

# Efficient Maintenance Support in Offshore Software Development

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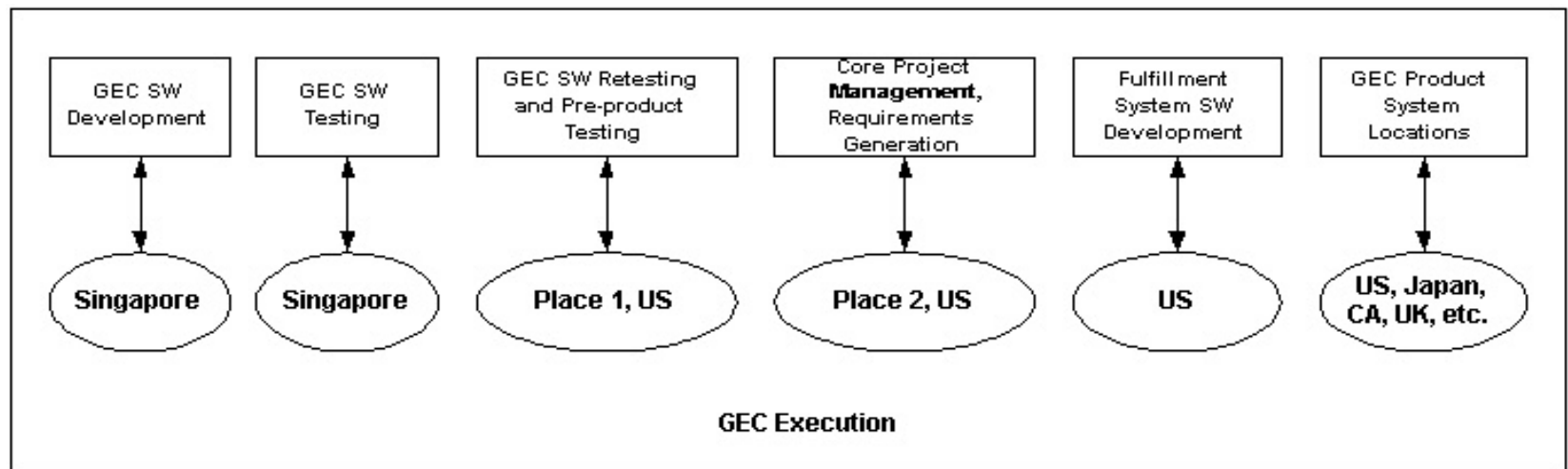
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# Global E-Commerce (GEC) Project Overview

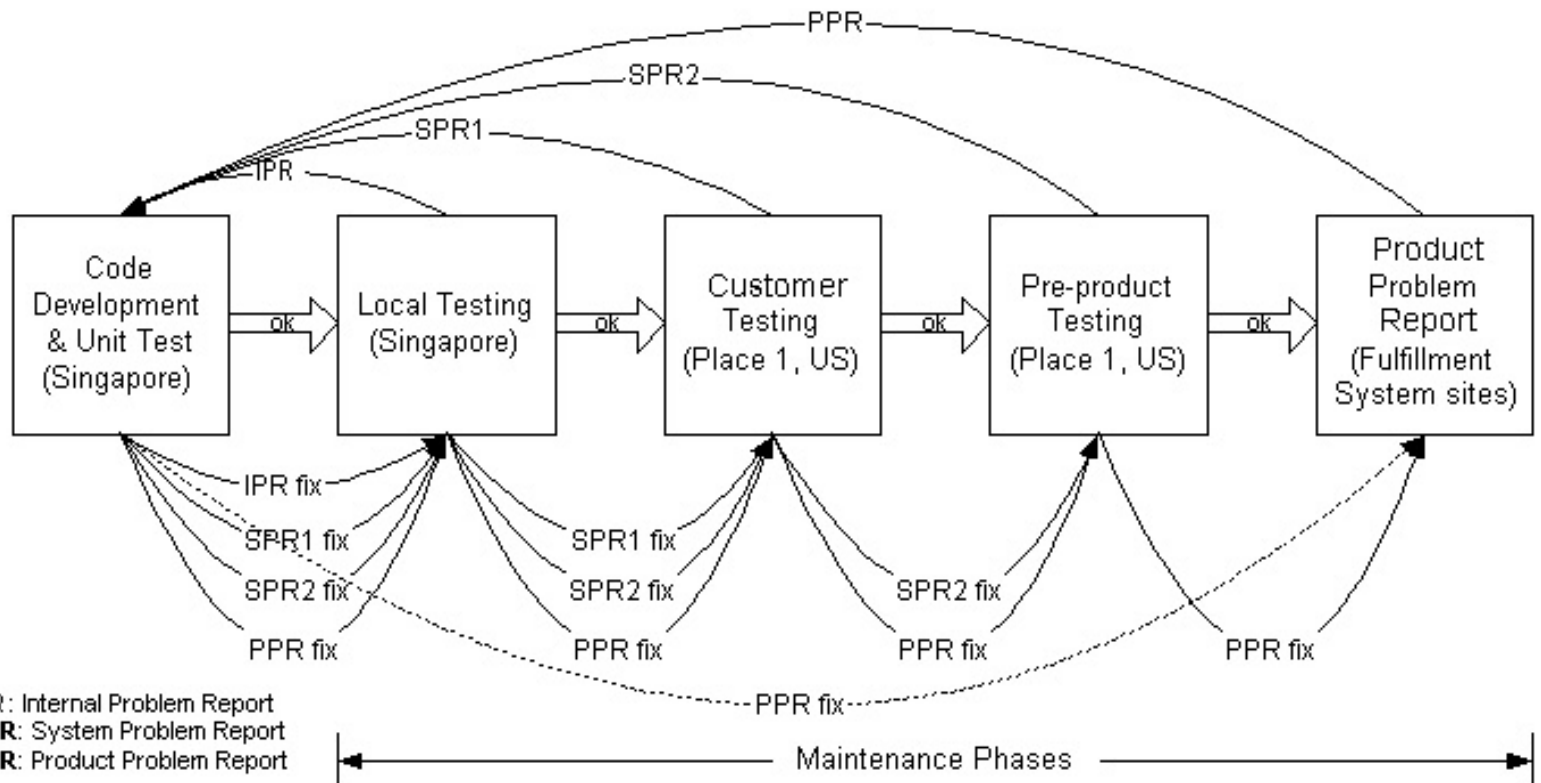
- A web-based product ordering system, one of the biggest B2B e-commerce system in the world in 2000
- GEC main software was developed offshore by the customer company at the 'provider company' during 1998-2001



# Research Objectives and Methodology

- Research objectives
  - Study a case of globally distributed maintenance and identify
    - Challenges
    - Good practices
- Methods
  - Author's experience as a participant in the project
  - Questionnaire distributed to all GEC developers for their feedback (N=5)
  - Phone interviews with several key GEC developers (N=?)

# Maintenance in the Case Project



# Results - Challenges

- Distance
  - Time zones
  - Geographical
- Over-time work
- Requirements
  - Extra maintenance work caused by performance issue
- Problem reproduction
  - Difficult to simulate and re-produce problems in the local environment
  - Difficult to exchange ideas regarding problems with remote sites
- Code handover

# Results - Good Practices

- Attitude and relationship between the development team and its customer
- Compatible development / maintenance environment
- Efficient communication with the customer
  - Liaison engineer
  - Shift work
- External expert support is also very essential in order to solve hard, e.g., performance issues in the maintenance phases
- Multiple-level testing and roll-out

# Conclusions and Future Work

- Main results
  - Geographical distance and time zone differences delay maintenance
  - More expensive than collocated maintenance, since skilled developers can be needed at the customer site
  - Maintenance should be considered when planning and contracting offshore development
- Future work
  - Study successful maintenance models in distributed software development
  - Define a series of guidelines that could instruct maintenance agreement generation and execution

**Thank You!**

Questions & Comments?

