Hostile Environments

- Hostile to the very things we want to deliver

- Hostile due to nature, not malice

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Goals

1. Modern practice adoption
   » Better efficiency
   » Better value delivery

2. Emergent technology adoption
   » More efficient solutions to present-day problems
   » Better suited for modern ecosystems

How Is the Environment Hostile?

- Rigid Processes

- Implied Requirements

- Status Quo

Phone Comparison

	Samsung Galaxy S7	iPhone 6 Plus
Storage	32 GB	16 GB
Screen Size	5.1"	5.5"
Battery Life	~13 hours	~12 hours

Phone Comparison

	Samsung Galaxy S7	iPhone 6 Plus	Iridium Extreme 9575
Storage	32 GB	16 GB	"100 entry address book"
Screen Size	5.1"	5.5"	"200 character display"
Battery Life	~13 hours	~12 hours	~3.5 hours
% Coverage	~7%	~7%	100%

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Audience Participation

- Vote for which phone to take with you

Have a Nice Trip!

Audience Phone Preference

- ▮ Samsung Galaxy S7
- ▮ iPhone 6 Plus
- ▮ Iridium 9575

Requirements ➤ Design ➤ Implementation ➤ Testing ➤ Deployment ➤ Maintenance

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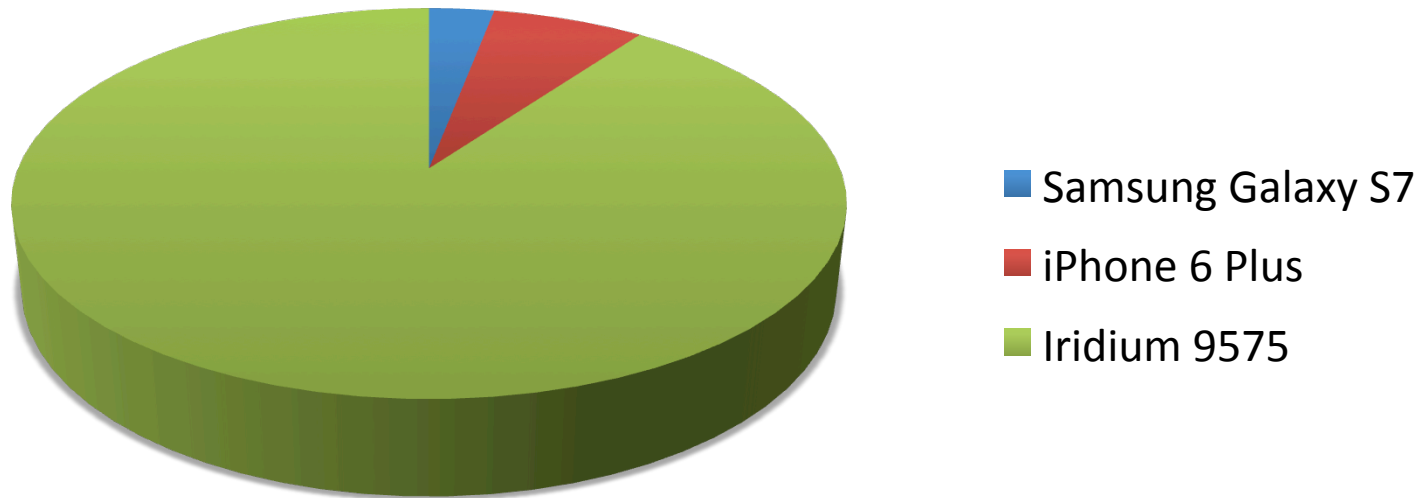
The Origins of Waterfall
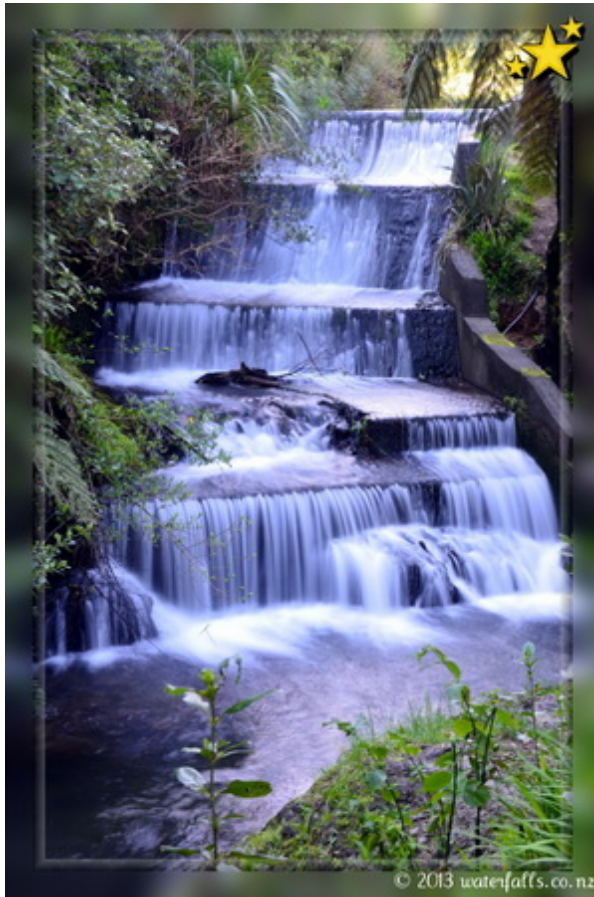
- Organizational influences
- Regulatory influences
- Business influences

Scenario 1 - Organizational

- BigCo has contracted with a vendor to fulfill certain job functions with a commitment for a certain number of positions on an annual basis.

- Project A must use those resources for those functions under the terms of the enterprise agreement.

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Scenario 2 - Regulatory

- TLA declares that you can do whatever you want so long as:

  » Dated evidence exists for all actions

  » Actions are done in order of dependencies (e.g. Requirements -> Development -> Testing)

Scenario 3 - Business

- "The business" wants a new version to coincide with the on-boarding of a significant number of new users of the application.

- In order to train both existing and new users at the exact same time, they require that the application be delivered on a specific date.

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Recurring Themes

- Schedule first mentality
- Focus on interdependencies

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Technology Stasis

Scenario 1 – Organizational Budget

- BigCo prefers broadly used technology platforms because the cost profile of those technologies are well understood

Scenario 2 – Cost Sharing

- BigCo divides the cost of running systems between the internal organizations using those systems.

Recurring Themes

- Costs related to operation as or more important than development efficiency.

- Per-project costs of adoption and operation heavily influenced by enterprise-wide adoption.

Delivering Better Methodologies

- More development iterations
- Faster feedback loop

Form a Deliberate Approach

God, grant me the serenity to accept the things I cannot change,
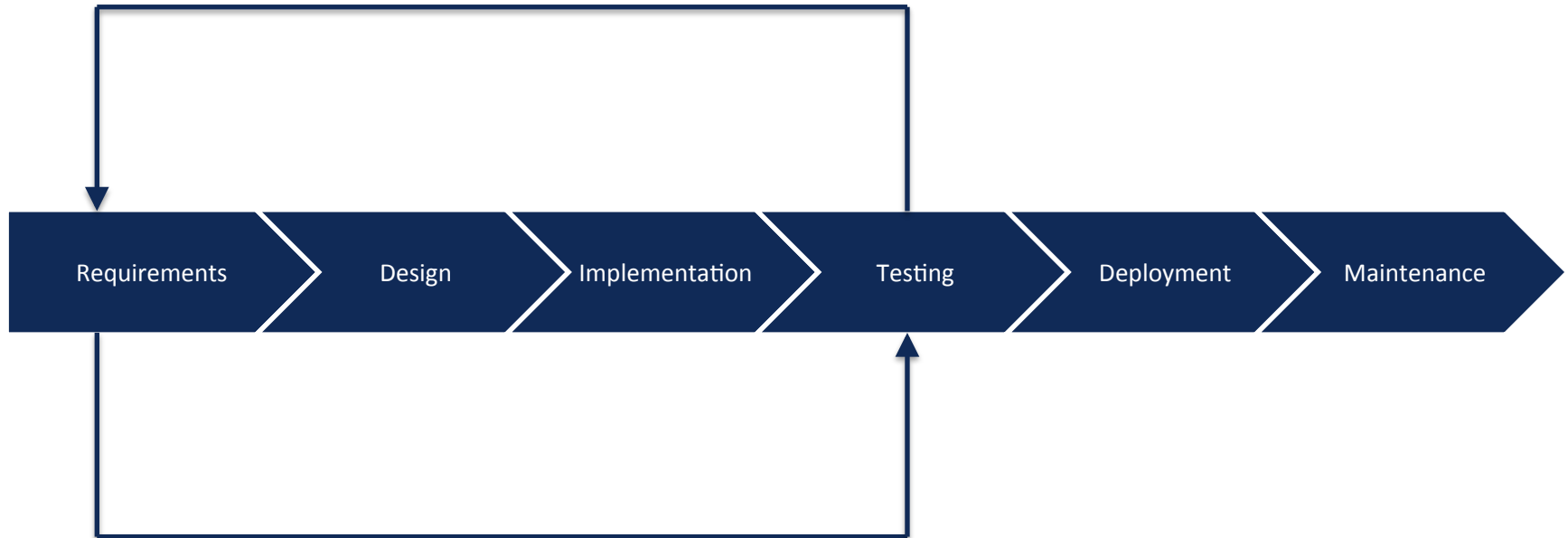
Courage to change the things I can,

And wisdom to know the difference.

- Serenity Prayer by Reinhold Niebuhr

Build an Improved Feedback Loop

- Recruit cross-functional team members directly
- Stand up a Continuous Integration Server
- The pitch
  - » Greater impact on the finished product
  - » Insight into what's coming
  - » Highlight the risk of having feedback ignored or deferred due to time constraints

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Alternative 1 – Deferred Delivery

Requirements → Design → Implementation → Testing → Deployment → Maintenance

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Alternative 2 – The Highway

Project Management

| Requirements | Design | Implementation | Testing | Deployment | Maintenance |

Software Development Methodology

| Infrastructure | Prototype | Implementation | Refinement |

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Implementation Strategies

- Vocabulary
  » Find compatible terms to describe activities

- Process
  » Develop reconciliation steps, if necessary

- Planning
  » Allocate time for waterfall deliverables

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Delivering Emerging Technologies

- Tools

- Languages, Libraries and Frameworks

- Storage & Query Engines

- Analytics

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Operational Considerations

- On Premise
  - » Deployment
  - » (High) Availability
  - » Monitoring
  - » Backup/Restore
- Cloud Vendors
  - » Commodity vs. Specialized
  - » SLA Compatibility

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Other Considerations

- Maintenance phase

- Training

- Compliance

Positive Examples

- git svn

- Play Framework

- React.js

- Solr in the Cloud

- Spark in the Cloud

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Final Words of Advice

- Key words:
  - » Agile
  - » Quality

Thank You

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