



►► Advances in Global Software Engineering 10 Years of ICGSE

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Medical



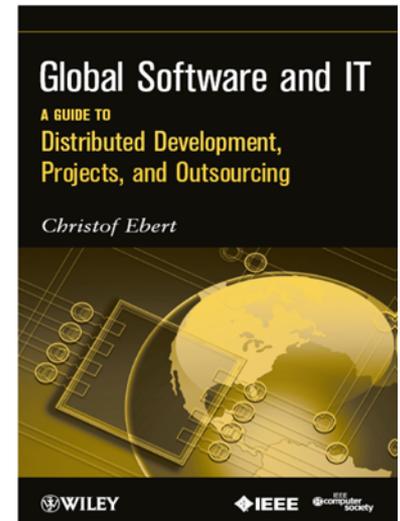
Railway



Christof EBERT

Christof Ebert is managing director at Vector Consulting Services. He supports clients around the world to improve product strategy and product development and to manage organizational changes. Prior to that, he held global management positions for ten years at Alcatel-Lucent.

A trusted advisor for companies around the world, member of industry boards, and professor at the University of Stuttgart, Prof. Ebert authored several books including his most recent book "Global Software and IT" published by Wiley. He received the IEEE distinguished visitor award and is a member of the Alcatel Technical Academy.



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Agenda

Welcome

▶ **Global Software and IT**

Advances

Trends

The Way Ahead

Global Software Drives Global Value



▶▶ Across any walls...

**“Across the Great Wall
we can reach every
corner in the world.”**

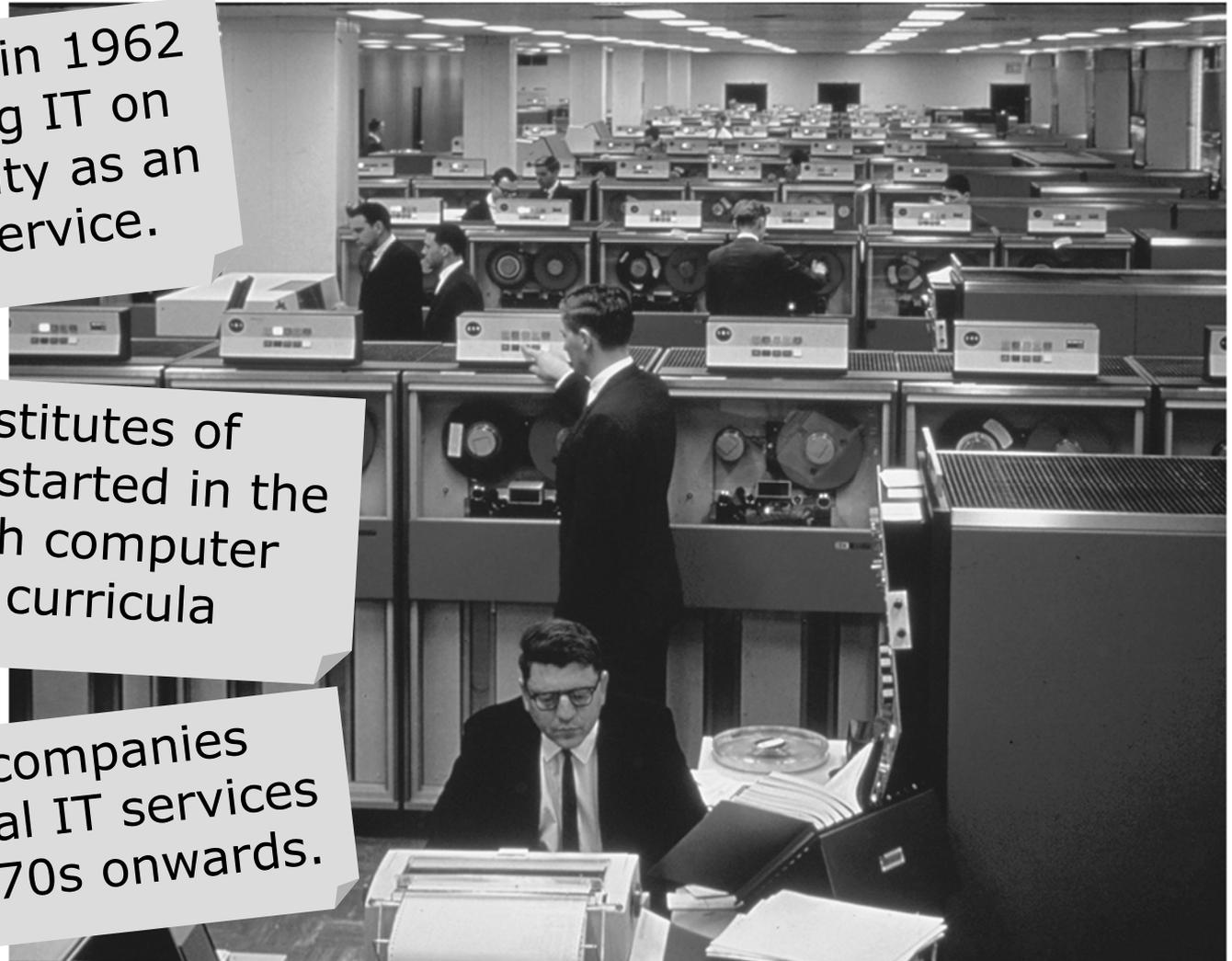
First E-Mail sent from China,
20. Sep. 1987

▶▶ Global Software and IT – Past

EDS started in 1962 with offering IT on spare capacity as an external service.

India institutes of technology started in the 1960s with computer science curricula

Different companies offered global IT services from the 1970s onwards.



Global Software and IT – Presence

“Cost reduction used to be the main trigger, however it is today **flexibility, innovation and efficiency**”

“20% of offshoring is cancelled first year, 50% downstream for not reaching objectives.”

“A major reason for failing offshoring projects is lack of control – projects, intellectual property, engineers.”

“43% of offshoring is moved back to the home country.”



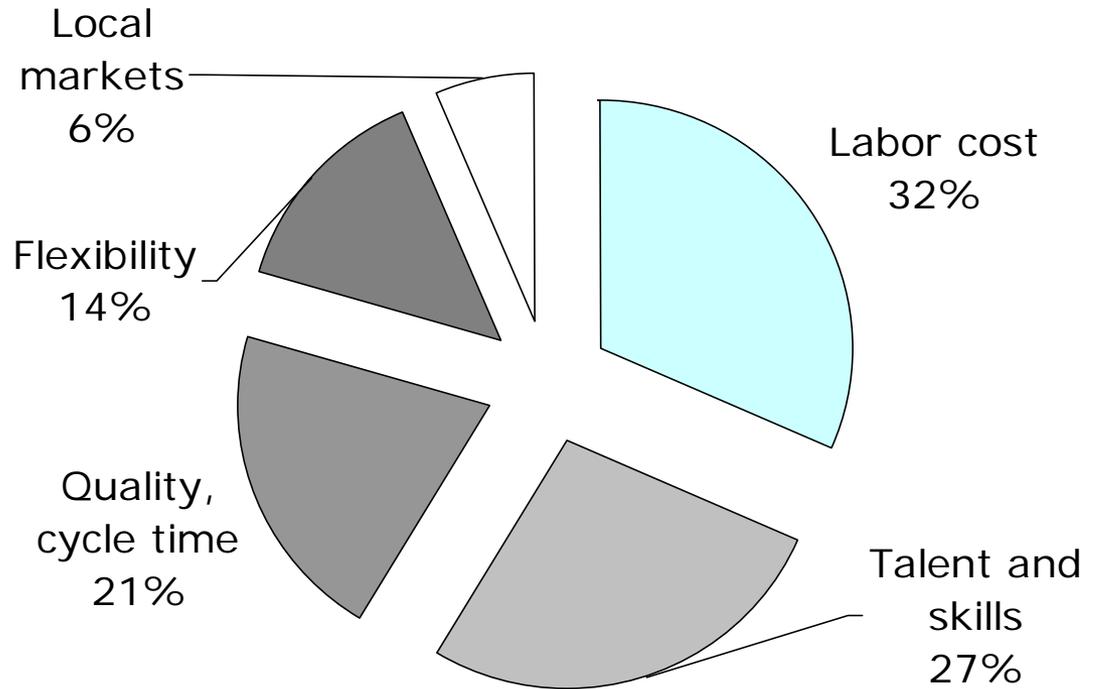
Sources: PWC: Global Software 100 Leaders. Report, 2013, www.pwc.com/gx/en/technology/publications/global-software-100-leaders/index.jhtml . Deloitte: Is Outsourcing Losing Its Appeal? 2013, www.baselinemag.com/it-services/is-outsourcing-losing-its-appeal . Forrester's Forrsights Services Survey, Q2 2012, www.forrester.com/Forrsights+Services+Survey+Q2+2012/-/E-SUS1391

Global Software Engineering: Rewards

Sustainable savings from mature processes with few interface frictions

- ▶ Helpdesk
- ▶ Maintenance, documentation, test
- ▶ Component development

Follow-the-sun and round-the-clock have lower savings



Projects report a 10-20% cost reduction after a 2 year learning curve

Sources: Christof Ebert: Global Software and IT, Wiley 2012; Vector Consulting Services' client survey 2012; Deloitte: Is Outsourcing Losing Its Appeal? 2013, www.baselinemag.com/it-services/is-outsourcing-losing-its-appeal . Forrester's Forrsights Services Survey, Q2 2012, www.forrester.com/Forrsights+Services+Survey+Q2+2012/-/E-SUS1391 .

Global Software Engineering: Challenges

- ▶ **20-40% additional cost** at begin of learning curve for 1-2 years
- ▶ **Over 20% of sourcing contracts are cancelled** in first year
- ▶ **Over 50% do not deliver** according to objectives or strategy and are cancelled downstream
- ▶ **Over 80% of companies are not satisfied** with their global software activities
- ▶ **Increasing unexpected loss of IPR** and technology know-how
- ▶ **Decreasing proficiency level** due to inexperienced hiring

Distance multiplies risks in an otherwise high-risk business

Sources: Christof Ebert: *Global Software and IT*, Wiley 2012; Vector Consulting Services' client survey 2012; Deloitte: *Is Outsourcing Losing Its Appeal?* 2013, www.baselinemag.com/it-services/is-outsourcing-losing-its-appeal . Forrester's *Forrsights Services Survey*, Q2 2012, www.forrester.com/Forrsights+Services+Survey+Q2+2012/-/E-SUS1391 .

Top-Ten Risks and Mitigation – 10 Years of ICGSE

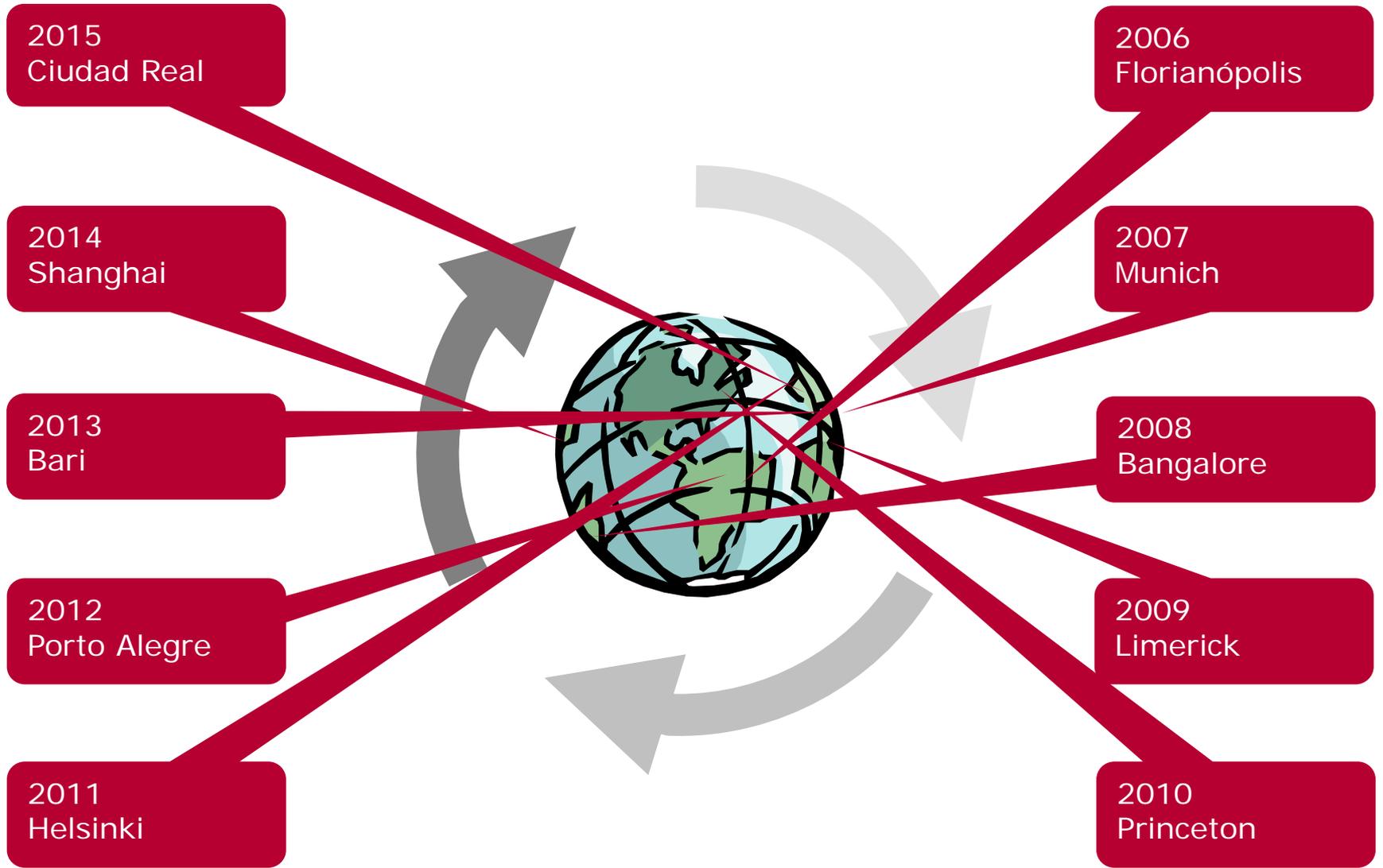
1. Project delivery failures
2. Insufficient quality
3. Distance and culture clashes
4. Staff turnover
5. Poor supplier services
6. Instability with overly high change rate
7. Insufficient competences
8. Wage and cost inflation
9. Lock-in
10. Inadequate IPR management



		Success Factors		
		Competences	Communication	Collaboration
Benefits	Flexibility	Strong Team	Results-driven Leadership	Suitable Soft Skills
	Innovation	Continuous Knowledge Management	Value and Customer Orientation	Reliable Partners
	Efficiency	Good Process Capabilities	Transparent Organization	Optimized IT Infrastructure

Source: Christof Ebert: Global Software and IT, Wiley 2012.

10 Years of ICGSE – 10 Years of GSE Fertilization



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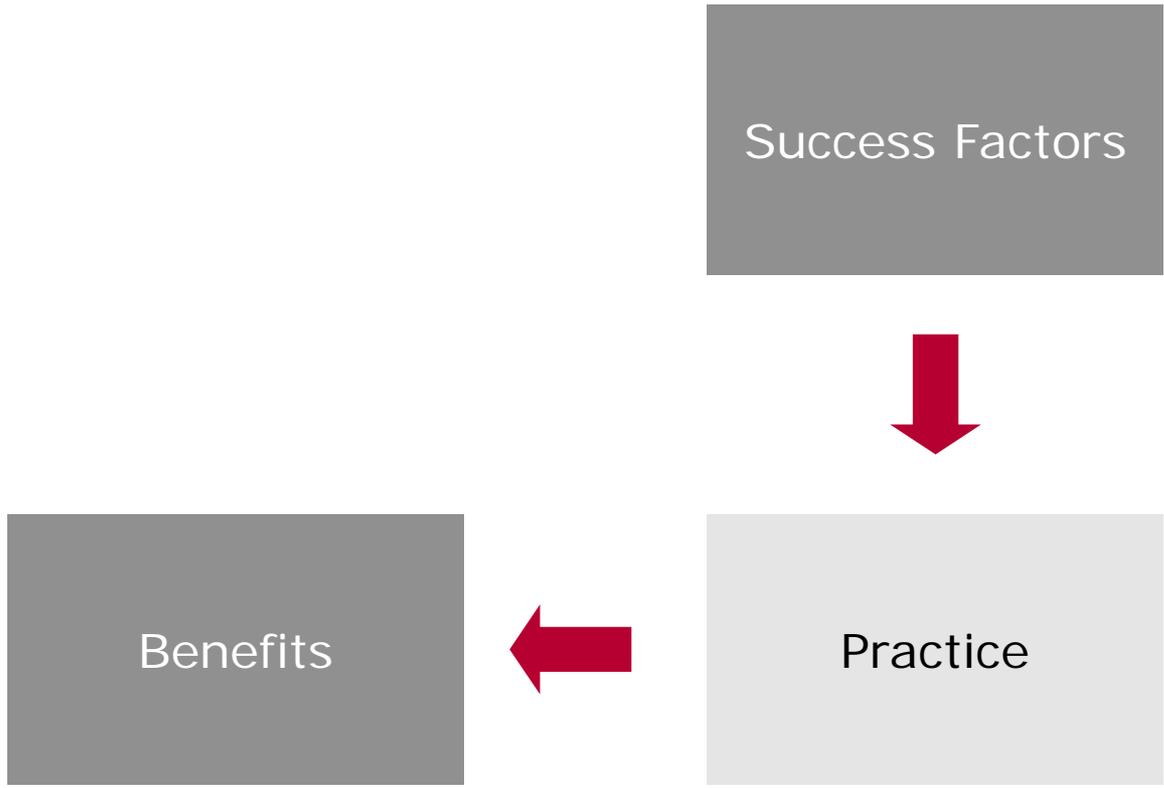
Global Software and IT

▶ **Advances**

Trends

The Way Ahead

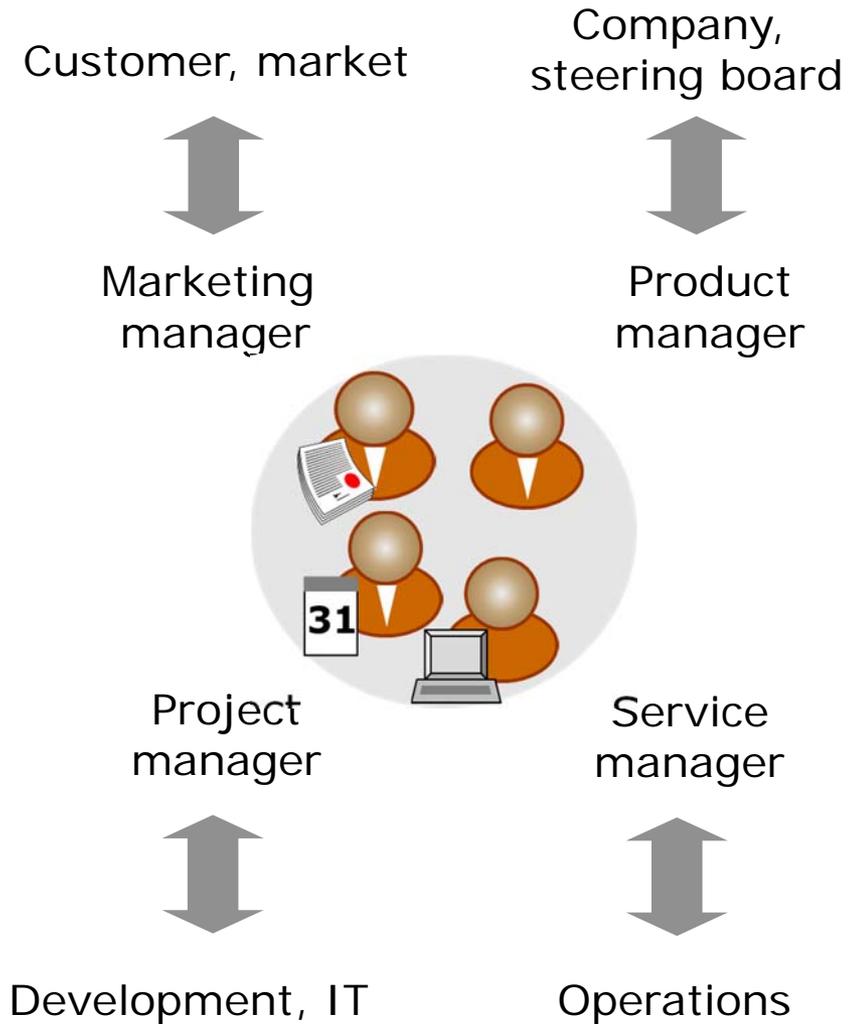
9 Success Factors to Achieve Sustainable Benefits



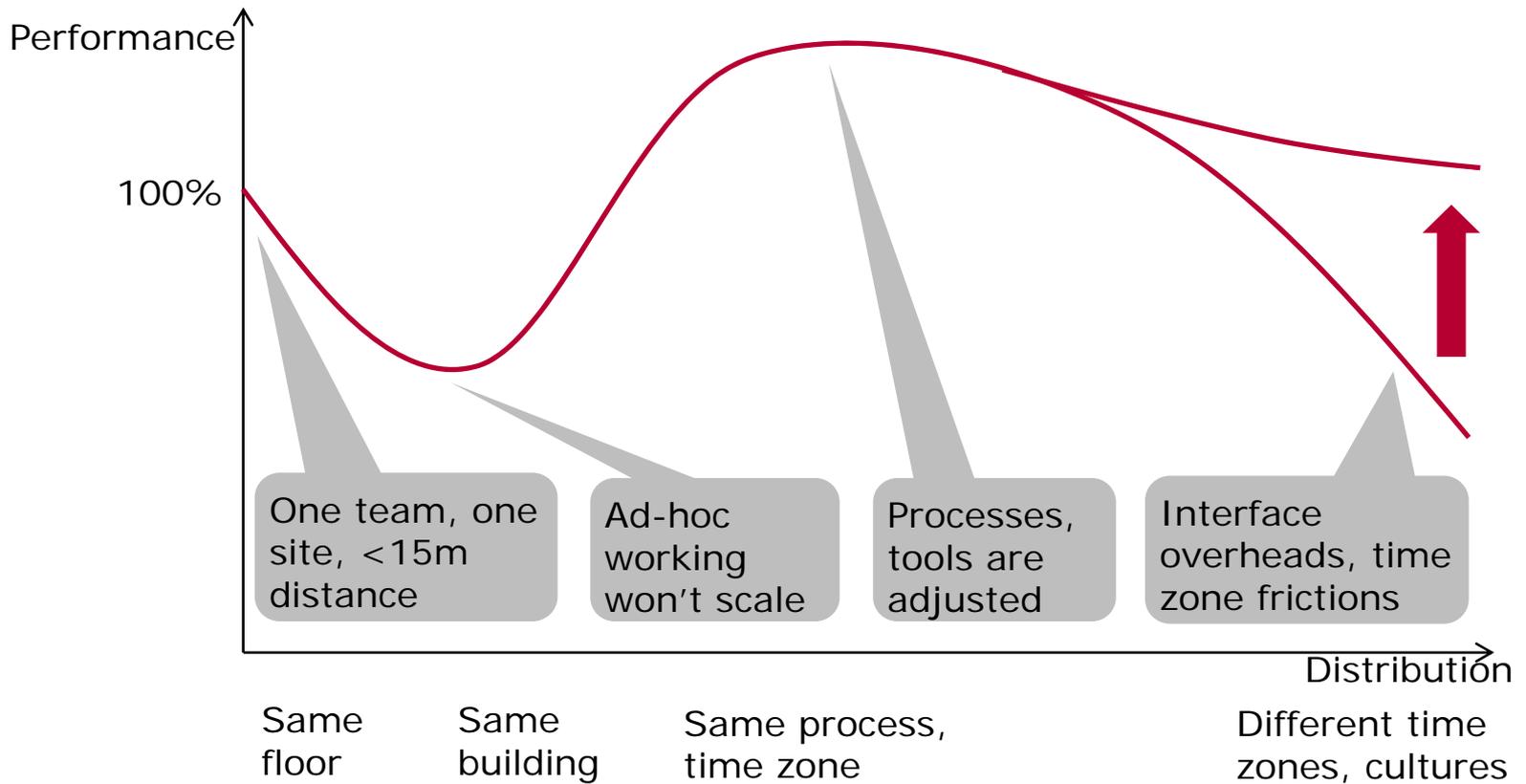
GSE Success Factors

Success Factors Benefits	Competences	Communication	Collaboration
Flexibility	Strong Team	Results-driven Leadership	Suitable Soft Skills
Innovation	Continuous Knowledge Management	Value and Customer Orientation	Reliable Partners
Efficiency	Good Process Capabilities	Transparent Organization	Optimized IT Infrastructure

1. Strong Team

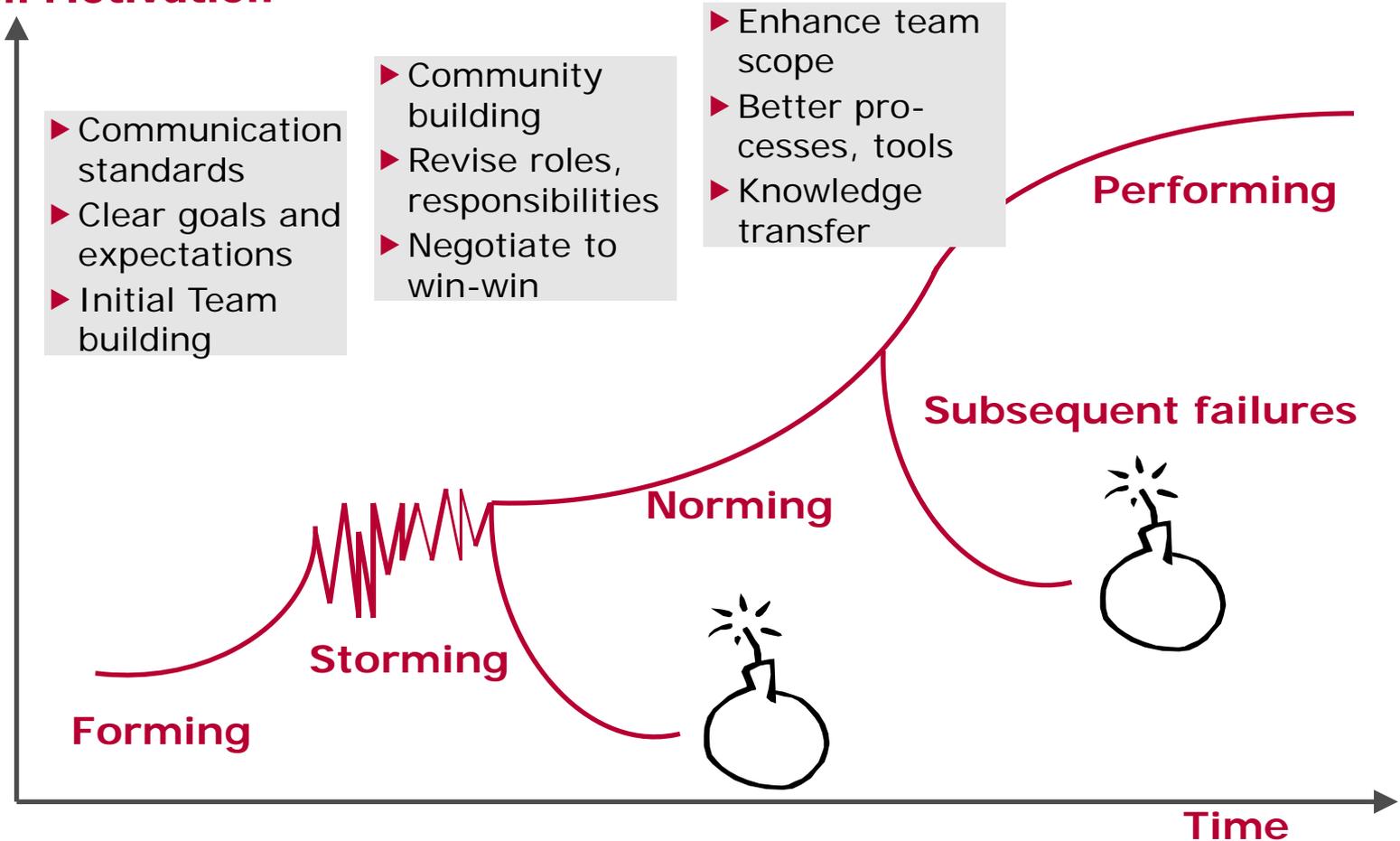


2. Results-driven Leadership



3. Suitable Soft Skills

Team Performance Team Motivation



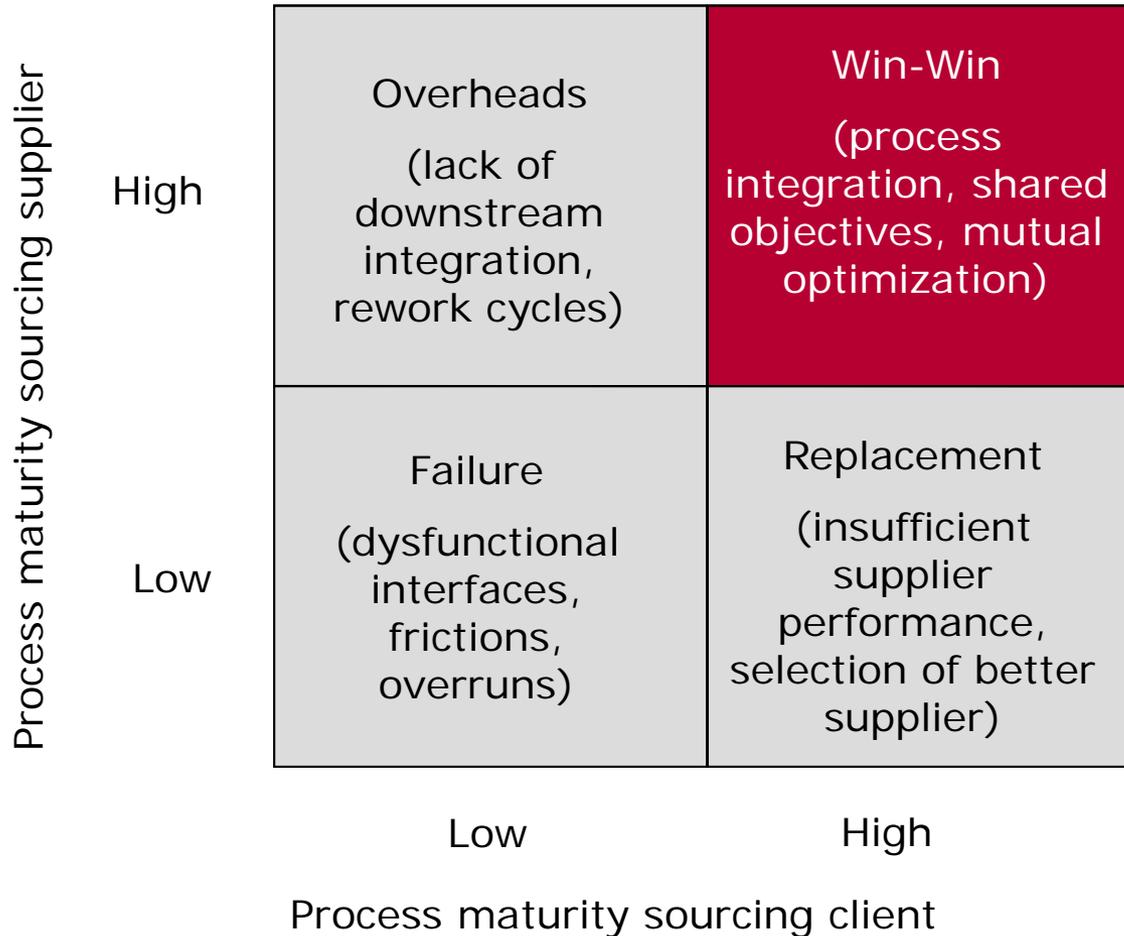
4. Continuous Knowledge Management

Culture	Different	<ul style="list-style-type: none"> ▶ Collaborative workshops, interviews ▶ Prototypes ▶ Scenarios, use cases, case studies ▶ Check lists 	<ul style="list-style-type: none"> ▶ Formalized specifications ▶ Prototypes ▶ Scenarios, use cases, case studies ▶ Virtual workshops with distributed moderation
	Same	<ul style="list-style-type: none"> ▶ Brainstorming ▶ Workshops ▶ Scenarios, Use Cases, case studies ▶ Roles, Persona ▶ Interviews 	<ul style="list-style-type: none"> ▶ Virtual workshops, interviews ▶ Scenarios, use cases, case studies ▶ Roles, Persona ▶ Prototypes ▶ Structured analysis techniques
		Same	Different
Location, time zone			

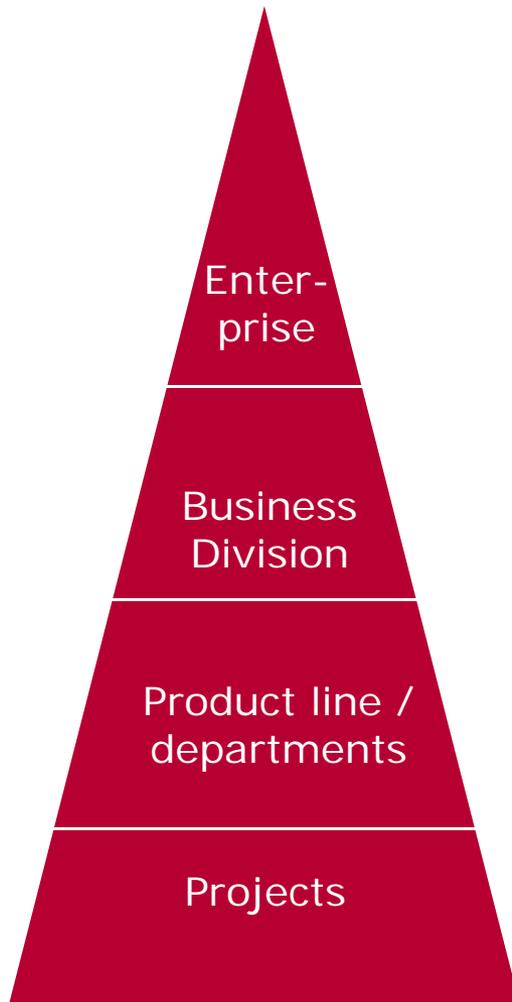
5. Value and Customer Orientation

Task	Business model	Supplier model	Learning curve	Breakeven period	Number of sites
New business models and processes	Preferably onshore; should be co-located	External consulting with own management team	Long	Long	Few
Performance improvement	Onshore, close collaboration	External consulting with own management team	Middle	Middle	Few
Development of internal applications	Rightshore (distance won't matter)	Typically outsourcing	Short	Middle	Few-many
Product development (generic)	Rightshore (time-zone matters)	Outsourcing or captive	Middle	Middle -long	Few
Product development (embedded; complex)	Nearshore; preferably co-located	Captive with dedicated support	Middle	Middle -long	Few
Validation of software	Rightshore (distance won't matter); test and development should be co-located	Outsourcing or own test center	Middle	Middle	Few
Maintenance of internal applications	Rightshore (distance won't matter)	Outsourcing or captive	Middle	Middle -long	Many
Maintenance of products	Rightshore (time-zone matters)	Outsourcing or captive	Middle	Long	Few
Selection of software and infrastructure	Nearshore, close collaboration	Consulting; with own organization	Short	Short-middle	Few
Operation of infrastructure, SaaS	Rightshore (time-zone matters)	Outsourcing or own IT center	Short	Short-middle	Few

7. Good Process Capabilities



8. Transparent Organization



- ▶ Establish coherent vision for globalization
- ▶ Safe-guard core competences and products
- ▶ Align global product and supplier portfolio
- ▶ Establish frame contracts with key suppliers
- ▶ Set up and maintain governance and IT structure

- ▶ Assess own needs
- ▶ Align own planning (skills, resources, sites, work split)
- ▶ Establish and monitor key performance indicators
- ▶ Institutionalize governance, process, tools, IT

- ▶ Allocate work according to coherent responsibilities
- ▶ Set up individual globalization projects
- ▶ Manage suppliers, sites and distributed teams

- ▶ Set up strong teams with clear responsibilities
- ▶ Manage project-specific risks
- ▶ Set up, measure and reach agreed objectives

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The Way Ahead

Global Software Trends



Collaboration

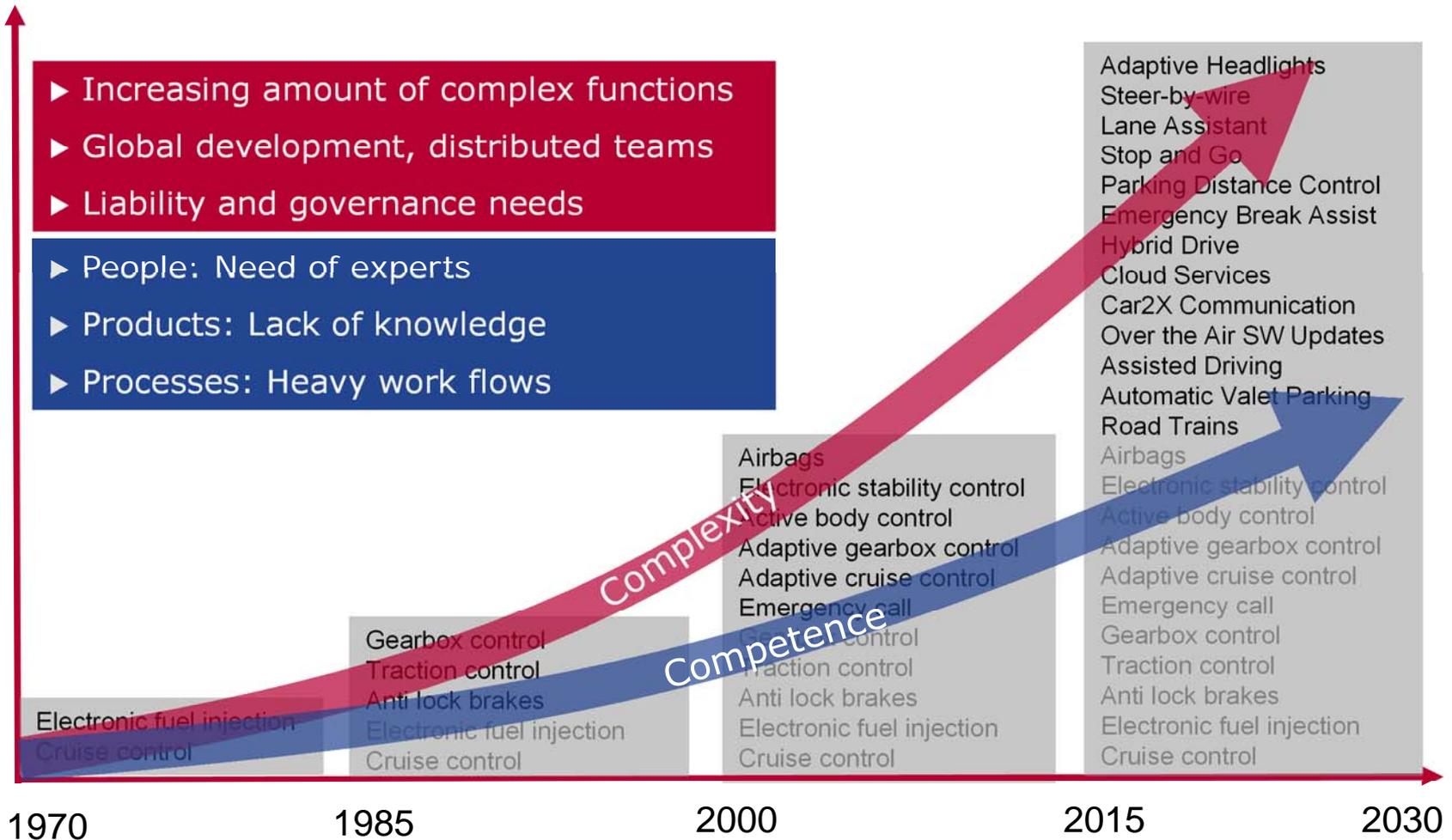
Connectivity

Convergence

Cloud

Comprehension

Technology Trends: Comprehension





▶▶ Agenda

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Global Software and IT

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▶ **The Way Ahead**



Five Global Software Trends

Global Software Trends

- ▶ Collaboration
- ▶ Connectivity
- ▶ Convergence
- ▶ Cloud
- ▶ Comprehension



... What it means for YOU

Innovate competences

- ▶ Implement value-driven technology decisions
- ▶ Innovate solutions with products and services

Improve communication

- ▶ Make partners part of value creation
- ▶ Drive Lean principles to manage complexity and uncertainty

Grow collaboration

- ▶ Foster collaborative virtual teams
- ▶ Stimulate people to work together



▶ Competences

▶ Communication

▶ Collaboration

Stay Tuned

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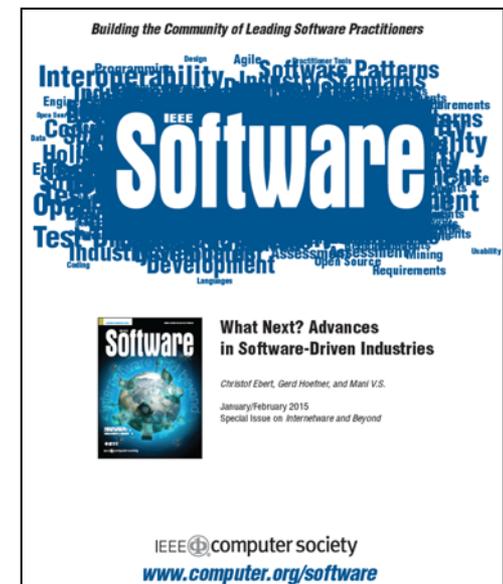
GSE White paper of Siemens and Vector

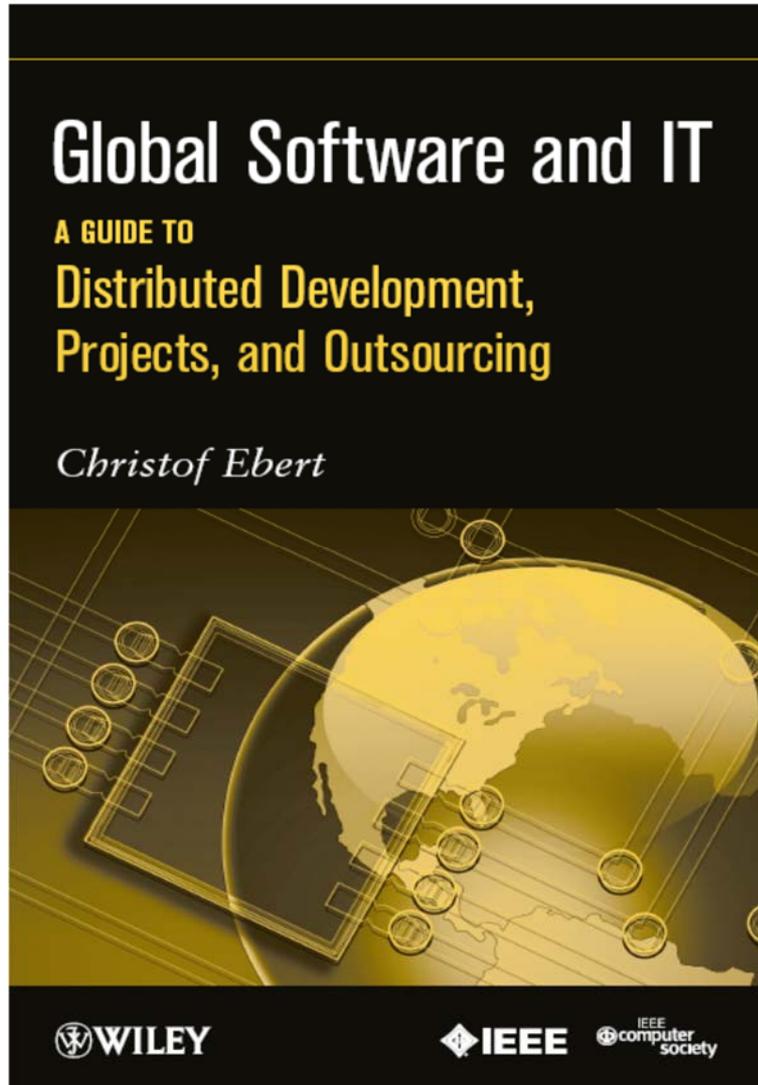
IEEE Software, Jan/Feb 2015

www.computer.org/software

Or directly from Vector Media Center:

www.vector.com/gse





Global Software and IT

Christof Ebert

2. Edition, Wiley, 2012

www.vector.com/books

"This book stands out as the best source of information on distributed software development. Seldom do we see a book with the concepts completely backed by industry experiences and views. Software developers and managers benefit from the broad case studies."

S.M. Balasubramaniyan, Vice President, Wipro Technologies

Thank you for your attention
Contact me with your further questions

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