**Winning the Hidden Battle**
Requirements Tool Selection and Adoption

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21st IEEE International
Requirements Engineering Conference

Meet Blue, he's struggling to manage his requirements using only Word and Excel and he doesn't have a better tool

I can't tell you the status of my requirements

I can't keep my requirements documents synchronized

It's a pain to manage which requirements go in each release

It's hard to store requirements attributes in my Word docs

Multiple people try to edit the requirements and we lose work

When we want to reuse requirements, we copy and paste

I can't easily trace my requirements to analysis model elements

What can you expect out of this mini-tutorial?

- A selection process you can use in your organization to select an RM tool
- A fun exercise
- An example how Seilevel performed its evaluation
- Suggestions to increase adoption of a selected tool

And no, we will not suggest the one perfect tool for you

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Thanks to Olly and Remo for presenting last year's tool tutorial

They covered research results in detail, so we won't this year

A requirements tool selection process

Seilevel's tool evaluation results

Increasing tool adoption

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Let's agree—what are requirements management tools?

RM Tools

- Manage versions
- Manage changes
- Facilitate impact analysis
- Store requirements attributes
- Identify missing requirements
- Identify extra requirements
- Track status
- Control access
- Communicate
- Reuse

Wait, aren't there requirements development tools too?

RD Tools

| Elicit requirements |
| Organize and annotate ideas |
| Record notes |
| Mockup low-fidelity prototypes |
| Create high-fidelity prototypes |
| Model requirements |
| Improve written requirements |
| Voting on priorities |
| Convert text to diagrams |
| Scan for ambiguous words |

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Some tools do both!

Our research only looked at requirements management + modeling functionality

What has been the challenge of not having an RM tool?

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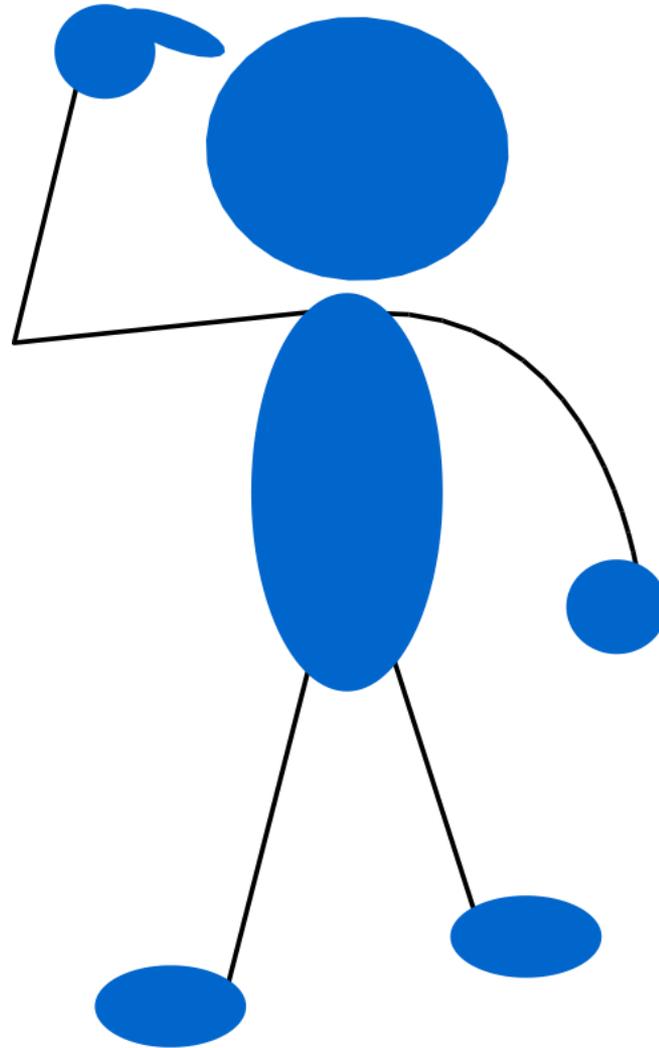
Why did we do our own requirements management tool study?
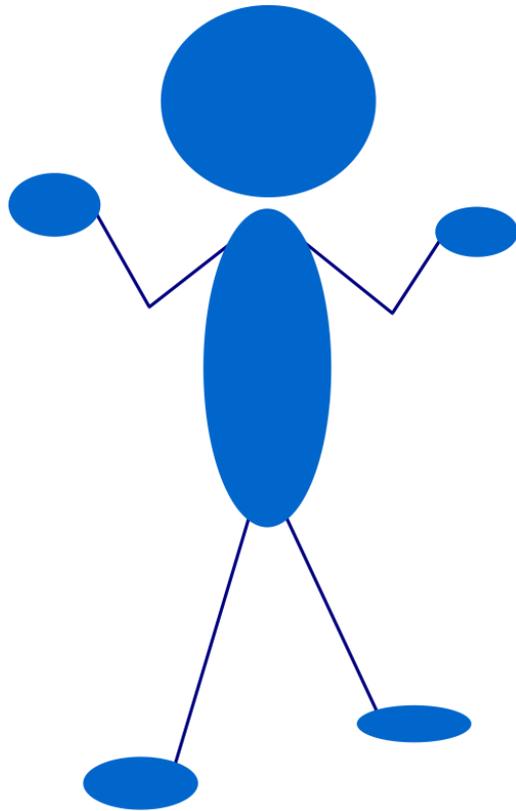
Our consultants needed a tool

and

Our 2007 search wasn't sufficient

and

Outside studies and tool lists were biased or not detailed enough

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There are other RM studies and lists available

- INCOSE:

 www.incose.org/ProductsPubs/products/toolsdatabase.aspx

- Volere:

  http://www.volere.co.uk/tools.htm

- Ian Alexander's list:

  http://www.scenarioplus.org.uk/

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In 2011 we evaluated a handful of requirements tools

Tools

Tools
3SL Cradle®
Blueprint® Requirements Center 2010
eDevTECH inteGREAT™ Requirements Studio
HP Application Lifecycle Management
IBM Rational Composer
IBM® Rational® DOORS
Jama Software Contour
Kovair Application Lifecycle Management
Micro Focus® Caliber® RM/RDM
Microsoft® Team Foundation Server
MKS Integrity
Orcanos Qpack
Polarion® Requirements™
Siemens Teamcenter®
Sparx Systems Enterprise Architect
TechnoSolutions TopTeam Analyst
TraceCloud

162 to start….   narrowed to 17

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We had a methodical process to evaluate the tools

Create a complete list of possible tools for evaluation → Filter tool list to strict RM tools only → Create a prioritized list of criteria → Select a shorter list of "first pass" criteria → Evaluate all RM tools against the first pass criteria → Evaluate top 15 tools against full criteria list → Top 15 tool vendors evaluate their tools

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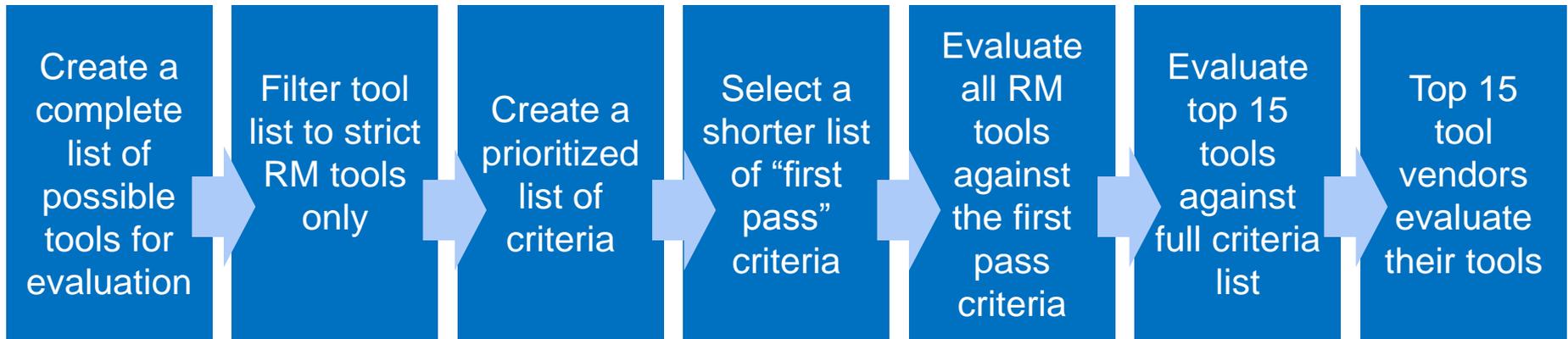
50 use cases led us to 230 features to use as evaluation criteria
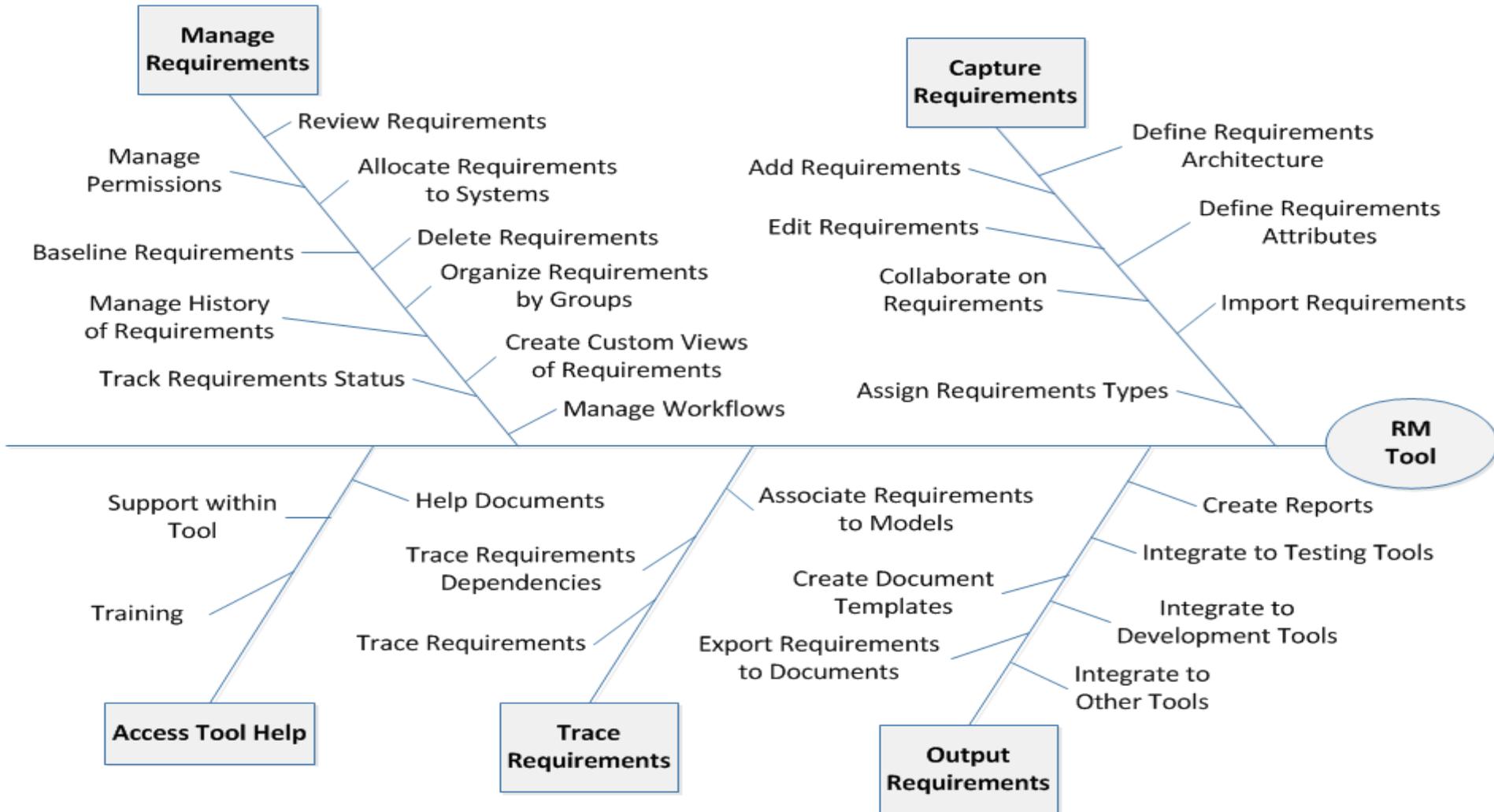
We used simple criteria priority and scoring scales

Priority scale

Priority	Definition
3	High, must have functionality
2	Medium, nice to have functionality, primarily provides flexibility
1	Low, functionality that is not important but would make the tool easier to adopt or use

Criteria score scale

Score	Feature Support
3	Fully supported in the tool
2	Supported but minor workarounds required or detailed functionality missing
1	Only slightly supported with major workarounds required or very minimal functionality
0	No support

Weighted Score = Criteria Priority x Tool Score for Criteria

Total Score = Sum of Weighted Scores for all Criteria

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To make your final choice

Methodically evaluate for the criteria you care about

Try before you buy (on a real project)

Compare scores, costs, and subjective feedback

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Let's build the "perfect" RM tool
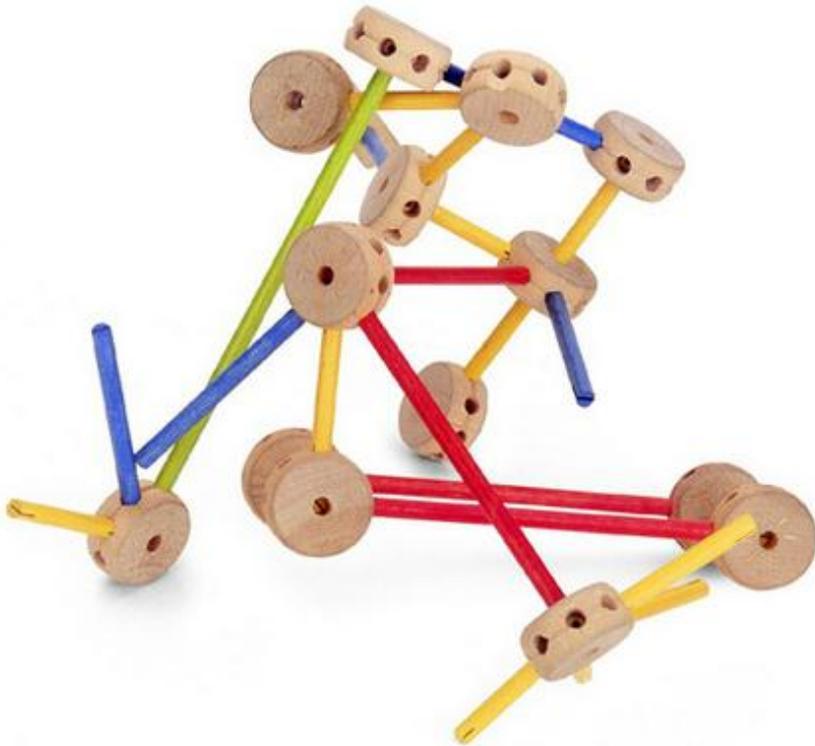
- Build a toy ""tool" that represents your ideal RM tool

- Each piece you add is a feature

- Add as many as you want, BUT your tree has to stand on its own

A requirements tool selection process

Seilevel's tool evaluation results

Increasing tool adoption

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We'll share our results, but a few disclaimers

- The tools are changing fast, so our data isn't entirely up to date

- Remember, our priorities might differ from yours!

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First, our top priorities might differ from yours

RML models	Seilevel's fundamental approach
Offline editing	We aren't always connected reliably at customer sites
Tool has to adapt to our process	We have an existing methodology that we aren't looking to change for a tool

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Our overall evaluation scores

Tool	Score	Tool	Score
eDevTECH **inteGREAT Requirements Studio**	5579	Polarion **Requirements**	4841
Blueprint **Requirements Center 2010**	5378	Kovair **Application Lifecycle Management**	4737
TechnoSolutions **TopTeam Analyst**	5314	IBM Rational **DOORS**	4718
Micro Focus **Caliber RM/RDM**	5171	Jama Software **Contour**	4596
MKS **Integrity**	5171	Orcanos **Qpack**	4513
3SL **Cradle**	5078	Sparx Systems **Enterprise Architect**	4382
Siemens **Teamcenter**	5049	HP **Application Lifecycle Management**	4147
IBM Rational **Composer**	4990	TraceCloud	4082
		Microsoft **Team Foundation Server**	3438

Maximum possible score is 5753

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"Best in" categories

Requirements Architecture	
Kovair **Application Lifecycle Management**	550
IBM Rational **Composer**	546
MKS **Integrity**	544

Analysis	
eDevTECH **inteGREAT Requirements Studio**	1264
3SL **Cradle**	1244
Kovair **Application Lifecycle Management**	1228

Modeling	
eDevTECH **inteGREAT Requirements Studio**	1082
Blueprint **Requirements Center 2010**	1092
TechnoSolutions **Top Team Analyst**	1079

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"Best in" categories continued

Review & Collaboration	
MKS **Integrity**	870
eDevTech **inteGREAT Requirements Studio**	855
Polarion **Requirements**	845

Ease of Use	
eDevTech **inteGREAT Requirements Studio**	664
Siemens **Teamcenter**	650
TechnoSolutions **Top Team Analyst**	646

Writing	
Micro Focus **Caliber RM/RDM**	1260
MKS **Integrity**	1224
Orcanos **Qpack**	1224
3SL **Cradle**	1224

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You have to use tools to really get a sense for how they really behave

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So what happened with our phase 3 study?
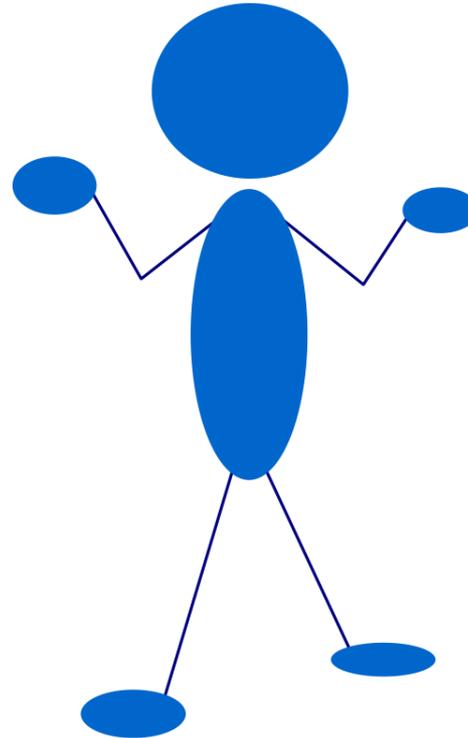
1. We had criteria. We had tools.
2. We had teams who tried to use them.
3. **But we had an adoption failure!**

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- We dropped #5 because it was too expensive
- All 4 of these tools are trying to fully support a visual requirements modeling language (RML)

Tool	Stand out strength	Biggest issue
InteGreat	Microsoft relationship	Hard to learn/use
BluePrint	Easy to use	Not offline
TopTeam	Lots of models	Hard to export customized documents
Caliber	Good user req modeling and reports	Not as many models

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Based on internal usage, we asked our consultants….

"Which tool do you want us to select?"

	Count of Most for
Blueprint	4
Caliber	5
Top Team	2

"Which would you be most upset if we select it?

	Count of Against
Blueprint	1
Integreat	10
Top Team	1

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☑ A requirements tool selection process

☑ Seilevel's tool evaluation results

☐ Increasing tool adoption

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So what about the tools keep us from adopting them?

Tool limitations

Configuration challenges

Learning curve is too big

Doesn't support existing templates

Doesn't support current methods

They don't have the necessary features

Don't handle models well

Don't trace at the level we need

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So what about the users keeps us from adopting the tools?

People resistance

People don't like to change

They are busy to learn something new

Don't believe there is value in using a tool

They haven't felt the pain of not having a tool

They perceive it's harder than it really is

Like to work document-centric

But mostly, people don't like change

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Include your users in the selection process

Ask them:

✓ "Which tool do you want us to select?"

✓ "Which would you be most upset if we select it?

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Identify a tool advocate to become an expert and own tool adoption across the organization
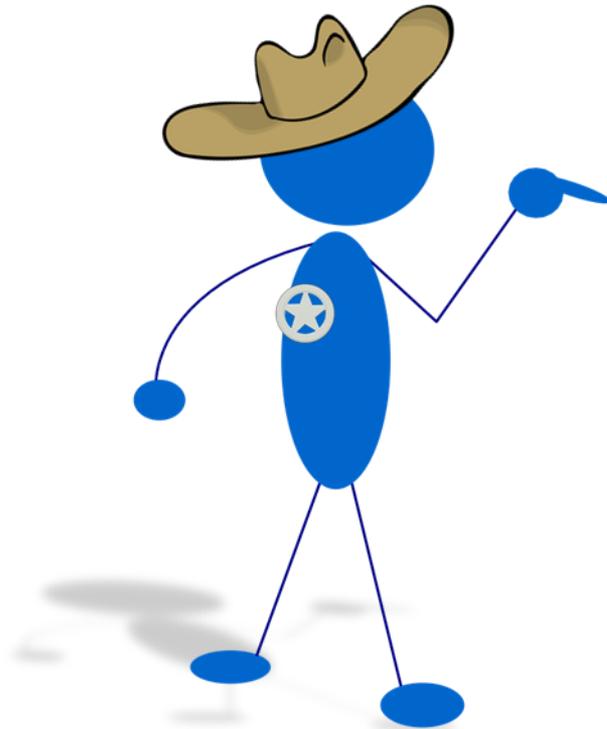
✓ The expert
✓ Configure it
✓ Make it work
✓ Help others
✓ Make it consistent

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Help users see the value of using the tool
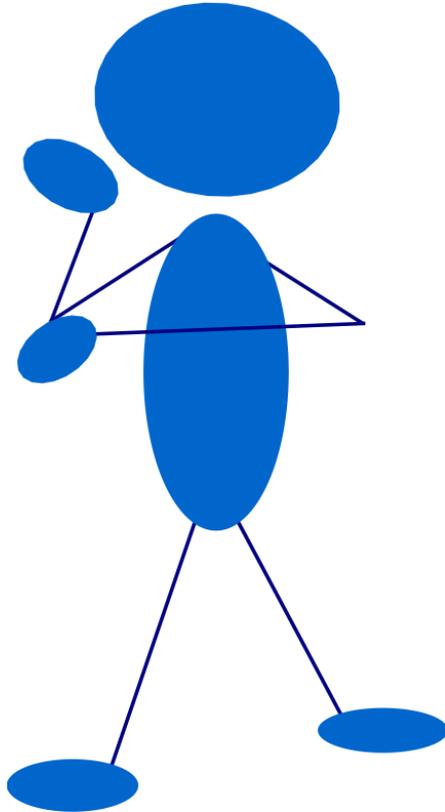
- ✓ Help them understand the pain of not having one
- ✓ Share stories
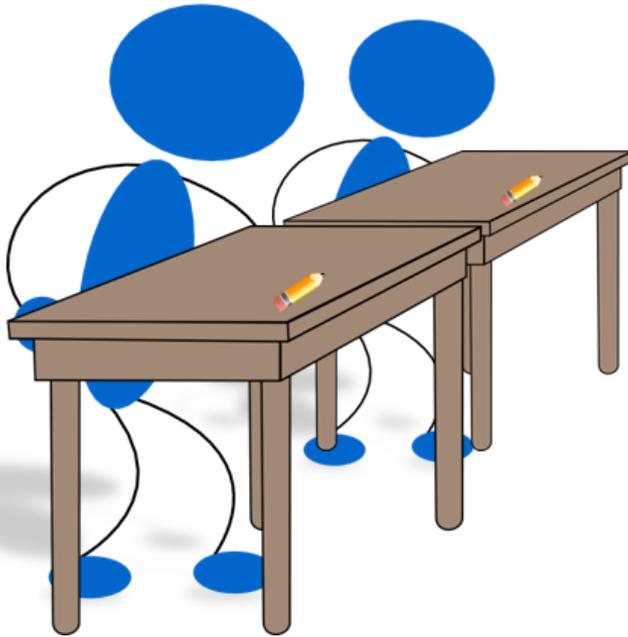
✓ Decrease their learning curve

Pilot a tool on one project first before a mass rollout
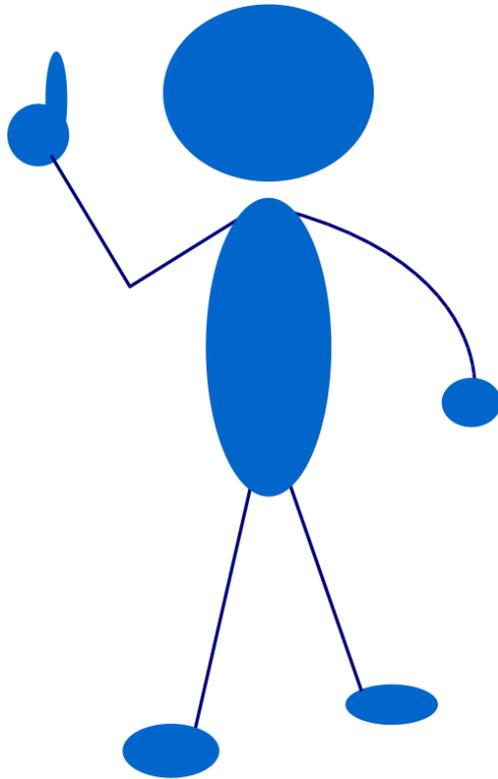
✓ Start small
✓ Grow adoption

Celebrate successes, even small ones!

☑ A requirements tool selection process

☑ Seilevel's tool evaluation results

☑ Increasing tool adoption

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Suggested Reading

[Whitepaper 1: Tool evaluation process](#)

[Whitepaper 2: Tool evaluation results](#)

Link to book: http://amzn.to/OxgGsC
Link to pre-order 3E: http://amzn.com/0735679665
Our Requirements Blog: http://www.seilevel.com/blog

What questions do you have?

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9. Requirements estimation

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