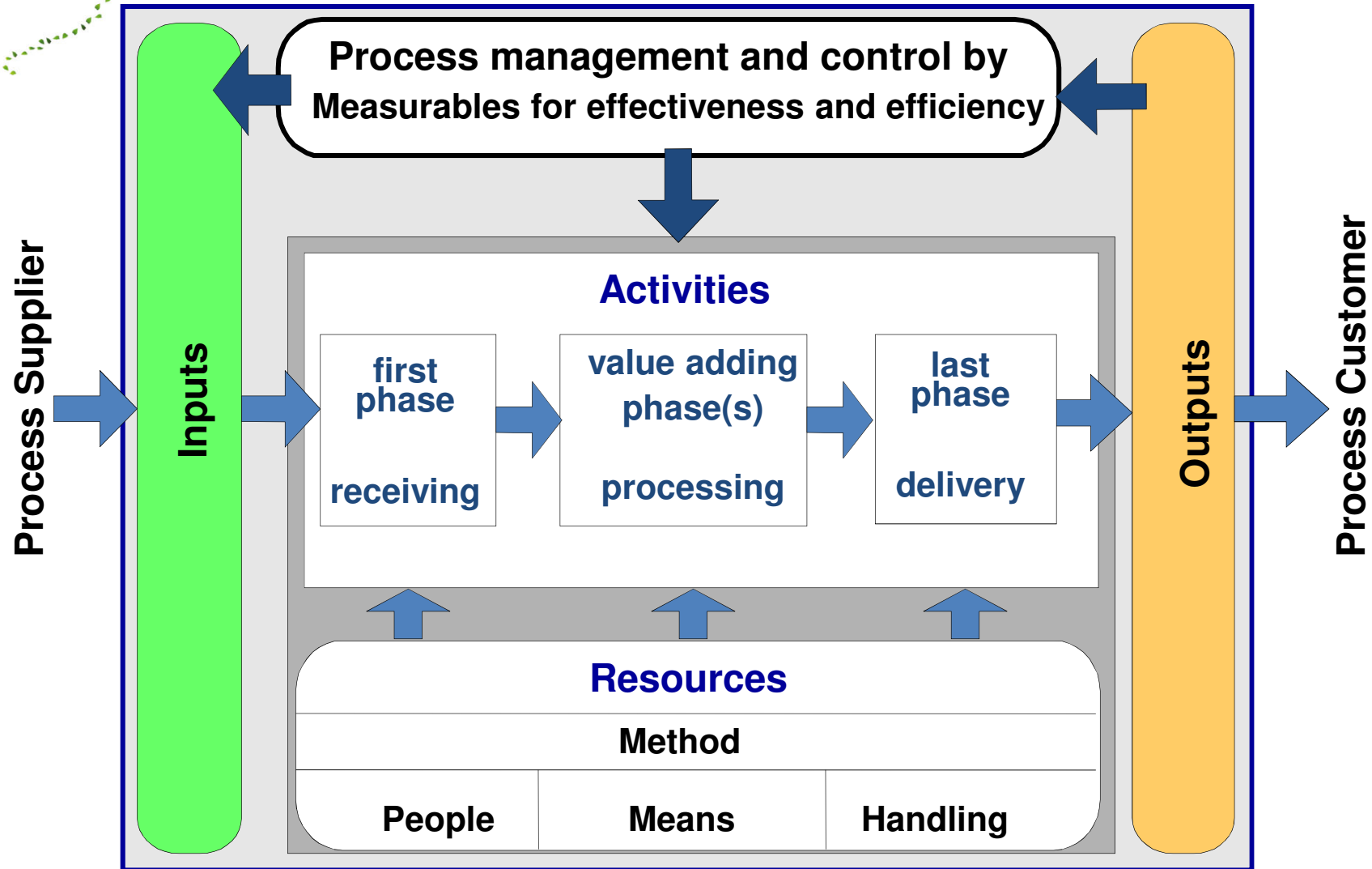


Example: Roles in Process Management

Process Owner	Process Leader	Process User
1 Composer	Conductors (a few)	Musicians (many)
 <p>Symphony No. 9 in D Minor Op. 125</p> 	 <p>BEETHOVEN · SYMPHONIE NO. 9 Gwyneth Jones · Hanna Schwarz · René Kollo · Kurt Moll Konzertvereinigung Wiener Staatsopernchor Wiener Philharmoniker · Leonard Bernstein</p>	
 <p>Symphony No. 9 in D Minor Op. 125</p> 	 <p>BEETHOVEN · SYMPHONIE NO. 9 Janet Perry · Agnes Baltsa · Vinson Cole · José van Dam Wiener Singverein BERLINER PHILHARMONIKER · HERBERT VON KARAJAN</p>	



Example: A generic Process Model

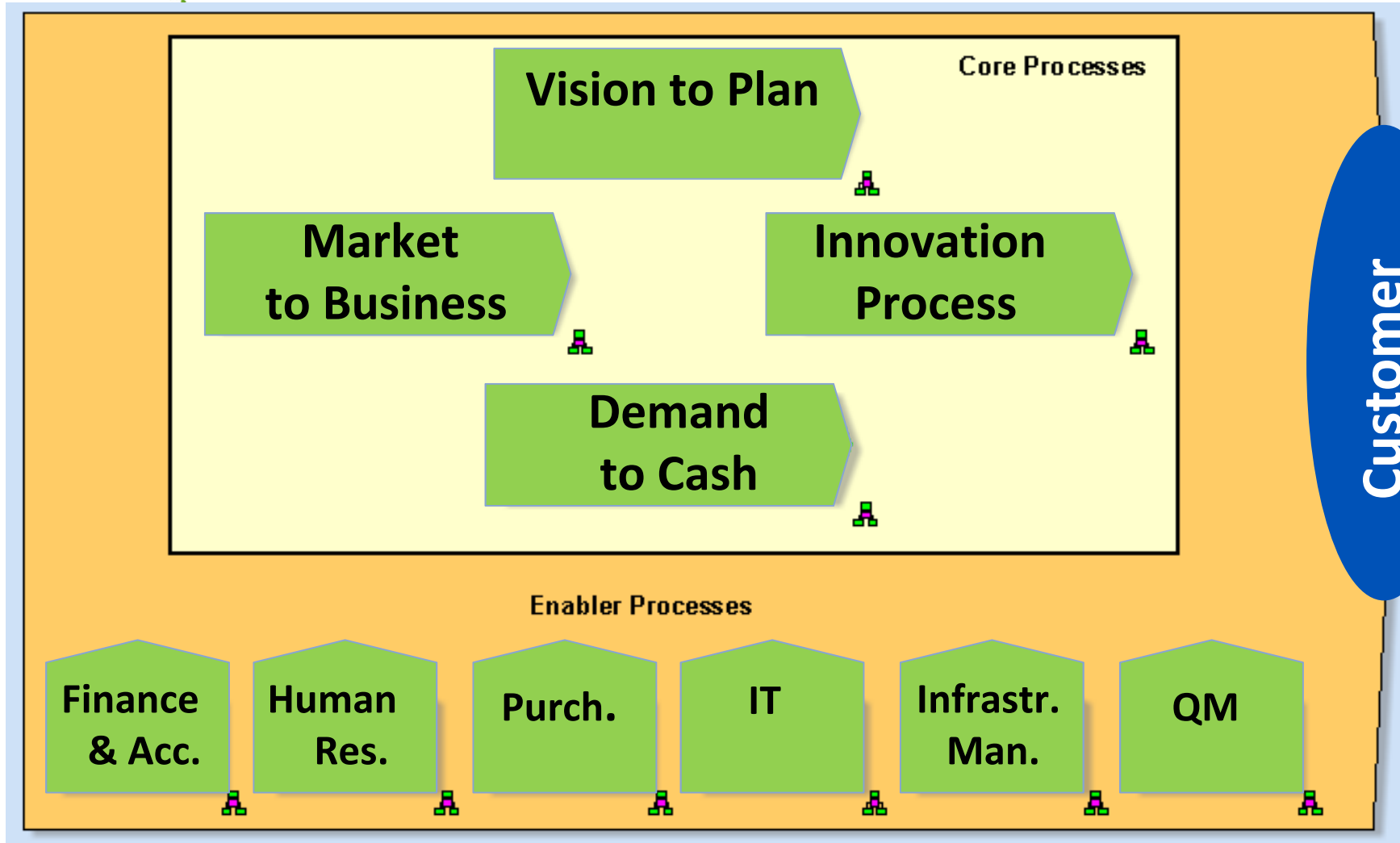




Example: Process framework evolution



Current version 5 since 2013

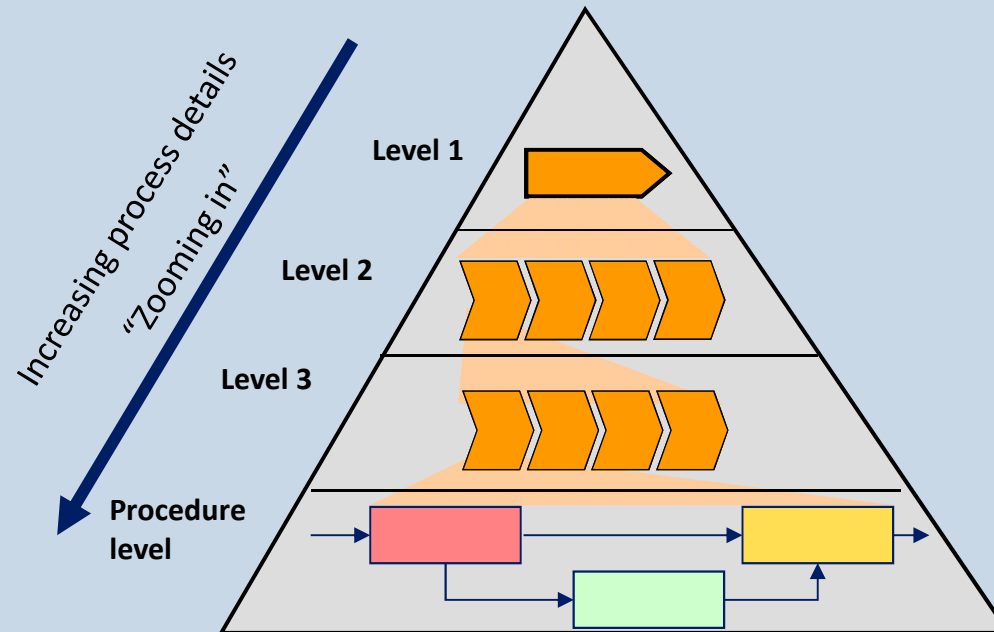




Example: Process documentation hierarchy



- contains **all** business relevant processes
- documents business processes with the same software tool ([ARIS](#)), and
- assures consistency of information by lean source management





Key Element: People

Main aspects

- Recognize the demographic development and change of values
- Cultivate an image as an attractive employer
- Recruiting, competency development, retention, phase out
- Leadership and management style
- HR capacity flexibility
 - Permanent vs fixed-term contracts
 - Full time vs part time employment
 - Share of temporary work force



Example: Value based leadership



Four core values are the driving force behind our day-to-day work

We commit :

- We satisfy our customers' needs
- We walk the extra mile for our commitments
- We offer the best price-performance value

We innovate :

- We learn and get better every day
- We discover and develop new opportunities
- We excel in outstanding engineering

We partner :

- We openly cooperate across boundaries
- We respect and help each other
- We team up for the best results

We perform :

- We embrace constructive conflict
- We are accountable for our results
- We actively capture our profit potential



Example: Attractive employer



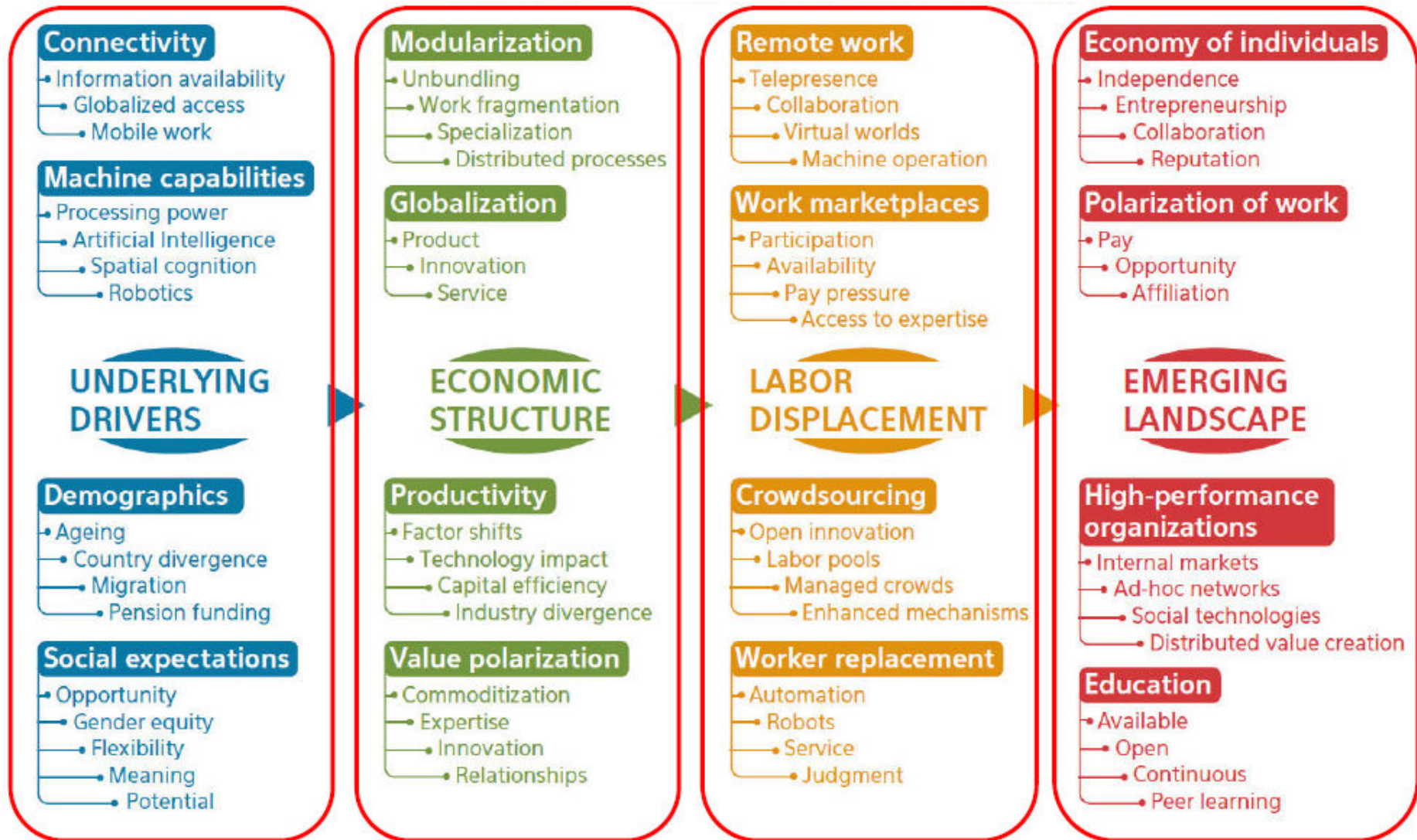
4500 showed up at the Family Day May 16th, 2014 in Villach/Austria





Considering the Future of Work

From the [report](#) "The New World of Business" by Ross Dawson (April 2014)





An Uncomfortable Truth

“No matter who you are,
most of the smartest people
work for someone else.”

Bill Joy, Co-Founder, Sun Microsystems



Key Element: Partner

Main aspects

- Drive joint technology development with **suppliers** and **competitors**
- Participate in industry alliances/networks with **competitors**
- Develop customized product and services in joint undertakings with **customers**
- Cooperate with **stakeholders** in standardization organizations
- Partner with **academia** and **public authorities**
- Organize and encourage **virtual decentralized project teams**



Example: Partnership with customers



Electromobility: Joint development of power electronics for battery management solutions and micro-controllers and sensors for motor and transmission management and lighting



BMW i3 and i8



Example: Partnership with competitors



Standardization Consortia (examples)

(M), (P)



(M), (P)



(M), (P)



1990

(M), (P)



1994

(M), (P)



1999

(M)



2000

(M)



2003

(M), (P)



2003

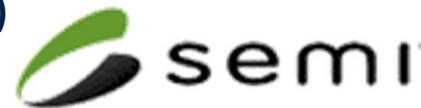
AUTOMOTIVE OPEN SYSTEM ARCHITECTURE

(S)



1963

(S)



1970

(M), (P)



2011

(M), (P)



1996

(M), (P)



LOCAL INTERCONNECT NETWORK

- (M) Infineon holding a Corporate Membership
- (P) Infineon participates in standardization work
- (S) Infineon subscription for standards



Key Elements: Place

Main aspects

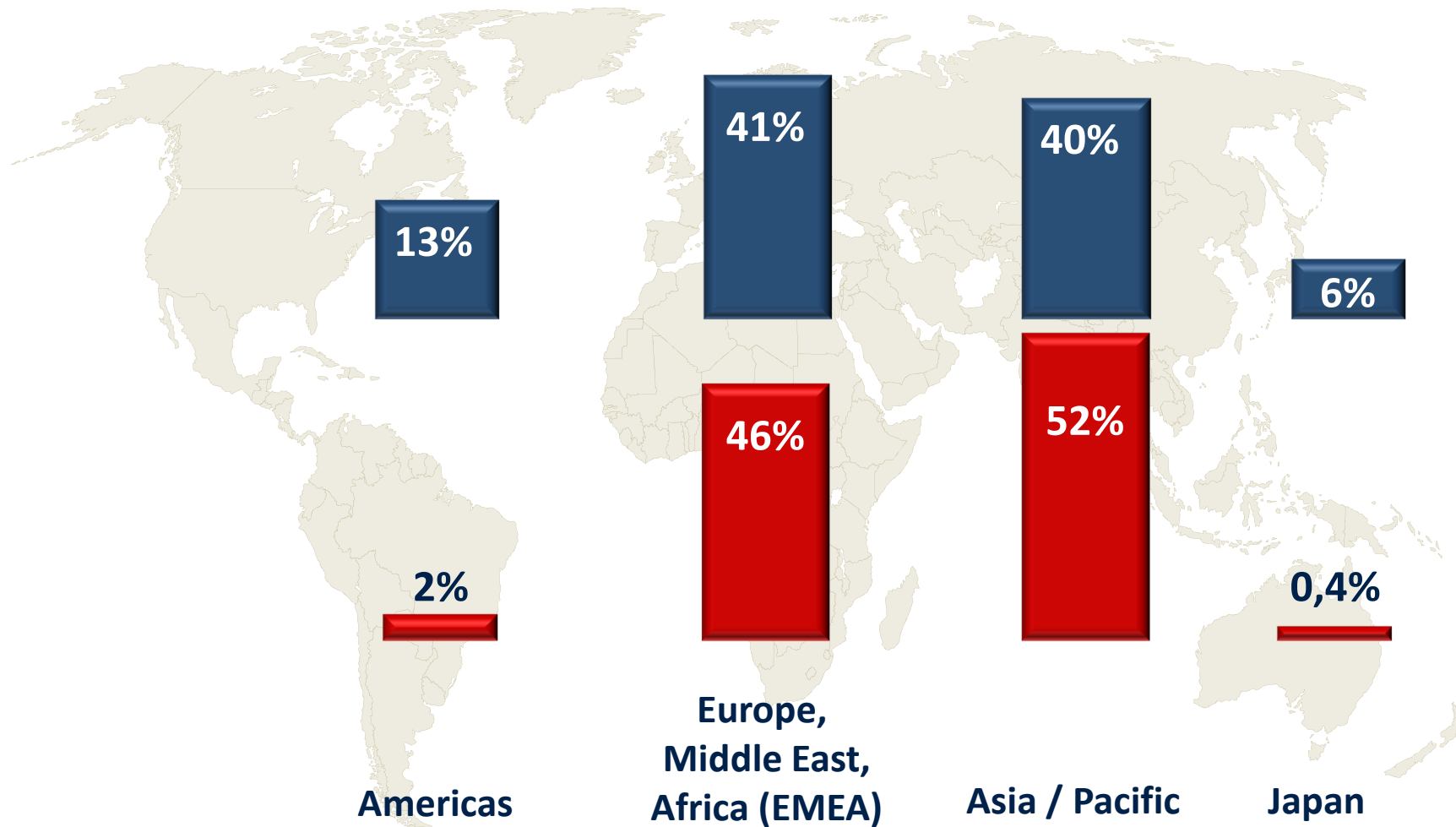
- Local, regional, global presence
- Virtual presence – Social media



Example: Alignment of global presence



- Revenue by regions (FY 2013: € 3,843 Mio.)
- Employees by regions (28.100 as of 2014-03-30)





Example: Reach out in social networks



The image shows a collage of social media pages for Infineon Technologies AG. On the left is the YouTube channel page, featuring a search bar, 'What to Watch' section, and 'BEST OF YOUTUBE' categories like Popular on YouTube, Music, Sports, and Gaming. Below these are 'Browse channels' and a 'Sign In' button. In the center is the Facebook profile page for Infineon Technologies AG, which includes a cover photo of wind turbines, a profile picture with the Infineon logo, and a bio stating 'Welcome to the official Infineon Technologies corporate channel...'. It also shows social media links for Photos, Twitter, YouTube, and Timeline. On the right is the Twitter profile page for Infineon (@Infineon), displaying a bio, a 'Follow' button, and a tweet from Fraunhofer IPMS retweeted by Infineon.



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- ➔ **Performance Analysis and Evaluation**

- Summary



Performance Analysis and Evaluation

- **Audits**
- **Assessments**
- **Benchmarking**



Analysis and Evaluation: Audits

■ Definition (given by ISO 9000:2005)

- Systematic, independent and documented **process** for obtaining evidence and evaluating it objectively to determine the extent to which the audit criteria (*requirements*) are fulfilled.

Note: Audit criteria can be defined by standards or regulations

■ Options:

- Focus: organization, management system, process, product & service, people
- First Party Audit
(Internal audit conducted by the organization itself)
- Second Party Audit
(conducted by customers or other persons on their behalf)
- Third Party Audit
(conducted by independent auditing organizations, such as regulators or those providing registration or certification services)

■ Result: Statement regarding “Compliance”



Example: Layered audit scheme



External requirements (e.g. standards, customer requirements)



Quality Management System

Integrate and Implement !

IFX Organisation Function oriented

Business Process Framework
Infineon Process Framework

Customer

Internal Audits (yearly cycle)

Second Party Audits (on Customer demand)

Third Party Audits by an external auditor (yearly)



Analysis and Evaluation: Assessments

■ Definition

- Comprehensive evaluation of organizational performance against criteria as defined by excellence models

■ Options

- Self Assessment, Third Party Assessment (or combined)

■ Excellence Models / Maturity Models

- EFQM Excellence Model
- Malcolm Baldrige Model
- Capability Maturity Model Integrated (CMMI)
- THE SHINGO MODEL FOR OPERATIONAL EXCELLENCE
- etc.

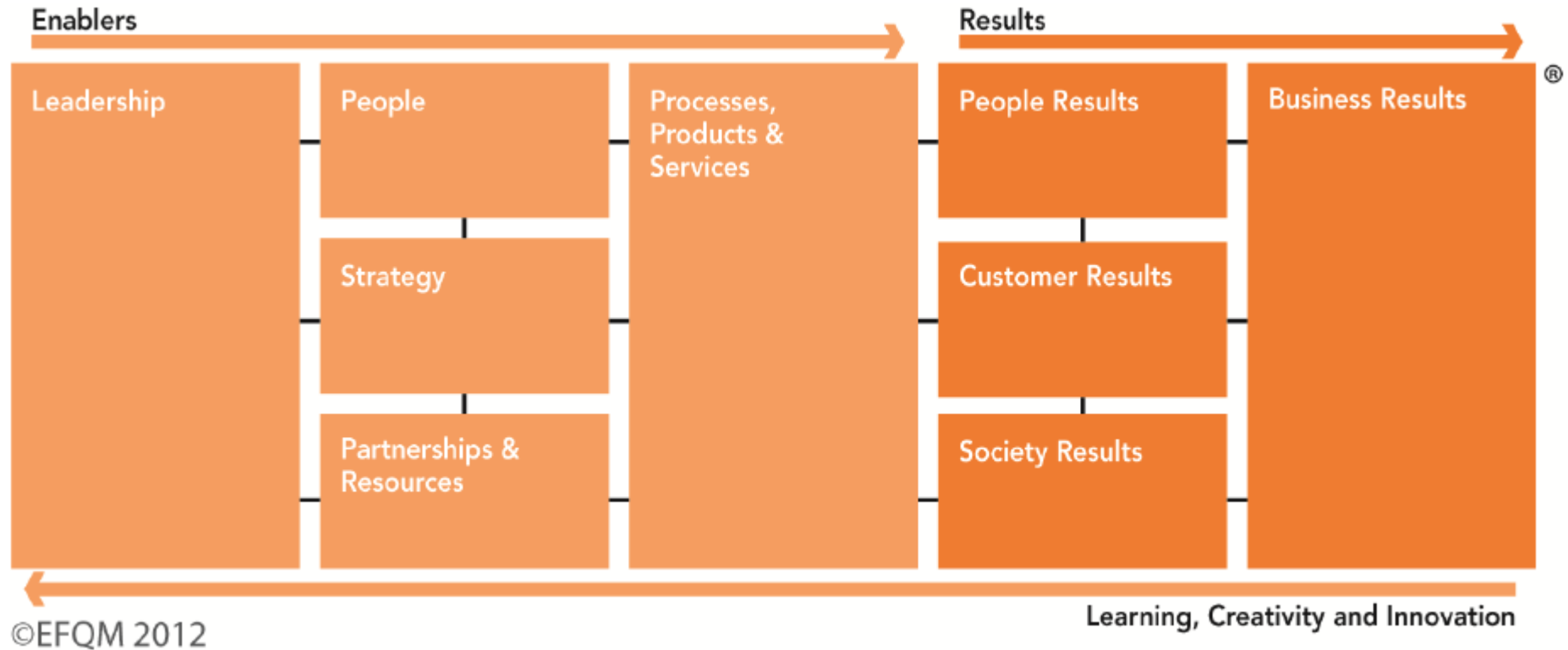
■ Result: Statement regarding “Level of Maturity”



Example: The [EFQM](#) Excellence Model

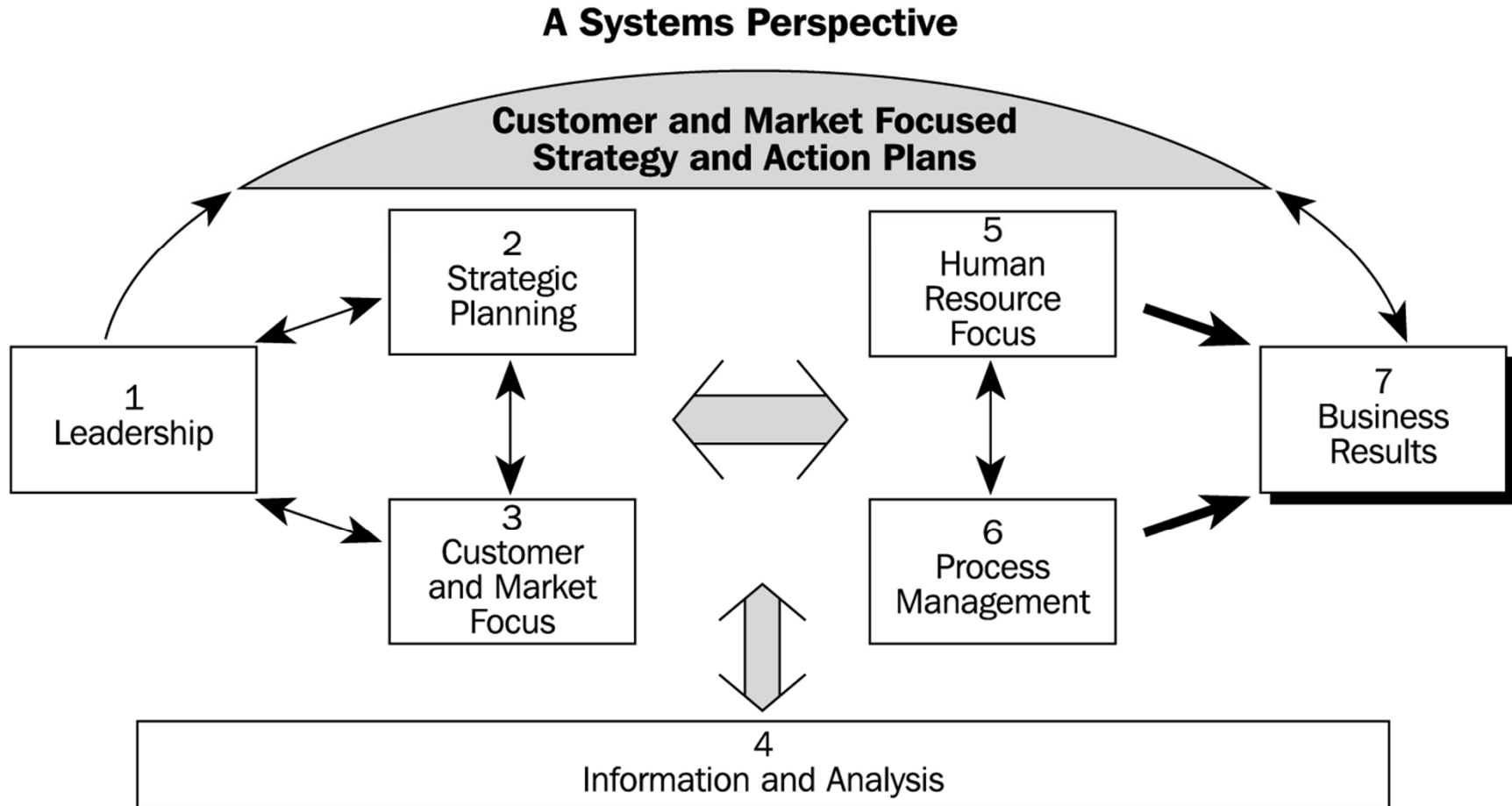


Founded 1989 in Brussels





Example: The [Malcolm Baldrige Model](#)





Analysis and Evaluation: Benchmarking

■ Definition

- **Process** of identifying, sharing, and adapting knowledge and best practices from other organizations

■ Options

- Focus: entire organization or processes, products & services, people
- Customized or standardized questionnaires
- Self orchestrated or moderated by BM providers
- Competitors or companies from different sectors as BM partner
- Anonymously (e.g. „notary statistics“) or with identities disclosed

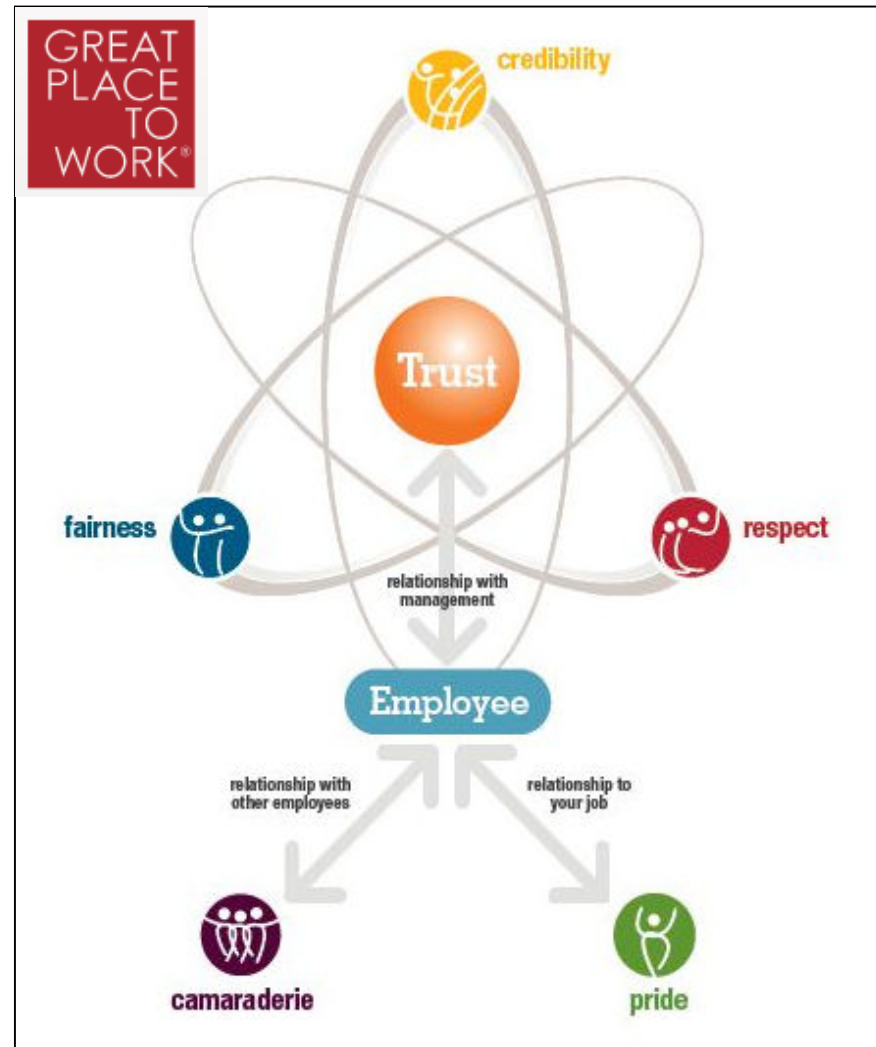
■ Result: Statement regarding performance gaps and areas for improvement



Example: Great Place To Work (GPTW)



Founded 1989 in the US and represented in 50 countries



"A great place to work is one in which

- you trust the people you work for,*
- have pride in what you do, and*
- enjoy the people you work with."*



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■ Introduction - The Fundamental Concepts “System” and “Process”

■ Strategic Key Elements of the Organizations

■ Analysis and Evaluation

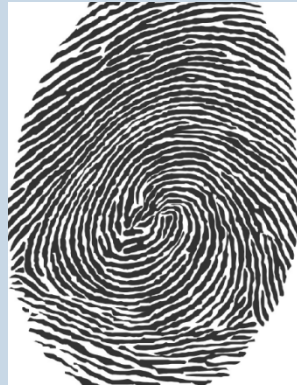


Summary



Summary

- As we have seen Strategic Planning is about **choices**
- By making the choices regarding the main aspects within the presented strategic key elements the organization will establish its “**Unique Strategic Code**”



- By applying regular and consistent performance analysis and evaluation the organization identifies risks and opportunities to remain fit for the future in order not only to stay in the game, but to be among the winners



Just a final question . . .



“Does it really work??”



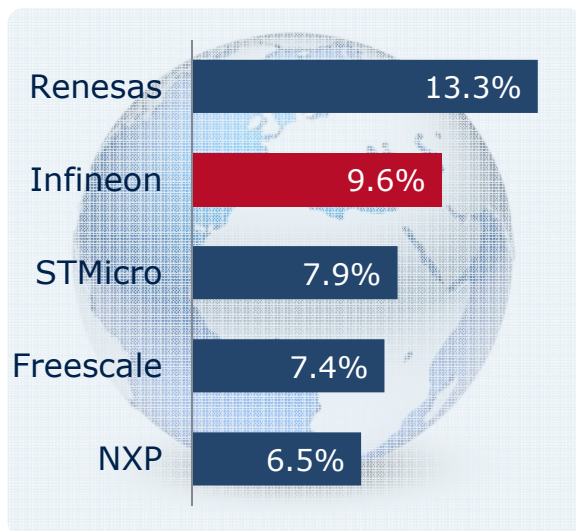
Final answer is “YES, for the time being!!”



Infineon holds Top Positions in all major product categories –
For more details check www.infineon.com

Automotive semiconductors

total market in 2013:
\$25.1bn



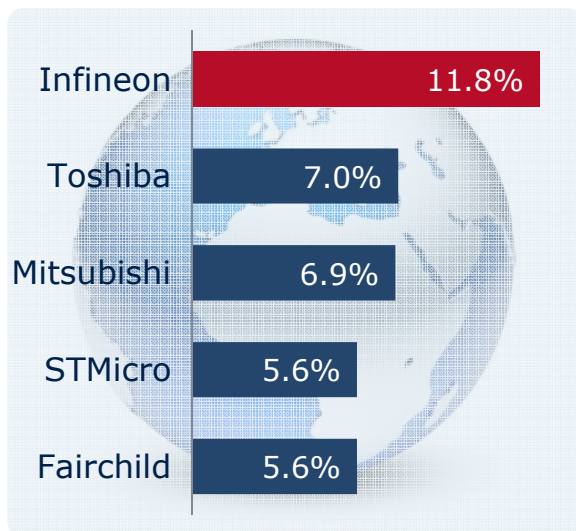
Automotive semiconductors incl. semiconductor sensors.

Source: Strategy Analytics, April 2014.

30/05/2014

Power semiconductors

total market in 2012:
\$15.0bn

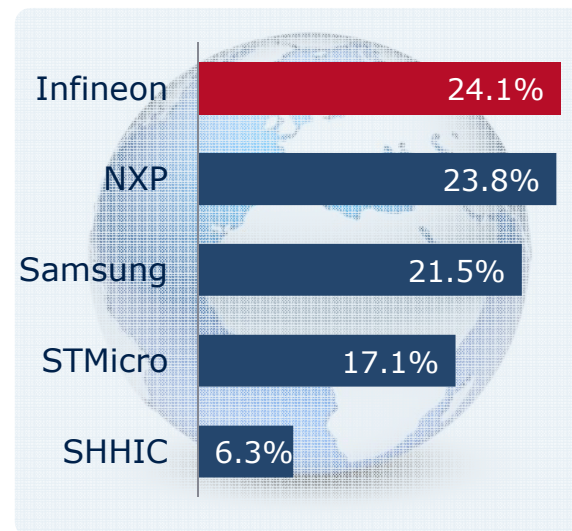


Discrete power semiconductors and power modules.

Source: IHS, December 2013.

Smart Card ICs

total market in 2012:
\$2.24bn



Microcontroller-based smart card ICs.

Source: IHS, September 2013.



Awards for Division "Chip Card & Security"



German Prize for IT Security (November 29, 2012)

"Infineon's research project "Cryptographic Protocol with Inherent Side-Channel Resistance" was honored with the 1st prize. The innovative encryption scheme offers data security for price-sensitive mass market products e.g. electronic ski passes, library cards or public transport."



Sesames Award 2012 (November 6, 2012)

"Infineon has been awarded the chip card industry's Sesames Award 2012 for the most innovative product in the category Transportation. The SOLID FLASH™-based SLS 32TLC security controller from Infineon is the industry's first solution that supports conventional public transportation implementations as well as CIPURSE™, the newly defined open standard for the transport industry."



Nomination for the Federal President's Award for Innovation and Technology (September 12, 2012)

"Integrity Guard" digital security technology has been nominated for the "Deutscher Zukunftspreis 2012". Infineon developed this new generation security technology for applications that require the highest level of data security and long time resilience."



Awards for Division “Automotive”



Pinnacle Award for Technology (September 2013)

Honoring Infineon for its innovation, which provides *"Delphi with significant competitive advantage"*, and the *"excellent customer service. Infineon is the first semiconductor supplier ever to receive the technology award."*



Supplier Performance Award (2008)

Automotive Supplier of the Year (2009,2010,2011)

Innovation Award 2012 (June 2013) - *presented by Continental for the first time.*



Technical Development Award 2011 (July 30, 2012)

"Denso presents its awards to its best suppliers for quality, pricing, technical development, and global collaboration. Infineon is the first non-Japanese component supplier to receive a Denso Technology Development Award."



• 7 Quality Awards in 2004, 2006, 2007, 2008, 2009, 2010 and 2011

• Honor Quality Award for Zero Defect quality over the last 4 years (2010)

• **Excellent Quality Award 2011 (2012-05-30)** – Infineon is the 1st non-Japanese company that received this honor in this highest level category



Bombardier Sustainability Award (July 9, 2013)

"Bombardier Transportation has presented Infineon Technologies AG with its Supplier Sustainability Award 2013. Infineon won the prize for reaching the sustainability goals it had set itself. The Jury deemed Infineon's high level of product responsibility as well as the positive environmental effects its assortment has meant for the sustainable mobility of Bombardier Transportation particularly worthy of a prize."



Elektronik Product of the year award (March 19, 2013)

"Infineon's product family JFETs CoolSiC™ was honored with the "Product of the Year Award" in the category automation from Elektronik. The revolutionary CoolSiC™ SiC JFET family represents Infineon's leading edge solution to bring actual designs towards new and so far unattainable efficiency levels."



Preferred Supplier Award 2013

On the Global Suppliers Day of Schneider Electric Infineon was selected as "Preferred Supplier" 2013. This award was evaluated from more than 100 suppliers worldwide.

"Infineon fulfills the certain expectations about Quality, in time delivery and demonstrated as excellent and open minded business partner."



I have a dream . . .

Imagine what could happen,
if certain two organizations (out of the 32 starters)
manage to potentiate their capabilities
during the timeframe from
Friday, June 13th to Wednesday, July 7th 2014

???



Sunday, July 13th 2014 , 16:00 – Rio de Janeiro





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¡GRACIAS!

