Using Agile Methods to Improve Efficiency in Requirements Engineering

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Aim

To show that by learning from the Agile Manifesto, in particular the two main principles, respectful treatment of people, and dealing flexibly with changes i.e.

- individuals and interactions over processes and tools
- responding to change over following a plan

we see:

- agreeing responsibility with small teams made individuals and interactions more important than blindly following a process

and

- responding to change is easier with small teams and fewer requirements.
Manifesto for Agile Software Development

We are uncovering better ways of developing software by doing it and helping others do it. Through this work we have come to value:

Individuals and interactions over processes and tools
Working software over comprehensive documentation
Customer collaboration over contract negotiation
Responding to change over following a plan

That is, while there is value in the items on the right, we value the items on the left more.

Kent Beck  James Grenning  Robert C. Martin
Mike Beedle  Jim Highsmith  Steve Mellor
Arie van Bennekum  Andrew Hunt  Ken Schwaber
Alistair Cockburn  Ron Jeffries  Jeff Sutherland
Ward Cunningham  Jon Kern  Dave Thomas
Martin Fowler  Brian Marick

Source: http://agilemanifesto.org/

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Source: http://agilemanifesto.org/
Agile e.g. Scrum

- Daily Scrum Meeting
- Backlog tasks expanded by team
- 24 hours
- 30 days
- Sprint Backlog
- Product Backlog: As prioritized by Product Owner
- Potentially Shippable Product Increment

Source: Adapted from *Agile Software Development with Scrum* by Ken Schwaber and Mike Beedle. www.methodsandtools.com
Unless someone is responsible for satisfying customer requirements, no-one is responsible for satisfying customer requirements.
The software was complete long before the requirements because responding to change with so many requirements was very difficult.

Most requirements were not needed.

Requirements grew from 200 to 23,000 because blindly following a process was considered more important than individuals and interactions.

<table>
<thead>
<tr>
<th>Role</th>
<th>Customer Requirements</th>
<th>System Requirements</th>
<th>System Architecture</th>
<th>System Detailed Design</th>
</tr>
</thead>
<tbody>
<tr>
<td>Customer</td>
<td>200</td>
<td>1,000</td>
<td>5,000</td>
<td>23,000 + 7,000</td>
</tr>
<tr>
<td>System Analyst</td>
<td>1,000</td>
<td>5,000</td>
<td>23,000 + 7,000</td>
<td></td>
</tr>
<tr>
<td>System Architect</td>
<td>5,000</td>
<td>23,000 + 7,000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>System Developer</td>
<td>23,000 + 7,000</td>
<td>Total 23,000</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Responding to change is easier with small teams and few requirements

Most requirements not repeated

Agreeing responsibility with small teams valued
Indivduals and interactions over processes and tools
Summary

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Responding to change is easier with small teams and few requirements

Agreeing responsibility with small teams valued Individuals and interactions over processes and tools
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Founding Member of IREB 2006
(International Requirements Engineering Board)
Organisational Change

Lack of discomfort with current, fear of the new.
Ignore information that does not fit in with past.
Lack of psychological security with the change, fear of loss of identity or status.

For successful change we must:
1. Overcome barriers to change
2. Communicate benefits to change
3. Support a learning environment
4. Embedd the new way of working

Source: Colin Hood 1987 based on work by Shein and Lewin