

# Global Information Systems: Introduction and Assumptions (1)

Prof. Dr. Jan M. Pawlowski  
27.10.2009



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# Where I am from...



# Global Information Systems, University of Jyväskylä (JYU)

## Focus area

- Global Information Systems (GLIS)
- Knowledge Management & E-Learning**
- Internationalization / Globalization; support of globally distributed groups
- Cultural aspects for learning and knowledge management
- Support through Information and Communication Technologies
- Standardization, Quality Management and Assurance for E-Learning
- Adaptive Systems

## Projects

- OpenScout: Management education in Europe and North Africa as application field for open content
- COSMOS / Open Science Resources: Exchange of Scientific Content
- ASPECT: Open Content and standards for schools
- iCOPER: New standards for educational technologies
- Nordlet: Nordic - Baltic community of Open Educational Resources Exchange
- LaProf: Language Learning Open Educational Resources for Agriculture



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# The team



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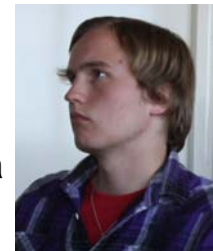
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Kirsi Syynimaa



Marjo Halmiala



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# Contents

## Motivation

- Introductory Scenario
- Expectations

## Global Information Systems

- Definition and Scope
- Examples
- Questions, problems, opportunities

## Outlook on the Course



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[Source: <http://www.english.com/>]



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[Source: <http://www.english.com/>]



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[Source: <http://www.english.com/>]

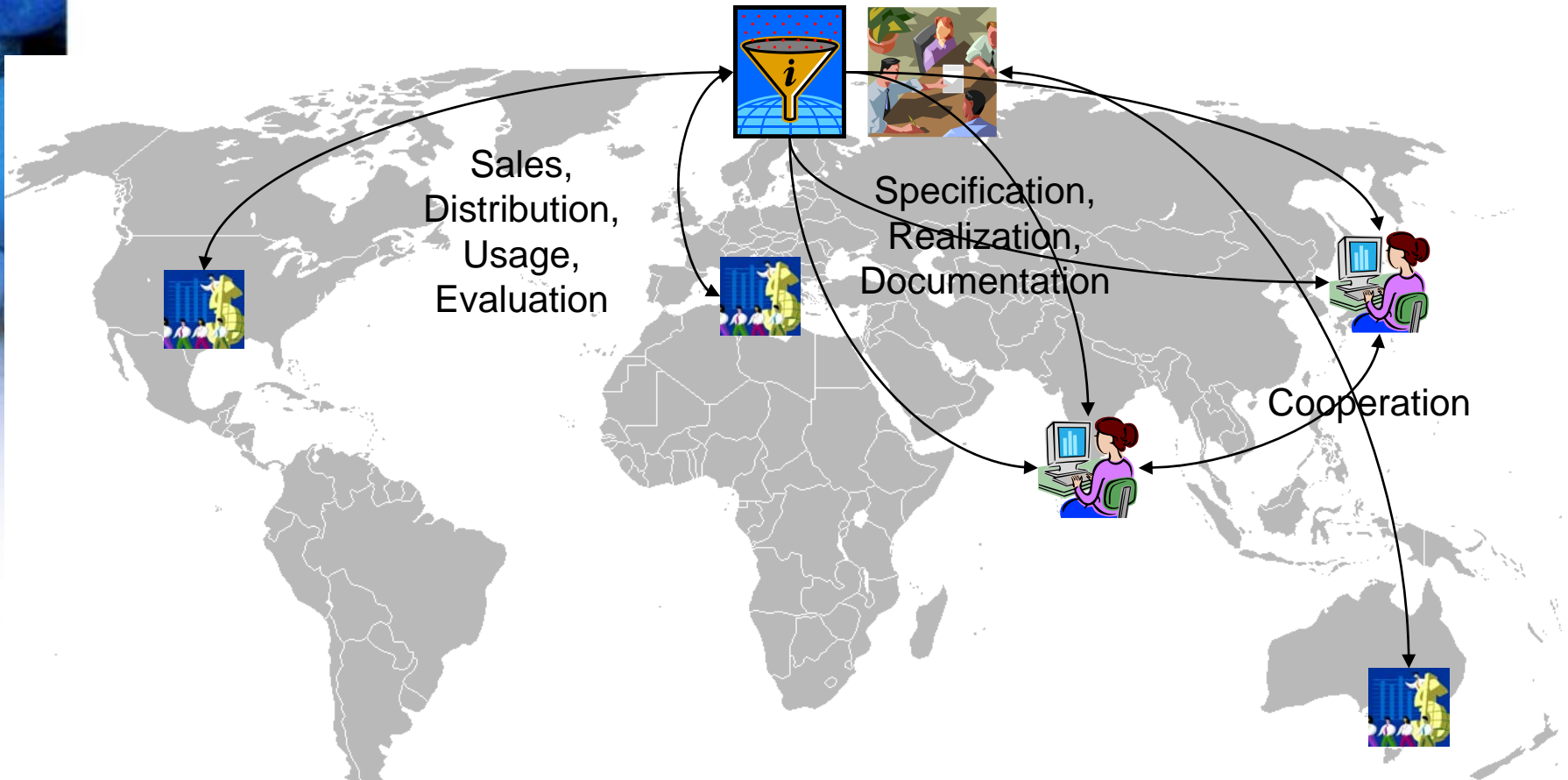


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# A First Scenario

Project Idea &  
Management



Source: [<http://commons.wikimedia.org/>]

# Sample: yahoo.co.kr

Windows Internet Explorer  
http://kr.yahoo.com/

YAHOO! KOREA

가기 | 동영상 | 이미지 | 지식 | 사전 | 뉴스 | 쇼핑

추천: 미스코리아 출신 아나 - 같은웃 입은 스타      실시간: 1 번양군 편지      +539

뉴스 홈    스포츠    연예    재테크

**[조선] "변실장, 신정아와 노골적 연애편지 약100통 주고받아"**  
홍 당측... 노대통령 '진노' 고교수학여행, 중국서 집단 성매매 '중격' 이사업이 겪은 '추한' 일본아구 | 선정성 논란, 광천화 롬패가 문제

 **동성 중인 민주노동 간부 홍기에 질러 중상**  
박근혜, 5년 후기약하나?... 홍기에 심경 밝혀  
박성호 "박준형 배신 미안해 속의금 500만원"  
이상우 "발달장애 아들 위해 '인간극장' 출연"

» 서울 (26°C) ☀ 구름조금 · 2007대선 · 김류의트송달 · YTN Live

금융 급락? 테마주는 '독야청청' '당분간 1700~1900'      [추가]

오늘의 추천 콘텐츠

 비행중 날개꺾는 초음속 폭격기  
참으로 징그러운 사마귀 기생충 살아있는 듯 벗겨지는 신비한 옷  
불가사의 자연지형, 땀개는 가짜 일인4억 아카벨라 밴드 록음악

 수입 중고차 값의 진실  
면도날보다 정교하고 날카로운 실  
언론에 소개된 식당 맛있는 이유  
비타민C, 지방 합쳐치면 암발생?  
30~40대, 뇌졸중으로 사망가능

아후! 콘텐츠 순위

실시간 인기 검색어

- 1 번양군 편지      ↑539
- 2 광천화 키웠으면      ↑771
- 3 라운경 아들      (NEW)
- 4 신정아      (NEW)
- 5 채정안 과거      ↑760
- 6 차두 친동생      ↑424

09월10일 18시22분

동영상 갤러리    이미지 갤러리

아후! 코리아    해미 투게터    (NEW)    뉴스    뉴식업 "교만습내막" 의수    277528 점

아후! 디렉토리

뉴스 신문, 스포츠  
방송 TV프로, 드라마  
여가 게임, 자동차  
엔터 음악, 영화  
경제 소책, 금융  
건강 질병, 다이어트

» 더보기

이벤트

- 지마켓 추석 이벤트
- 제시카키친 리부추천
- 로봇청소기를 받아라
- 인기있는 신상품

한층 더 안전해진 로그인 : 로그인    신규회원 가입

메일    블로그    금융

아후! 코리아    Gmarket

소중한 분들께 전하세요

쇼핑	가격비교	패션소호		
옥션 GS이슈 G마켓	인터파크 OTTO 등대문닷컴	추석선물 G마켓세일 옥션추석	신세계몰 이마트 롯데mall	GStore 빌라리 상성몰

LG디오스 50%할인중    트랜치코트 신상19,800    블루페퍼 25,000원일    침구 플셋 반값39,900    OTTO패션 Hit 500

7일미백&보습 첫구매사은품    지산리조트시즌권특가 리틀벙벙티2,900원무료

한트키즈 85% Hot Sale    한가위상품대전-Point 적립!

아후! 인사이드

아후! 온라인 패션 모집  
로봇청소기-음식쓰레기 처리기들 드립니다.

» 더보기

꾸러기 영마약약  
좋은 학부모 되는 법 나누고 배우보세요.

» 더보기

닌텐도, 백화점상품권 공짜    좋은 부모 되기 완전정복

http://kr.yahoo.com/r/pjfo    Internet    100%

# Sample: yahoo.de

Yahoo! Deutschland - Windows Internet Explorer

http://de.yahoo.com/

Datei Bearbeiten Ansicht Favoriten Extras ?

Google  Los geht's! Lesezeichen 636 blockiert Rechtschreibprüfung Senden an Einstellungen

Yahoo! Deutschland Startseite (M) Feeds (J) Drucken Seite

Yahoo! Mail: Ihre Kommunikationszentrale **Yahoo! als Startseite** Y! Clever: Wie viele Geräte dürfen an eine Steckdose?

## YAHOO! DEUTSCHLAND

Web Bilder Video Lokale Suche Shopping mehr

Suche:  **Web-Suche**

Das Web  Seiten auf Deutsch [Seiten-Einstellungen](#)

**Autos**

Chat

Clever

Dating

Finanzen

Flickr NEU!

Groups

Grüßkarten

Horoskope

Lifestyle

Lokale Suche

Mein Yahoo!

Mobile

Movies

Musik

Reisen

Shopping

Spiele

Sport

TV

**Alle Y! Services**

### Yahoo! Magazin



#### "Bereue nichts"

Renn-Rentner Michael Schumacher hat auch ein Jahr nach dem Rücktritt keinerlei Sehnsucht nach einem Comeback. » Mehr

- Aktuelles aus der Formel1

Michael Schumacher im Netz

- Renn-Rentner Schumi "bereut nichts"
- Ballack: Comeback-Zeitpunkt ungewiss
- Eine Ladung Videos von den Foo Fighters
- Neues vom Dino-Killerasteroiden

E-Mails lesen: [Anmelden](#) Gratis E-Mail: [Registrieren](#)

Mail Messenger Wetter

Musik Lokale Suche Movies

### Auf der IAA vom 13.-23. September Halle 6



Anzeigen - Ihre Meinung

### Die neue kommerzielle Suche ist da!



#### Werbung regional schalten

Anzeigen in Minuten live stellen. Schon ab 5 Cent pro Klick.

» weitere Infos

### Yahoo! Trends

Die beliebtesten Konzert-Tourneen!



- LaFee Die 'Jetzt erst recht' Tour 2007
- Revolverheld Rocken bundesweit!
- Gentleman Reggae-Vibes aus Deutschland
- Gogol Bordello Das Gipsy Punk Ensemble live!

» Weitere Konzerttipps

### Gefunden: Beliebte Suchen zum Thema Herbst

- Oktoberfest
- Basteln
- Wellness
- Winterreifen

### Nachrichten

**Abgeschoben**  
Pakistan weist Exministerpräsident Sharif aus

- Frankfurt: Angriff auf Rabbiner offenbar antisemitisch
- Sarkozy mit Merkel zusammengetroffen
- Teheran will Uran-Anreicherung fortsetzen
- Schrecksekunde bei 50 Cents MTV-Auftritt
- Fast zwei Dutzend Nadeln im Körper

» Mehr: [Nachrichten](#) | [Panorama](#) | [Unterhaltung](#) | [Videos](#)

Börse: **DAX: 7431 (-0.07%)** **TecDAX: 906 (-0.53%)**  
Aktienkurse:  **Suchen**

### Top Angebote



Top Hardware von Dell  
Desktops von grundlegender Funktionalität bis zu ultimativer Leistung bei dell.de



Das reinste Sparadies!  
Mallorca supergünstig: Hotel\*\*\*, Flug & 7 Tage schon ab € 187. Expedia.de



Jetzt mit FONIC nur 9,9ct/Min  
...& SMS\* in alle dt. Netze zahlen. Ohne

Werben mit Yahoo!  
• Search Marketing  
• Sponsored Links  
• Media Sales  
• Händlerintegration

Weitere Services  
• Handy  
• Jobs  
• Immobilien  
• Lotto

Fertig Internet 100%

# What can you expect?

- ❏ Analyze and evaluate management and development problems in globally distributed organizations
- ❏ Decide whether an information system should be build in an international environment
- ❏ To identify differences in culture in general, in management and communication
- ❏ To design and develop systems to be used in a international context
- ❏ To evaluate systems' adaptation and adoption



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# Course Organization

- L1: Introduction
- L2: Global Information Systems: Framework and Design Approaches
- L3: Cultural aspects / Requirements analysis
- L4: Globally Distributed Teams
- L5: Localization and Internationalization
- Special Lectures: Modeling global processes; Trust and awareness in global settings
- Case Study





# Approach

## 📦 Course outline

- Lecture
- Guiding Questions
- Discussion
- Assignment / Case Study & Presentation
- Examination

## 📦 Interaction & Discussion

- Preparation: Slides, readings & recent papers
- Preparation (2): Questions on Papers
- Questions: E-Mail, Forum, Skype  
(jan\_m\_pawlowski)



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# Your expectations?

- Why did you choose this course?
- Which experiences do you have in the field?
- Which issues would you like to discuss?



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# Characteristics

- Economical, organizational, technological factors
- Strategy and management of globally distributed processes
- Communication in distributed teams
- Coordination of geographically distributed processes
- Technical infrastructure
- Usability
- Cultural issues
- Domain specific issues
- ...
  
- Decisions: Outsourcing (Organization), Offshoring (Location), ...
- Competencies: Management, cooperation, cultural issues



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# Definitions

- ❏ Global Software Development (GSD):  
Developing software in geographically distributed teams
- ❏ Global Information Systems (GLIS) are systems produced and/or used in a global context
- ❏  $GSD \subseteq GLIS$



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# Motivators (Sangwan, 2006)

- ❏ Limited trained workforce
- ❏ Differences in development costs
- ❏ Shorter production life-cycle through shift models
- ❏ Technological advancements
- ❏ Closeness to target markets



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# Some facts on outsourcing (1)



	Buyers					Providers	
	Today			2004	2002	Today	
	OVERALL	ONSHORE	OFFSHORE	OVERALL	OVERALL	ONSHORE	OFFSHORE
<b>Satisfied</b>	78%	81%	62%	74%	69%	84%	86%
<b>Neutral</b>	7%	11%	30%	16%	8%	16%	7%
<b>Dissatisfied</b>	15%	8%	8%	10%	23%	0%	7%

[Source: DiamondCluster 2005: Global IT Outsourcing Study

<http://diamondconsultants.com/PublicSite/ideas/perspectives/downloads/Diamond2005OutsourcingStudy.pdf>]

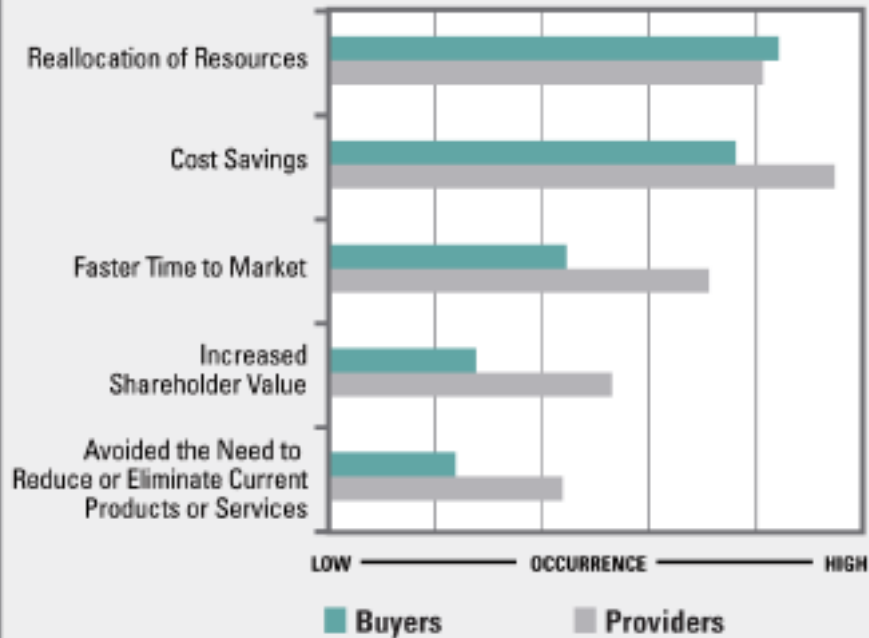


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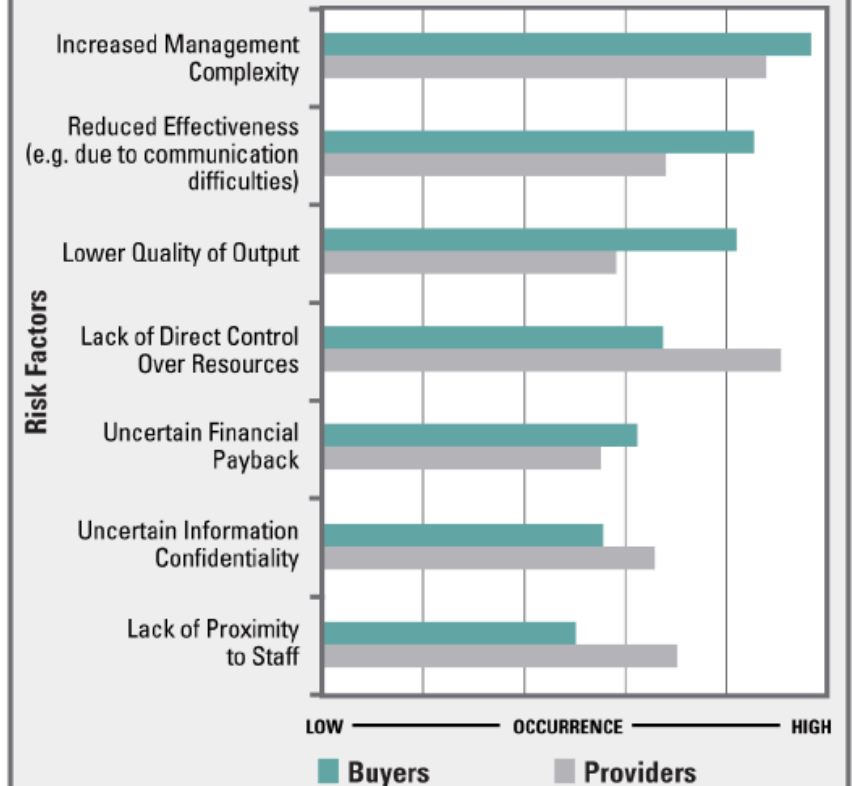
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# Some facts on outsourcing (2)

## OUTSOURCING BENEFITS



## PRIMARY CONCERNS



[Source: DiamondCluster 2005: Global IT Outsourcing Study

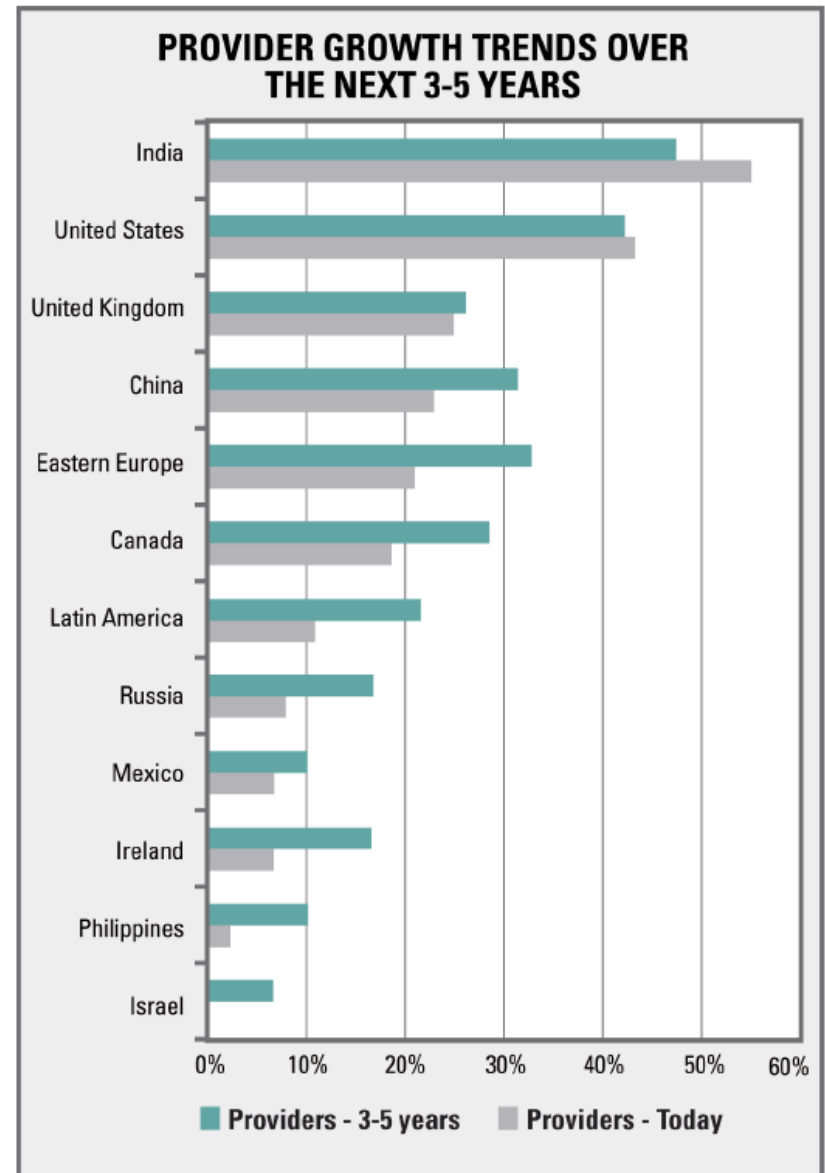
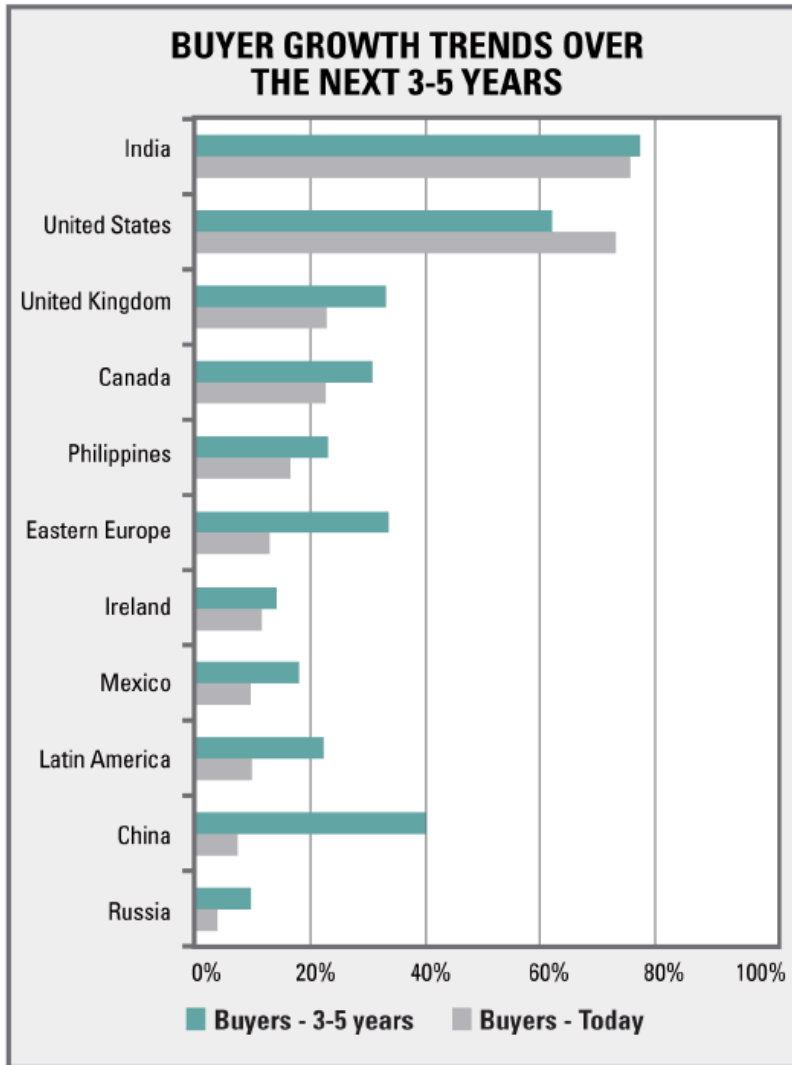
<http://diamondconsultants.com/PublicSite/ideas/perspectives/downloads/Diamond2005OutsourcingStudy.pdf>]



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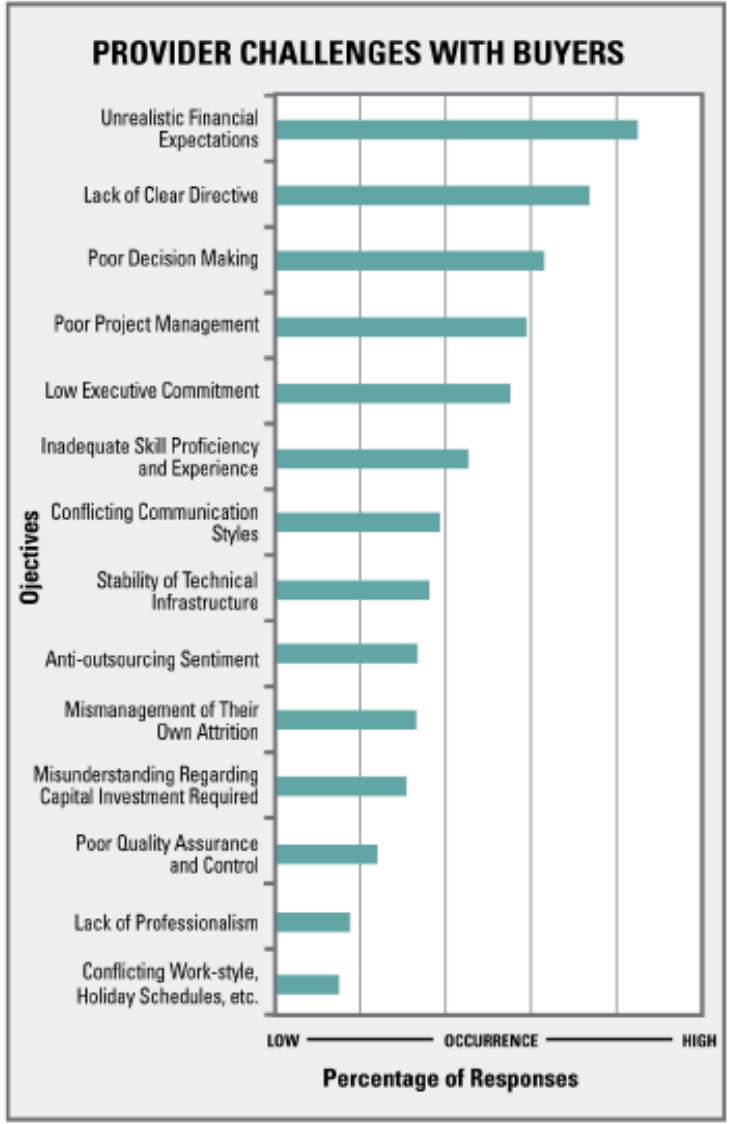
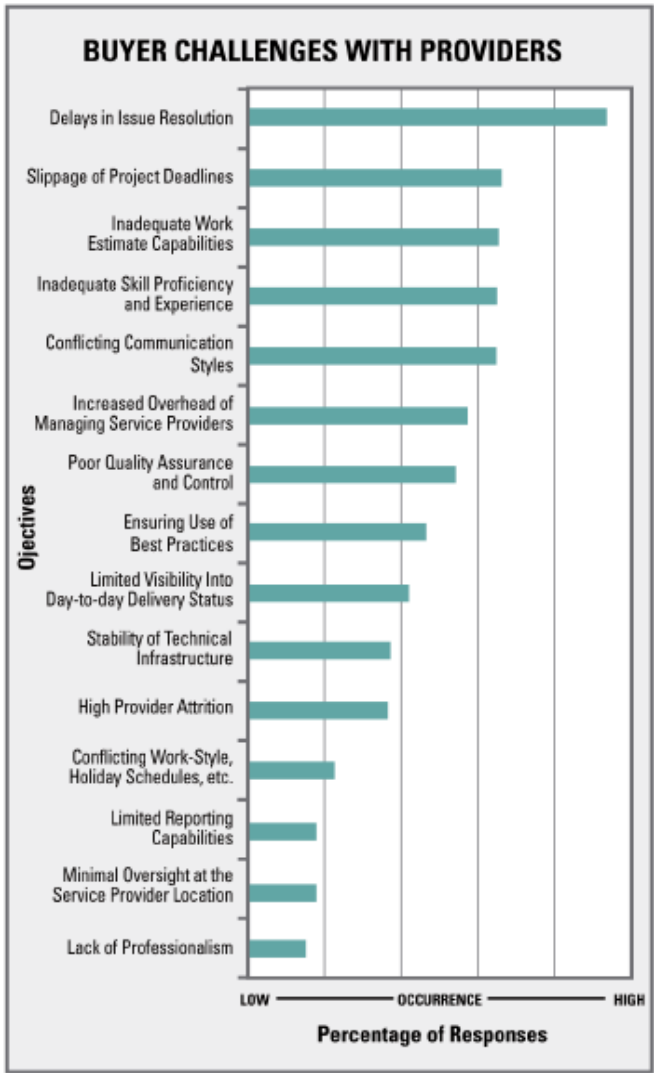
# Some facts on outsourcing (3)





# Some facts on outsourcing (4)

[Source: DiamondCluster 2005: Global IT Outsourcing Study  
<http://diamondconsultants.com/PublicSite/ideas/perspectives/downloads/Diamond2005OutsourcingStudy.pdf>]



# Influence Factors

## CARMEL (1999)

- Geographical dispersion
- Loss of communication richness
- Coordination breakdown
- Loss of team awareness
- Cultural differences



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# Influence Factors

## ■ EVARISTO (2003)

- Trust
- Level of dispersion
- Type of stakeholders
- Type of projects
- Synchronicity
- Complexity
- Systems methodology
- Perceived distance
- Policy and standards
- Culture



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# Success Factors

- SANGWAN et al. (2006)
  - Reduce Ambiguity: e.g., processes, management, design
  - Maximize Stability: e.g., design specifications, informal communication
  - Understand dependencies : e.g., temporal, functional, technical
  - Facilitate coordination: e.g., guidelines, standards, meetings
  - Balance flexibility and rigidity: e.g., working culture, decision making



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# Sample scenarios (by location)

- Offshore outsourcing of software development / programming
  - Main aspects: coordination, communication
  
- Software development for multiple markets / countries / cultures
  - Main aspects: Culture, systems / interface design



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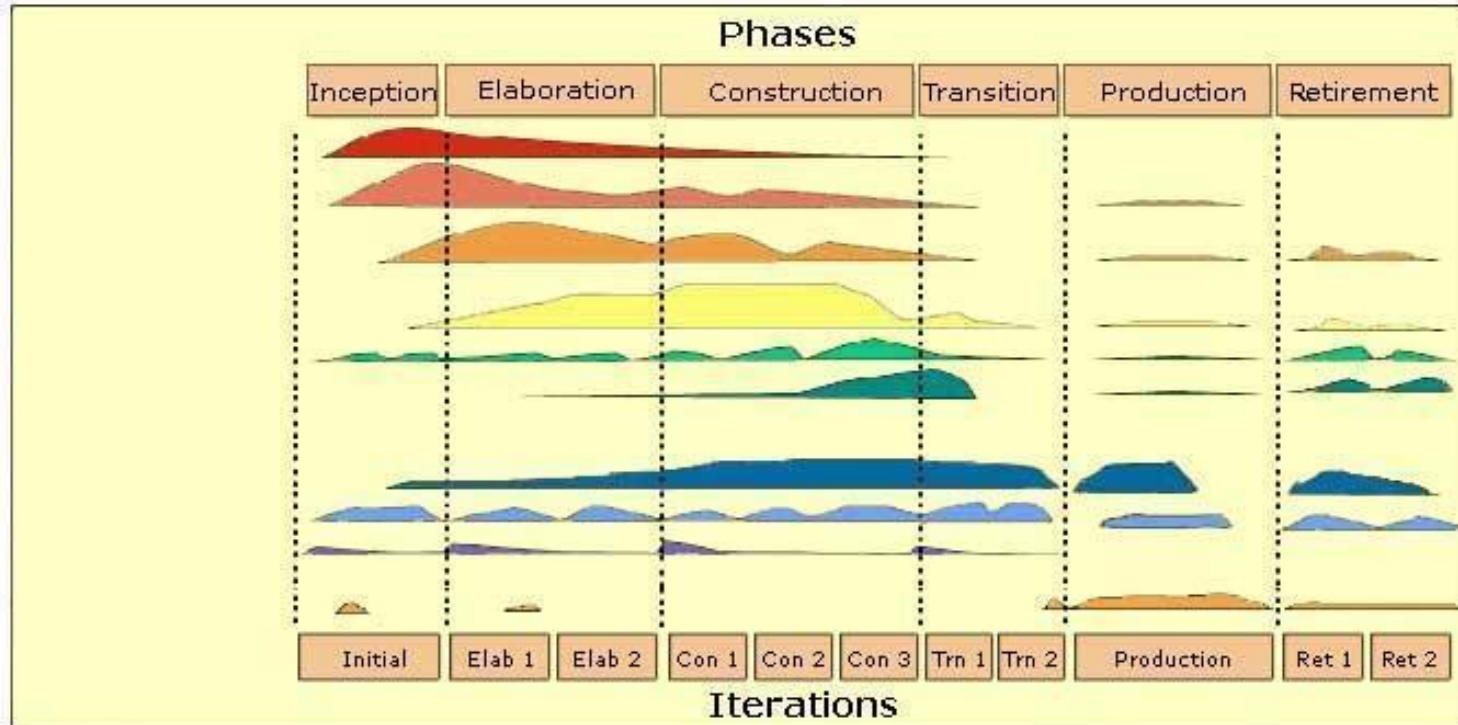
# Key Concepts: Enterprise Unified Process

## Development Disciplines

- Business Modeling
- Requirements
- Analysis & Design
- Implementation
- Test
- Deployment

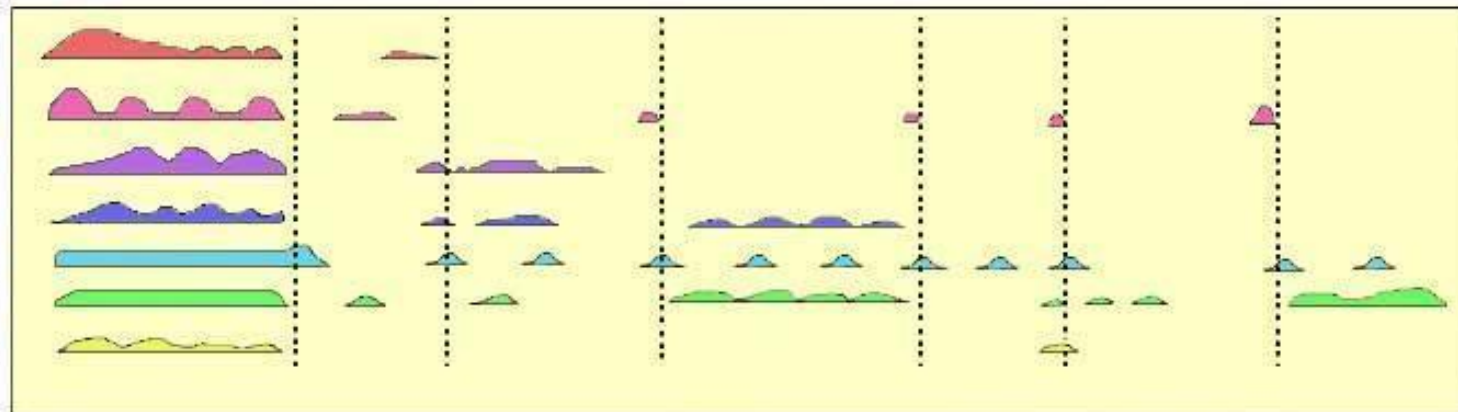
## Support Disciplines

- Configuration and Change Mgmt.
- Project Management
- Environment
- Operations & Support



## Enterprise Disciplines

- Enterprise Business Modeling
- Portfolio Management
- Enterprise Architecture
- Strategic Reuse
- People Management
- Enterprise Administration
- Software Process Improvement



Copyright 2003-2005 Scott W. Ambler

# Key Concepts: Culture Profiles

**IMS LIP**

- Identification
- Goals
- Qualifications
- Activities
- ...

---

**Culture Profile Specification**

- General
- Reference
- Educational
- Culture
- Communication
- ...

**RCDEO**

- Competency description
- Evidence
- ...

**Culture Profile Instance (Nation / Region)**

**Culture Profile Instance (Group)**

**Culture Profile Instance (Actor)**

- ...
- Experience 1: Study Netherlands
- Experience 2: Project Korea
- Native Culture: Germany
- ...

**E-Portfolio**

- Organizations
- Identification
- Resources
- Products
- ...

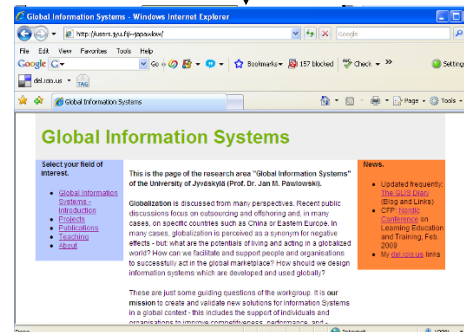
Instantiation

Contains Characteristic

Contains Product

Defined Culture Competencies

Presentation



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# Key Concepts: Distributed teams

- Managing cultural differences (see L3)
- Considering adjustment to calculate productivity and potential difficulties
- Phases of cultural adjustment
  - Enthusiasm
  - Conflict Stage
  - Integration Stage
  - Adaptation Stage

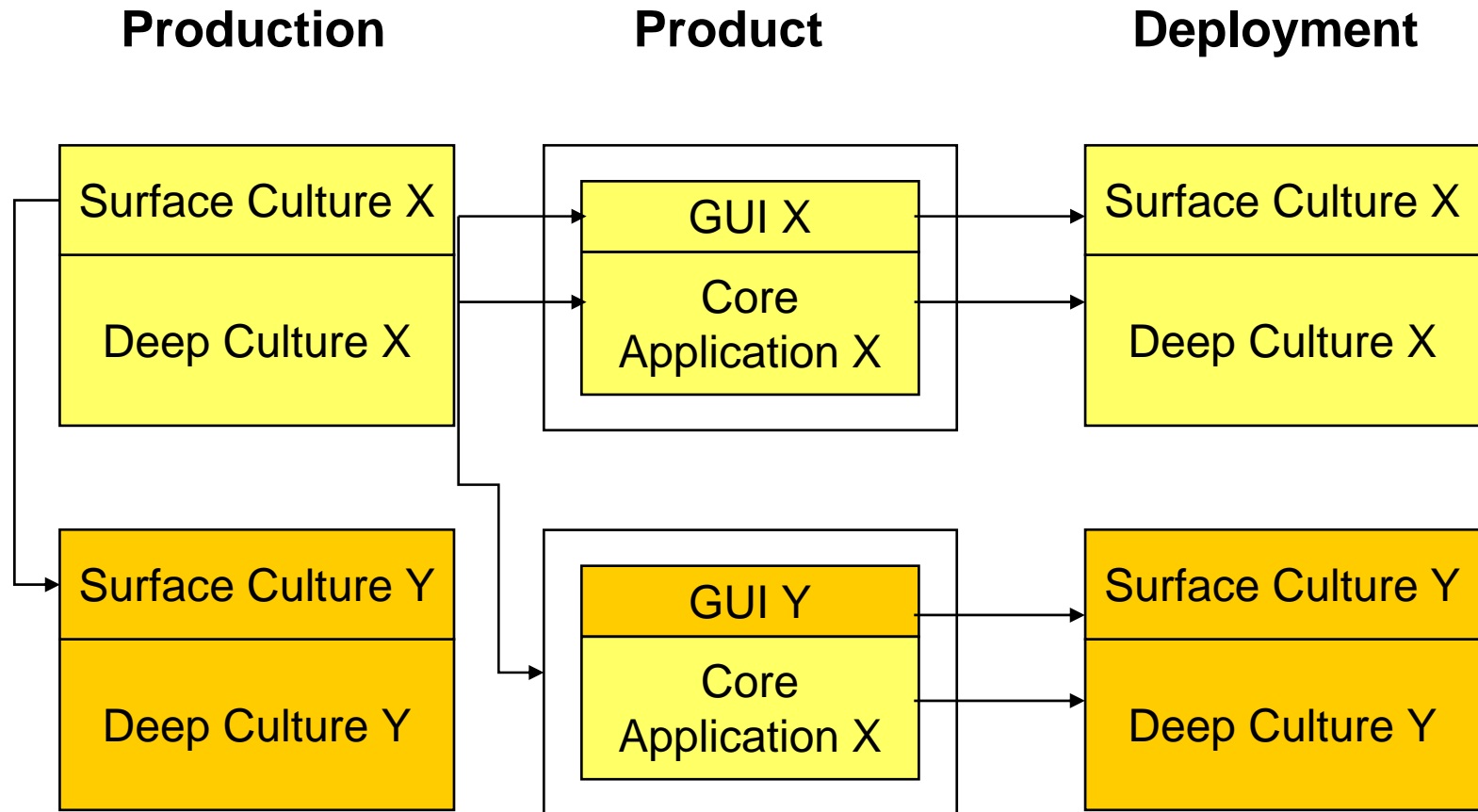


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# Key Concepts: Internationalization



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# Summary

- ❏ Wide field with a variety of approaches
- ❏ Different scenarios leading to different solutions
- ❏ Some influence factors are common to all approaches, e.g.,
  - Communication / coordination
  - Stakeholder
  - Infrastructure / systems architecture
  - Culture



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# Questions

- ❏ How can global software development processes be classified?
- ❏ Which factors influence factors affect the development process?
- ❏ Which advantages / disadvantages do you expect from a distributed development process?



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- Karolak, D.W. (1998): Global Software Development: Managing Virtual Teams and Environments (Practitioners)- ISBN-10: 0818687010
- Avgerou, C. (2002): Information Systems and Global Diversity, Oxford University Press, Oxford, 2002. ISBN-10: 0199240779
- [GSD 2004] Proceedings of the 3rd International Workshop on Global Software Development, Co-located with ICSE 2004, Edinburgh, Scotland, May 24, 2004 (available for download)
- **Kruchten, P.: Analyzing Intercultural Factors Affecting Global Software Development – A Position Paper, In: [GSD2004], pp. 59-62**

# References

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- ❏ Garton, C., Wegryn, K. (2006): Managing Without Walls: Maximize Success with Virtual, Global, and Cross - Cultural Teams, MC Press, US, 2006.
- ❏ Äijö, T., Kuivalainen, O., Saarenketo, S., Lindqvist, J., Hanninen, H. (2005): Internationalization Handbook for the Software Business; The Model of Internationalization Paths & Internationalization Workbook, Centre of Expertise for Software Product Business, 2005.
- ❏ More references will be listed in each lecture



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