Scaling Up and Software Maintenance

1 Large Scale Systems

Ultra-large scale system:

- Considered not so much a ″system″ but an ″ecosystem″
- 1000s of stakeholders
- Multiple user scenarios and requirements
- Continuous integration
- A wide variety of infrastructure and process integration

2 Characteristics of large system development

- Collections of separate, communicating systems
- Separate teams develop each system
- Teams working in different places/time zones
- Include and interact with a number of existing systems
- Many system requirements concerned with the interaction with existing systems and so don't lend themselves to flexibility an incremental development
- Constrained by external rules and regulations limiting the way that they can be developed
- Long procurement and development time
- Difficult to maintain coherent teams over the development time as people move on
- Diverse set of stakeholders - can't involve them all in the development process

3 Scaling agile methods

Agile methods have been mostly used for small and medium sized projects that can be developed by a small co-located team. Success of these methods comes because of improved communications

Scaling up agile methods involves changing these to cope with larger, longer projects where there are multiple development teams, perhaps working in different locations

Scaling agile throughout an organisation

- Multiple agile teams working on the same product
- Multiple agile teams working across different products

4 Distributed Teams

Create coherence

- Acknowledge big and small cultural differences
- Strengthen functional and team subcultures

Change how you communicate

- Cross-team communication mechanisms have to be designed and used. This should involve regular phone and video conferences between team members and frequent, short, electronic meetings where teams update each other on progress
- Initial and quarterly face to face meetings
- Stay together for as many iteration if possible
- Need more documentation - can't rely as much on talking

5 Scaling up to large systems