

A Few Words First

Courtesy – Please mute your phone (*6 toggle)

Jul 6, Summer Social: Systems Life Cycle of the Grape, Tasting and Appetizers
St Clair Bistro, 901 Rio Grande Blvd NW, Albuquerque
Check in 5:00-5:30, Winemaking overview (Heidi Hahn) and tasting at 5:30
Free, with max one guest, limited to first 36 people
Register ASAP at www.eventbrite.com/e/systems-life-cycle-of-the-grape-tickets-25780104988

Aug 10, Larry Pohlmann, How Ready Are We to Routinely Consider Natural Systems Data and Solution Concepts?

Oct 28-29 – Socorro Systems Summit – 2-Day Collaborative Workshop
Produced by Enchantment Chapter and New Mexico Tech

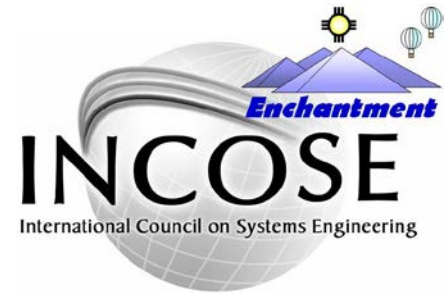


- **Date: Friday/Saturday, October 28-29.**
- **Place: New Mexico Tech, Socorro, NM.**
- **Fee: \$100, students free.**
- **Keynote: INCOSE President-Elect Garry Roedler.**
- **8 collaborative workshops explore issues of mutual interest.**
- **Survey will ask for topics of interest, please respond.**
- **See Q2 Newsletter page 1 and 7 for objectives and ConOps.**
- **See flyer on Chapter website, Library tab.**

First slide, not recorded but retained in pdf presentation.

And Now - Introductions

Enchantment Chapter Monthly Meeting



8 June 2016 – 4:45-6:00 pm:

Cooks, Recipes and Ingredients

Andy Pickard, INCOSE Chief of Staff, Rolls-Royce Associate Fellow in SE

Andrew.C.Pickard@rolls-royce.com

Abstract: To make a meal, you need ingredients and a recipe. A recipe defines sequencing, quantities, timing etc. This is analogous to a project's processes (ingredients) and life-cycle (recipe). For a project, the attributes of cost, schedule and quality are properties that emerge from the recipes and ingredients. But how important is the recipe? The study behind this presentation found instances where a project's recipe had a 16-fold cost difference using the exact same ingredients. This suggests that a good cook can make a great meal almost regardless of the ingredients. Many Project Managers inadvertently become chefs of their projects and create new recipes in their attempt to recover their project. However, few managers are aware of the outcome of the recipes they create. When things turn out unexpectedly, generally badly, they blame the ingredients and not the recipe. This presentation will show how a business can characterize a recipe to meet business goals, define it in a structured way (a reference model) and then use that definition to plan and monitor a project. The method has been used at Rolls-Royce since 2002 and has been shown to improve project success, halving the level of scrap and rework whilst holding schedule. In one case, this method brought a 45% cost reduction to a project with only a small increase to schedule.

Download slides today-only from GlobalMeetSeven file library or
anytime from the Library at www.incose.org/enchantment

NOTE: This meeting will be recorded

Today's Presentation

Things to Think About

How can this be applied in your work environment?

What did you hear that will influence your thinking?

What is your take away from this presentation?

Speaker Bio



Andrew Pickard, INCOSE Chief of Staff, Rolls-Royce Associate Fellow in System Engineering.

Andy joined Rolls-Royce in 1977 after completing a Ph.D. at Cambridge University in Fatigue and Fracture of Metals and Alloys.

He is a Rolls-Royce Associate Fellow in System Engineering, a Fellow of the Institute of Materials, Minerals and Mining, a Chartered Engineer and a member of SAE International and of INCOSE.

He is Vice-Chair of the SAE Aerospace Council and represents Rolls-Royce on the INCOSE Corporate Advisory Board.

25th anniversary
annual INCOSE
international symposium
Seattle, WA
July 13 - 16, 2015



Cooks, Recipes and Ingredients

Andy J. Nolan and Andrew C Pickard



Grumpy old men!

*Still yelling, still
fighting and still
ready for
INCOSE*

Please call me
Jack

Please call me
Walter

GRUMPIER OLD MEN

STILL YELLING. STILL FIGHTING. STILL READY FOR INCOSE



25th anniversary
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This
presentation is
an appetiser.
We encourage
you to read the
paper.



Part 1

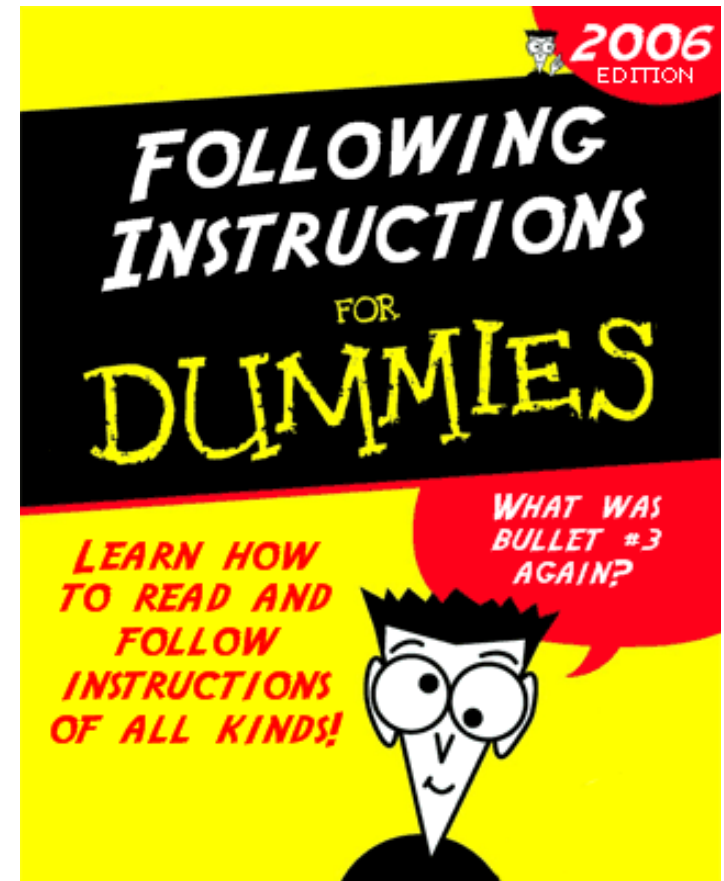
Philosophy



How many of you have done the following?



- ☹ Built a model without reading the instructions??
- ☹ Cooked a meal without reading the recipe?
- ☹ Ignored the directions “suggested” by your spouse?
- ☹ Installed equipment only to realize you missed something at the start?
- ☹ Ignored your doctor’s instructions to loose weight?
- ☹ Ever been non compliant to your companies processes?



Cooks, Recipes & Ingredients



Chef: the person who follows the recipe. In this analogy the Project Manager is often the chef.

A recipe card for "Ultimate Brownies" from "Cook's Group". It lists ingredients and instructions. The ingredients include 12 Tbsp Unsalted Butter, 5 oz Unsweetened Chocolate, 2 1/4 cup Sugar, 3 ea Eggs, 1 1/2 tsp Vanilla Extract, 1 1/4 cup All Purpose Flour, 1/2 tsp Salt, and 1 cup Chocolate Chips. The instructions are: 1. Preheat oven to 350° F and lightly spray pan with nonstick cooking spray. 2. Place the unsweetened chocolate and butter in a bowl over a pot of lightly simmering water. The water should not touch the bottom of the bowl. Stir frequently until chocolate and butter are completely melted and remove bowl from the pot. 3. Stir in the sugar. Then stir in the eggs, one at a time, and vanilla extract. Follow with the flour and salt, mixing just until combined. Stir in the chocolate chips. Spread the batter into the prepared pan. 4. Bake for about 35-40 minutes or until a toothpick inserted in the brownie comes out with moist crumbs. The card also features a small illustration of a chef and a "RECIPES" logo.

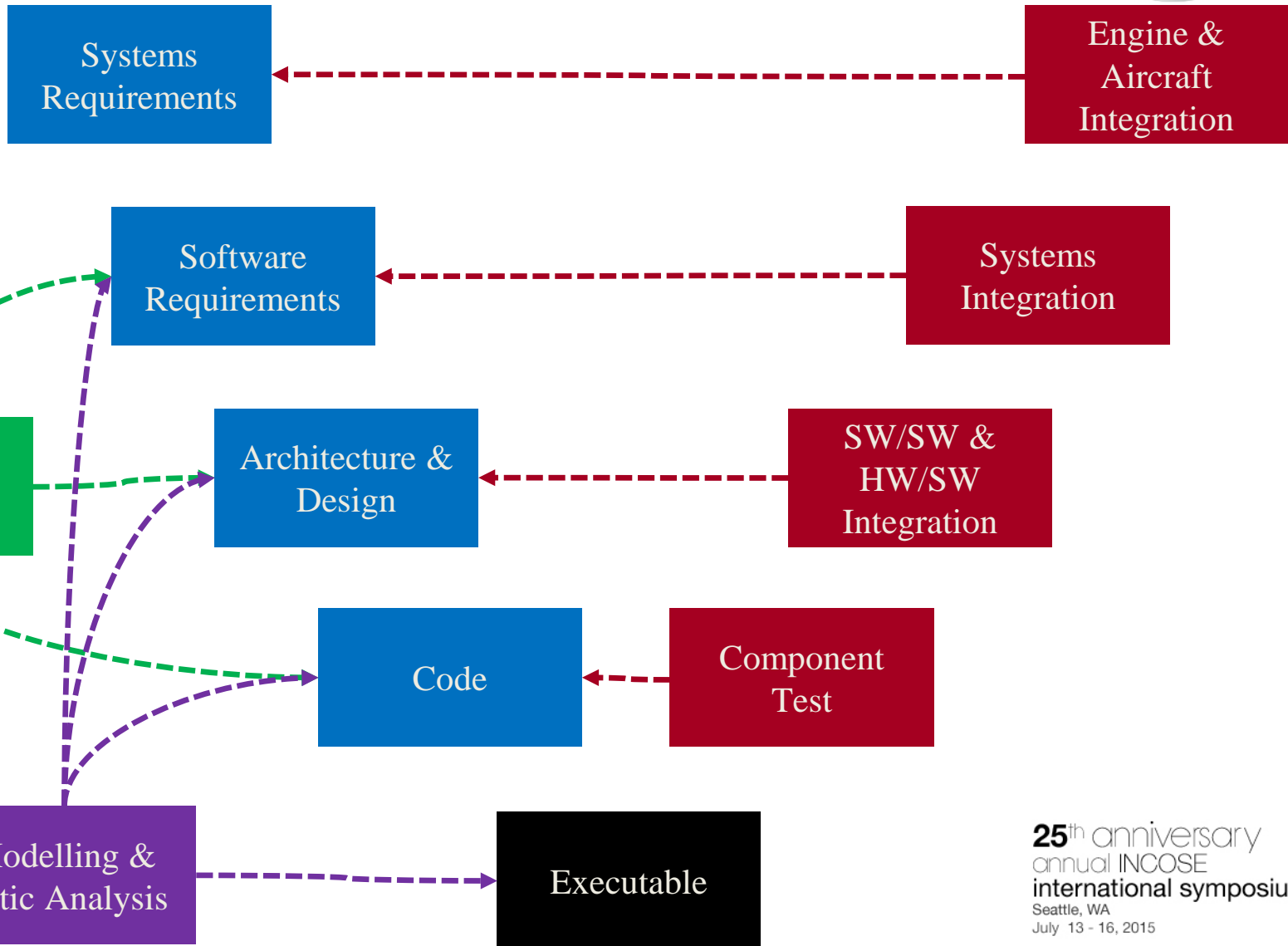
Recipe: the sequence, timing and proportions of ingredients. In this analogy the recipe is the process map, the life-cycle of a project etc.



Ingredients: In this analogy this relates to individual processes and activities.



Software Recipe





Project Pressures on the Recipe



		Low Pressure	High Pressure
Strong Management			
Poor Management			



Project Pressures on the Recipe



Many problems manifest as technical issues but their root cause is poor project management





Cooks, Recipes and Ingredients



Recipe5

Make it

Deliver

Capture requirements

Review requirements

Test

Recipe4

Make it

Capture requirements

Deliver

Review requirements

Test

Recipe3

Capture requirements

Make it

Deliver

Review requirements

Test

Recipe2

Capture requirements

Review requirements

Make it

Deliver

Test

Recipe1

Capture requirements

Review requirements

Make it

Test

Deliver



Cooks, Recipes and Ingredients



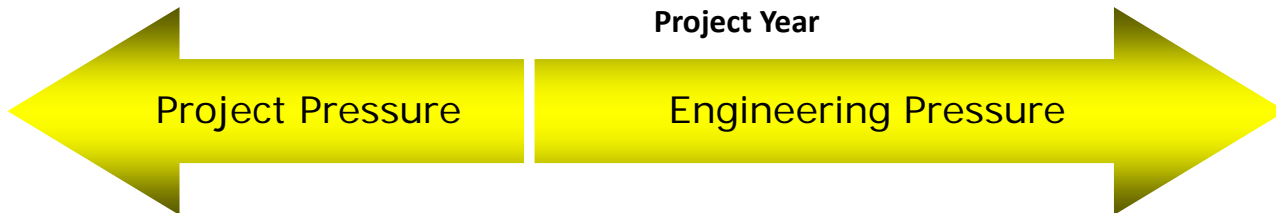
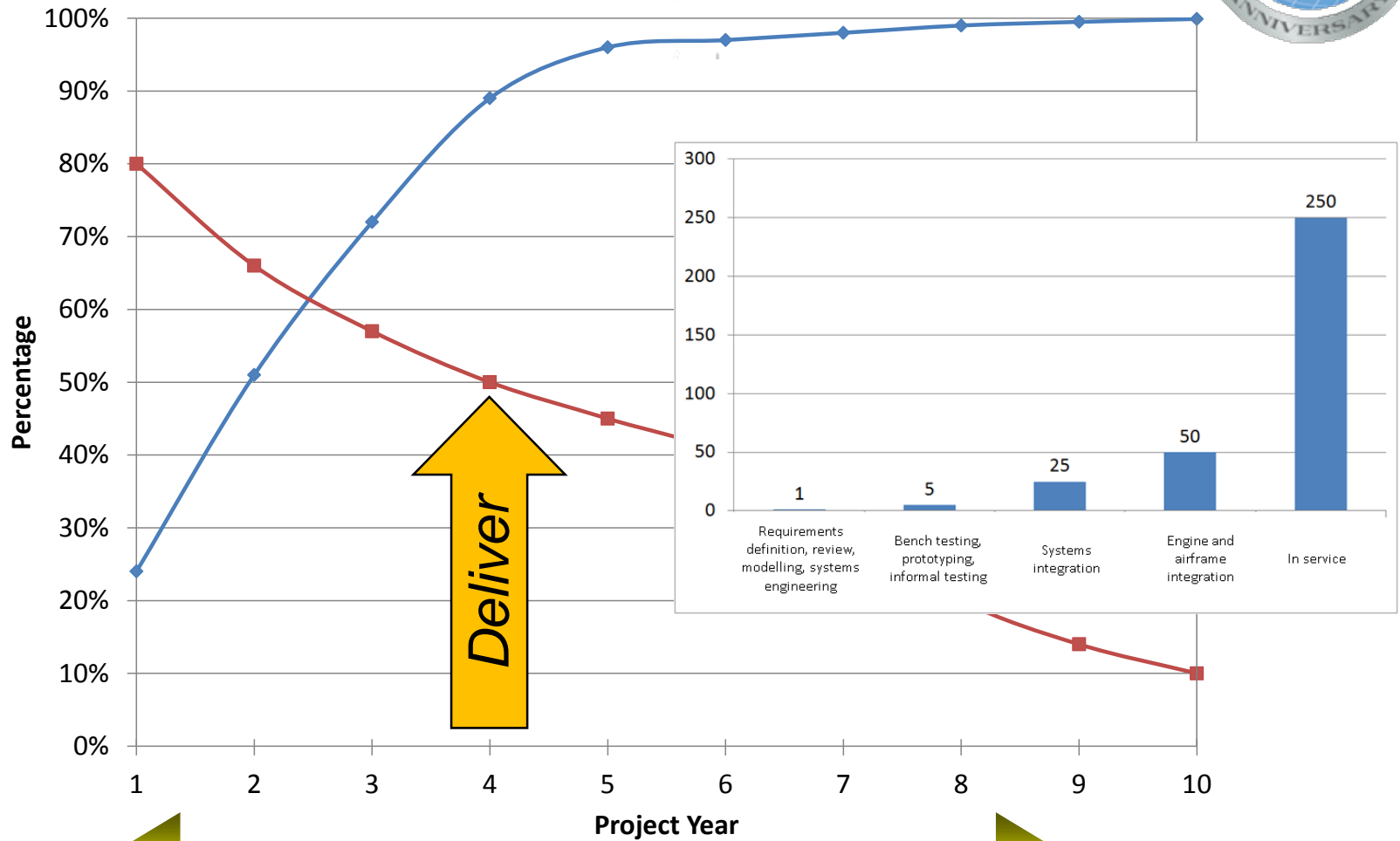
Success is determined not only by the ingredients but by the recipe!

The Project Manager is often the chef that ignores the recipe and blames the ingredients





Project Pressures on the Recipe





Project Pressures on the Recipe



The cost to mature a product is determined by how a project is managed

A drive for delivery at the expense of maturity will increase project costs





Part 2

Building a gated process



Goals



- What are your goals?
 - Time (schedule)
 - Cost
 - Maturity



- Our goal was highest maturity for lowest cost. Other goals could be shortest time



The Gated Process



	Gate 1	Gate 2	Gate 3	Gate 4	Gate 5	Gate 6
Artefact 1	D	R	I			
Artefact 2		D	R	R		I
Artefact 3		D	R	R	I	
Test 1		D	E		I	
Test 2		D	D	E	E	I
Test 3		D	D	E	E	I

D = Draft
R = Review
E = Execute
I = Issue



The Gated Process



	Gate 1	Gate 2	Gate 3	Gate 4	Gate 5	Gate 6
Artefact 1	D	R	I			
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Test 1		D	E	E	I	
Test 2		D	D	E	E	I
Test 3		D	D	E	E	I

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Best practice
Ideal
High risk
Do not breach



The Gated Process



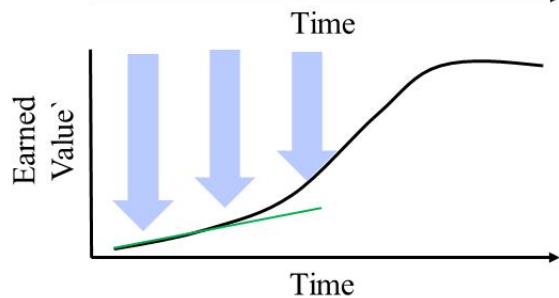
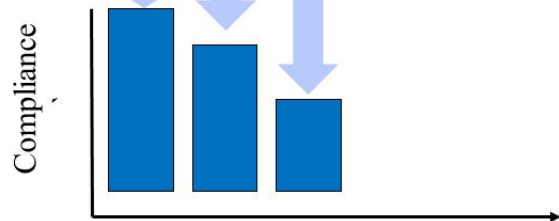
100 artefacts, 19 gates and 350 – 450 transitions



The Gated Process



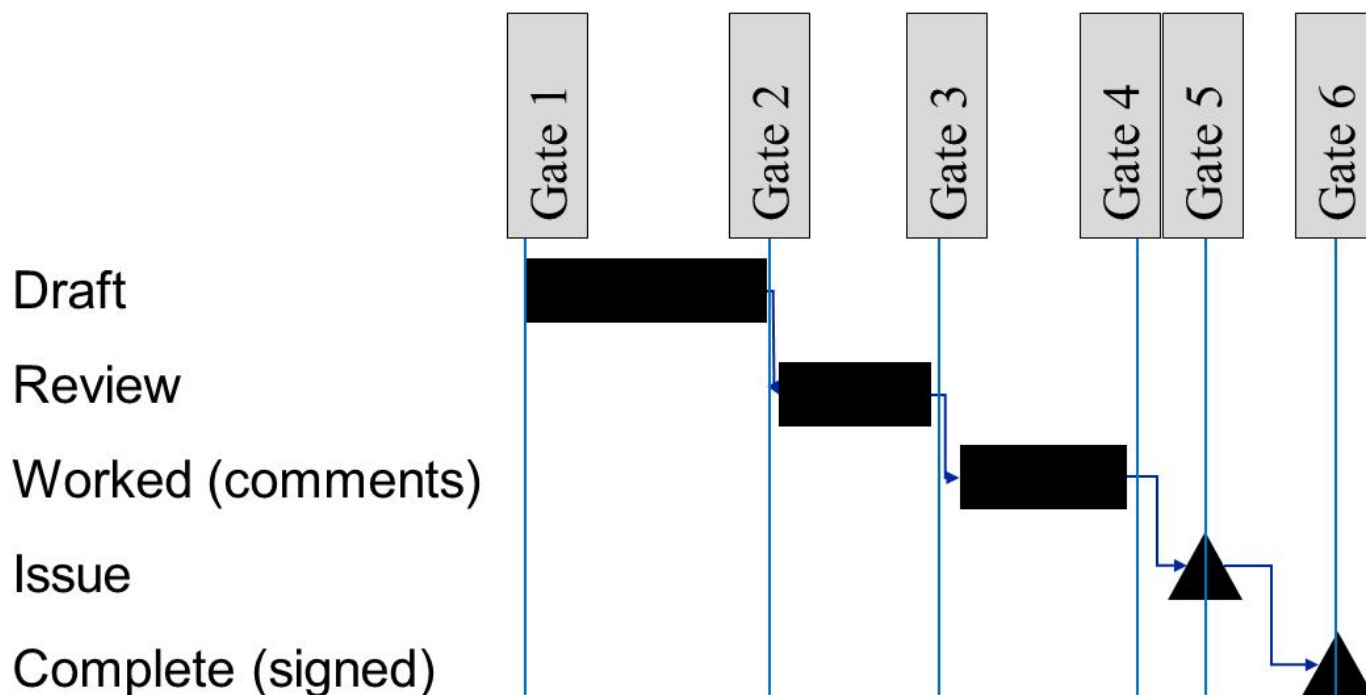
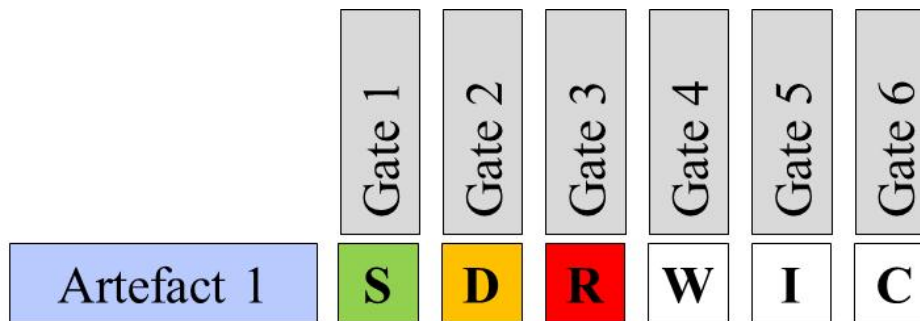
	Gate 1	Gate 2	Gate 3	Gate 4	Gate 5	Gate 6
Artefact 1	✓	✓	✓			
Artefact 2		✓	✓	✗		✗
Artefact 3		✓	✗	✗		✗
Test 1		✓	✗		✗	
Test 2		✗	✓	✗	✓	
Test 3		✗	✓	✗		✗



Can be used to track earned-X where “X” is anything you define it to be e.g. cost, maturity etc.



The Gated Process





Part 3

Conclusions

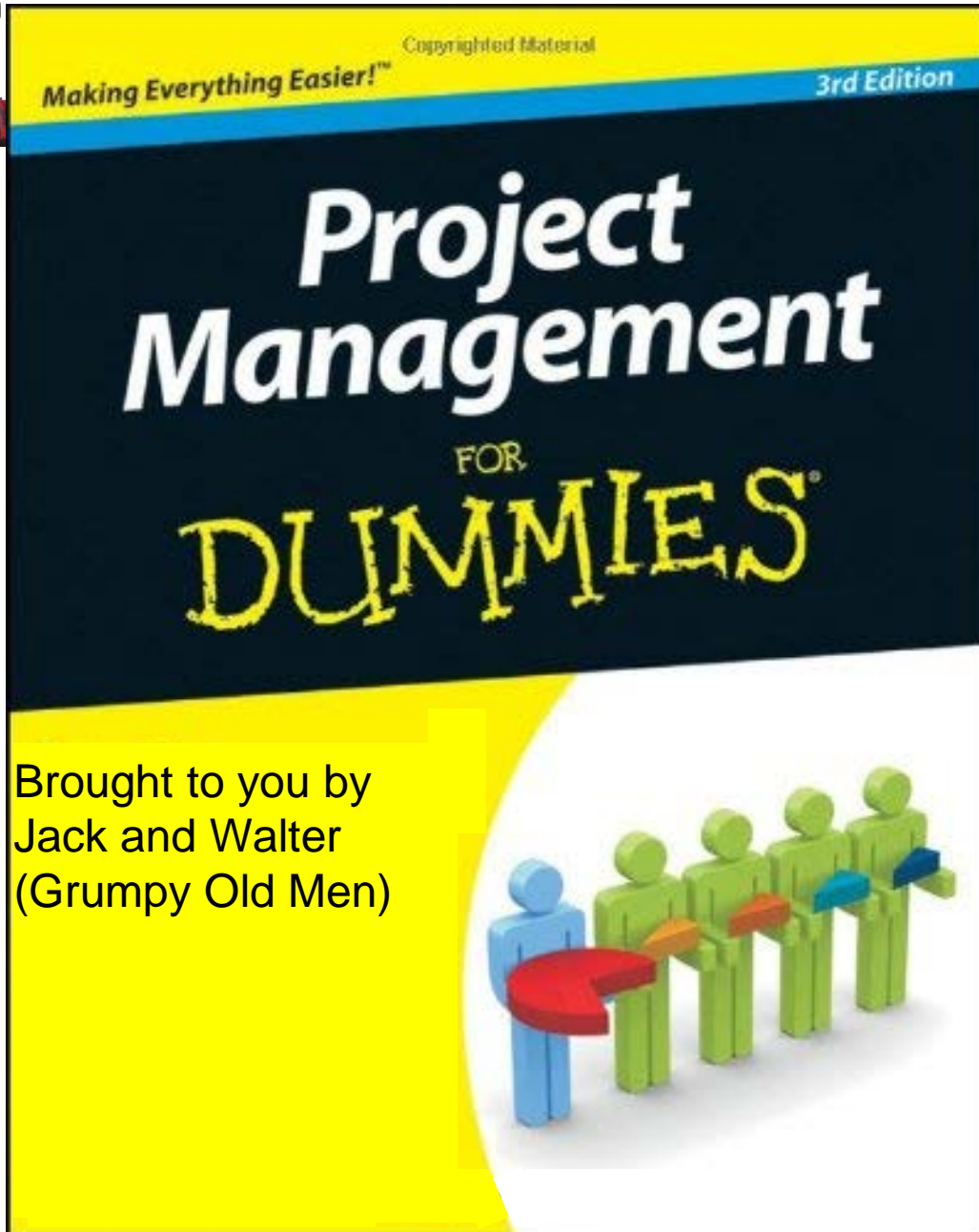


Conclusions



The Gated Process:

- Defines a reference model of the ideal
- Measures against the reference model
- Maintains focus on projects goals
- Has simple notation – does not require training
- Has rich notation – high level of control
- Is readily available to all – not just PMs
- Reduces defect escapes by 50%
- Reduces costs by up to 45%
- Facilitates estimation, planning and tracking



Any Questions?



Jack
(Andy)



Walter
(Andy)

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Please

The link for the online survey for this meeting is

www.surveymonkey.com/r/enchant_06_08_16

www.surveymonkey.com/r/enchant_06_08_16

Look in GlobalMeet chat box for cut & paste link.

Slide presentation can be downloaded now/anytime from:

The library page at: www.incose.org/enchantment

Recording will be there library tomorrow.