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**Software Firm +  
CMMI Maturity Level 2 Initiative +  
15 months  
=  
Dramatic Quality Improvements**

**Jeff Simpson  
Director of Quality  
Campus Management Corp**



**CAMPUS<sup>SM</sup>**  
MANAGEMENT



CMMI . Software Release Readiness



CMM and Six Sigma



**Pratt & Whitney**  
A United Technologies Company



F119

Software Development and Project Management



**FPL.**

Benchmarking and Hurricanes



# Software is Software

## “ **Campus Management is not:**

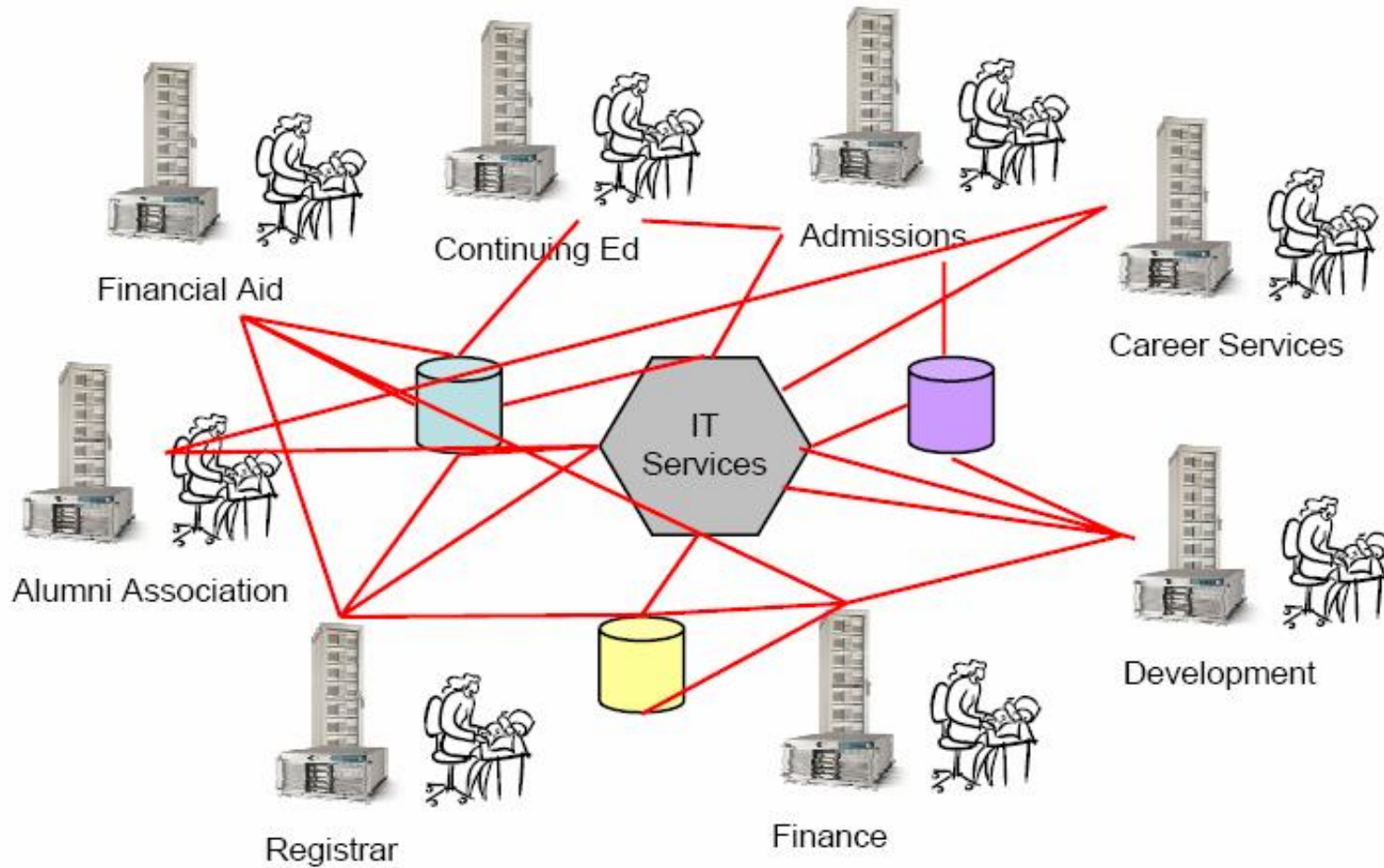
- **An aerospace giant – developing software to design jet engines or weapon systems**
- **A medium size firm who needs to be a specific CMMI maturity level to compete for defense contracts**
- **A telecommunications leader writing software for the 10,000,000 cell phones it sells per year**

## ” **Campus Management is**

- **A privately held software firm started approx 17 years ago with a vision to provide business solutions to the “for-profit” segment of the secondary education market**
- **Approx 300 employees – growing rapidly**
- **Has expanded its customer base to the “not-for-profit” segment**
- **Revenues and success 100% dependent on the quality of its software**
- **Working hard to achieve CMMI Maturity Level 3 in the 2Q 2008**



# Information in 21<sup>st</sup> century







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# of Student Portal

## CAMPUS<sup>SM</sup> UNIVERSITY MANAGEMENT

Hello Mona! [Logout](#) | [Help](#)

[My Home Page](#) [Personalize](#)

February 06, 2007

- ▶ Campus Info
- ▶ Online Application
- ▶ My Academics
- ▶ Transfer Credits
- ▶ Financial Aid
- ▶ My Housing
- ▶ My Profile
- ▶ Message Center
- ▶ My Finances
- ▶ My Financial Aid
- ▶ My Documents
- ▶ My Career
- ▶ External Links

### Weather

Conditions for Boca Raton, FL at 9:53 am EST

**Current Conditions:**  
Light Drizzle, 61 F

**Forecast:**  
Tue - Sprinkles, High: 73  
Low: 61  
Wed - Partly Cloudy,  
High: 78 Low: 66

[Full Forecast at Yahoo! Weather](#)  
(provided by The Weather Channel)

### Advisor Center

NEW StaffGroup  
✉ Mani Mehta

### At a Glance

### News Center

#### News

Campus Management Corp announces new configurable web portals, providing schools with more control!...more

Corrie Bryan of Highland, Md has received an Associate of Arts degree in Culinary Arts...more

### Calendar.nav

#### My Calendar

Tuesday Choose Day

February 2007

S	M	T	W	T	F	S
---	---	---	---	---	---	---

### MSN TopStories

*U.S. unit walks fine line in Baghdad*

The American and Iraqi plan to pacify Baghdad rests on the assumption that U.S. troops can win the trust of a wary population by protecting civilians trapped amid sectarian warfare.

*Astronaut arrested in alleged plot*

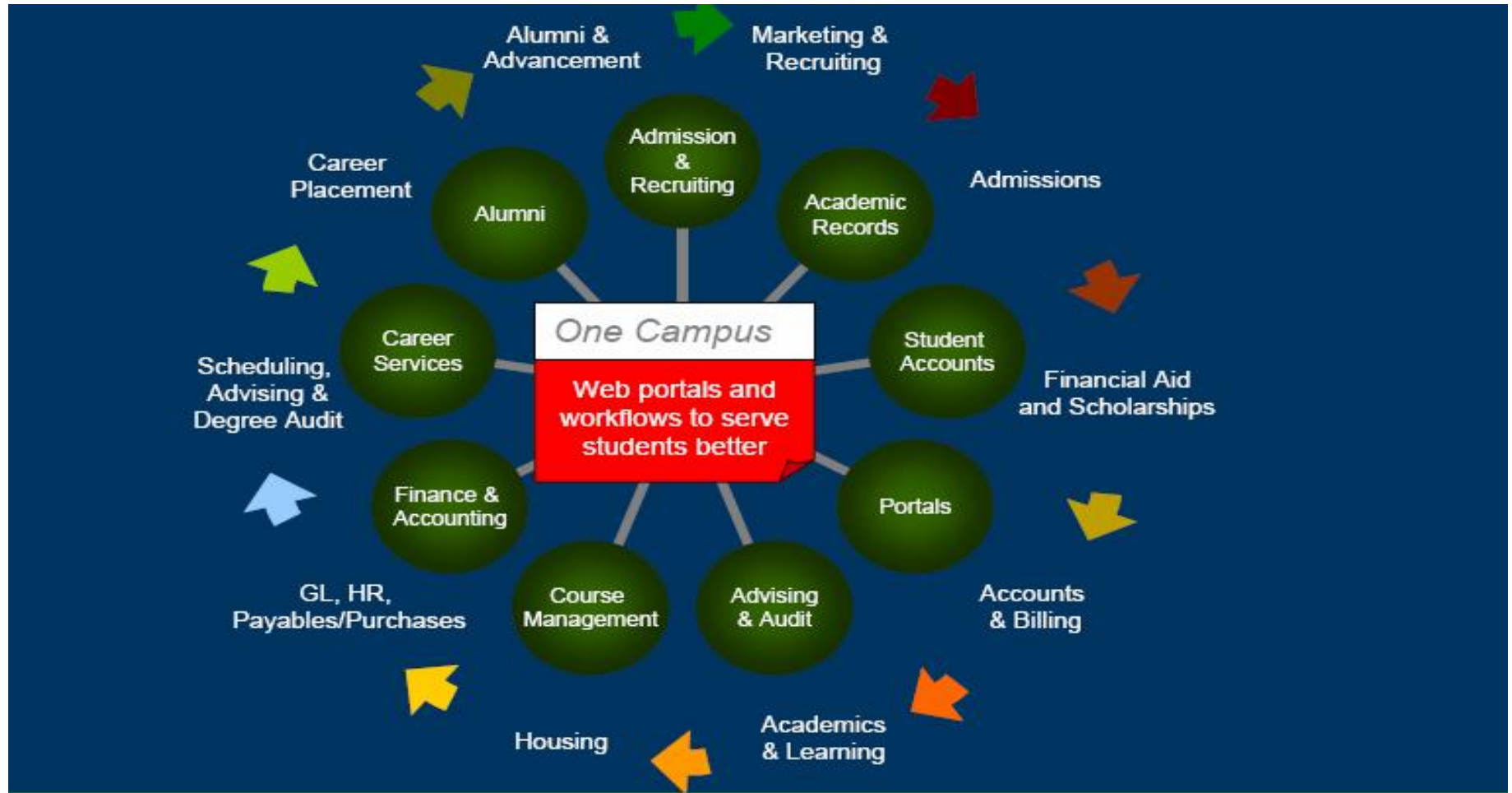
A NASA astronaut charged with attempting to kidnap a romantic rival in a love triangle with another astronaut was allowed to go free on bail Tuesday on the condition that she not contact the alleged victim.

*Fire investigators' 'No Go Team'*

An investigation



# Student lifecycle management



# Quality 2 Level Journey – began

- “ **2Q 2005 – major release of software – quality concerns from clients expressed at annual users conference**
  - . **Periodic quality initiatives had been attempted but with no structure and quickly abandoned**
  - . **As delivery dates were being approached and client demands were increasing all existing process was thrown out the window**
  - . **Plenty of CMMI Maturity Level 1 Heroes**
  - . **Enterprise clients demanded quality improvements**
  
- “ **3Q 2005 – executive decision to commit to quality and filled Director of Quality position**
  
- “ **4Q 2005 –**
  - . **CMMI – is it the answer ?**
  - . **2005 NDIA CMMI Conference**
  - . **Consultant Preliminary Search**



# Security 2 Level Journey – Steps

## ” 1Q 2006

### . **SEPG Formation**

- ” **Two project directors**
- ” **Three aspiring project managers**
- ” **Documentation specialist**
- ” **No CMMI training, but PMI experience**
- ” **Influential and enthusiastic**
- ” **Unfortunately no software developers**
- ” **Weekly meetings**

### . **CMMI Consultant Selection**

- ” **Interviewed four consulting firms**
- ” **Selected Don Franke Associates per recommendation of a South Florida Lockheed division and a Pratt & Whitney division**

### . **Reorganization**

- ” **Director of Quality - Independent of Development**







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# Security 2 Level Journey – Begins

Home - Process Asset Library - Microsoft Internet Explorer


Address: http://cmportal.campusmgmt.com/dev/sp/default.aspx

Quick Launch

Documents		
Type	Name	Modified
Document	RABAJobDuties	5/29/2007 1:01 PM
Document	CMC Naming Convention for Project Documents	5/16/2007 10:11 AM
Document	Release Announcement Process Flow 4	4/3/2007 11:19 AM
Document	Guidelines for Completing Release Notes in CQ	3/30/2007 4:31 PM
Document	Software Release Approval Process	3/30/2007 1:57 PM
Document	Process Asset Development	3/30/2007 1:37 PM
Document	Build Integrity Guidelines	3/29/2007 8:11 AM
Document	Customer Change Request Guidelines	2/9/2007 11:44 AM
Document	Data Management Guidelines	2/8/2007 5:04 PM
Document	Process Document Submittal Guidelines	2/7/2007 5:50 PM
Document	Design Review Guidelines	2/7/2007 5:35 PM
Diagram	Micro-Small-Large Decision Flow	12/28/2006 10:46 AM
Diagram	Process Flow Diagram	4/27/2006 2:09 PM
Folder	Requirements Resources	10/8/2007 2:46 PM
Folder	Lessons Learned	8/24/2007 1:54 PM
Folder	Presentation Templates	6/18/2007 10:03 AM
Folder	Sample Templates from Requirements Training	6/15/2007 4:06 PM
Folder	E-Project Guidelines	1/8/2007 11:03 AM

Templates			
Edit	Type	Name	Modified
Category : 0) Department (2)			
Document	Document	Meeting Notes Template	3/23/2007 12:10 PM
Document	Document	DefectTemplateDev	9/24/2007 4:47 PM

**Links**

- CMC Product Development Portal
- Software Engineering Institute CMMI
- Requirements Management
- Project Planning
- Project Monitoring and Control
- Measurement and Analysis
- Process and Product Quality
- Configuration Management
- Supplier Agreement Management
- Business Continuity - Disaster Recovery
- CMMI Version 1.2
- Change Request System
- Software Metrics
- CMMI - Agile

Add new link

**Announcements**

**Core Dev Team Reference Chart** @  
by Tara Asch 5/8/2007 2:48 PM

**Patch Team Reference Chart** @  
by Tara Asch 4/3/2007 5:07 PM  
Patch Team Assignments by Module



## Process Asset Library



# and Consultant Visits

## ” ***Internally Developed Training***

- ***Department wide “Introduction to CMMI”***
- ***Executive Overview***
- ***Introduction to Six Sigma***

## ” ***External Training***

- ***“Introduction to CMMI V1.2 Training” for SEPG members***

## ” ***Initial Consultant visit 1Q 2006, and then every quarter***



# Maturity 2 Level Journey – Expectations

## ” **Expectations – Management**

- **CMMI is not a magic bullet**
- **Maturity Level 2 Project Plan**

## ” **Expectations – Development Staff**

- **Do not have to become CMMI experts**
- **Controlled - gradual change**
- **Weekly hallway meetings – 5 minutes max**
- **Positive Reinforcement – convince they are doing a good job (even if they are not) 😊**

## ” **Expectations – Customers**

- **Monthly presentations on progress**



# Maturity 2 Level Journey – Metrics, Metrics, Metrics

## ” Why?

- ***Not because Measurement and Analysis is a maturity level 2 Process area but because:***
  - ” ***Executives are impatient***
  - ” ***As soon as the CMMI Consultant leaves the room they start whispering, no – actually speaking out loud: “18 months is the average, but we are better than the average, we will achieve maturity level 2 in 6 months”***
  - ” ***Solution – immediately create a baseline of whatever quality indicator is important***

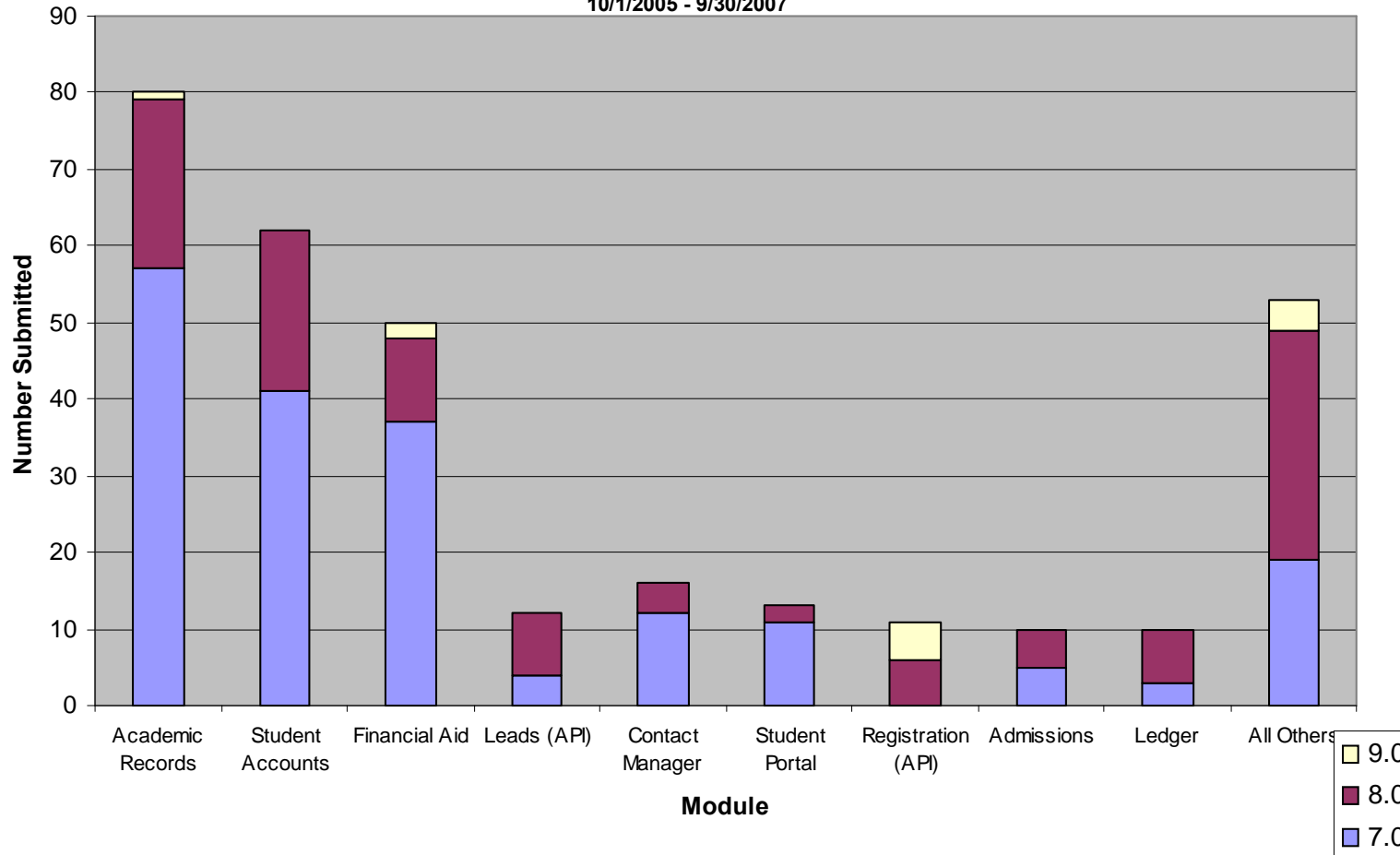




# ase Defects

**Customer Submitted Severity 1 Post Release Defects**

10/1/2005 - 9/30/2007



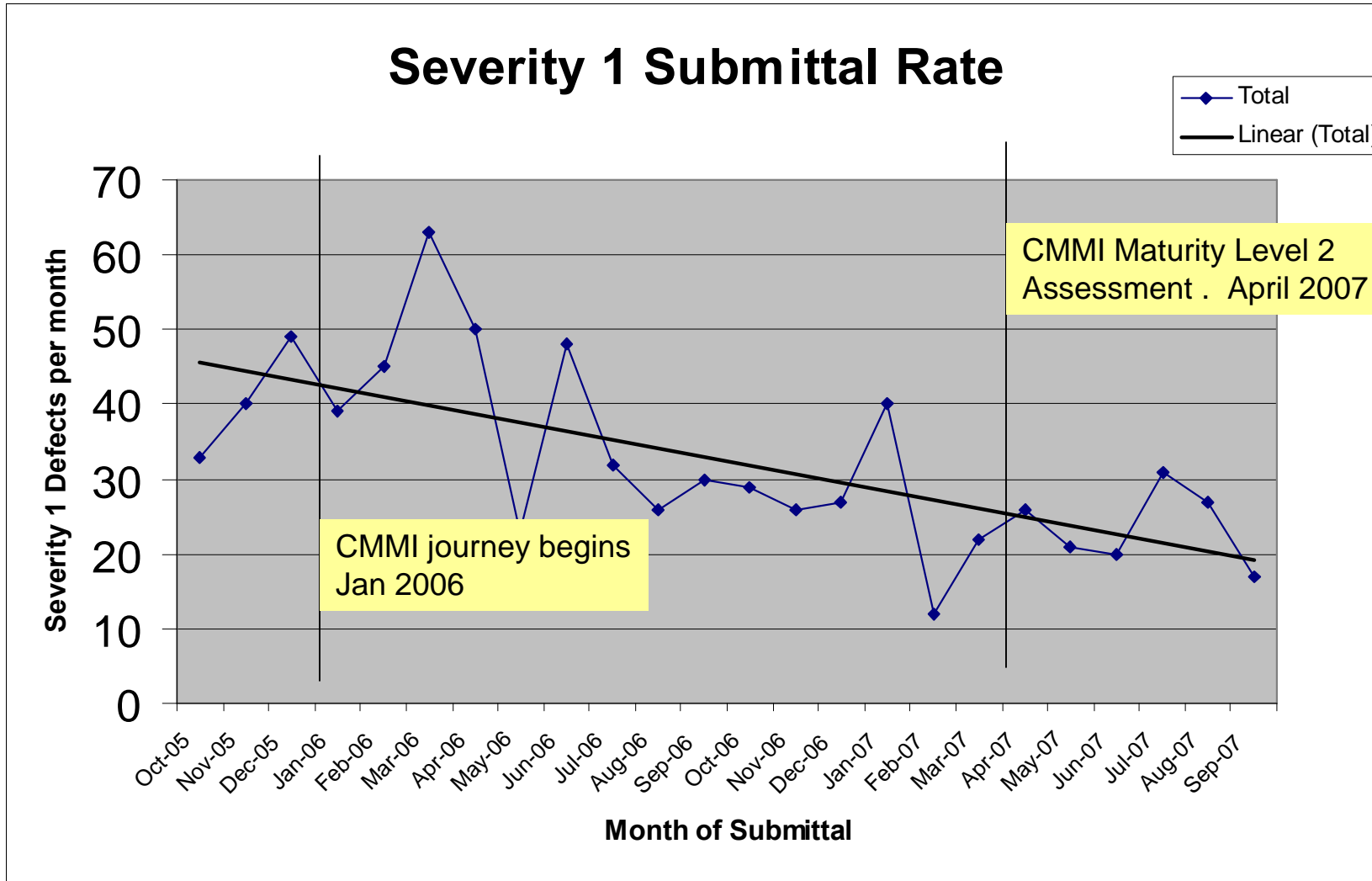
Release 7.0  
pre-CMMI

Release 8.0  
in the midst of  
CMMI L2  
journey

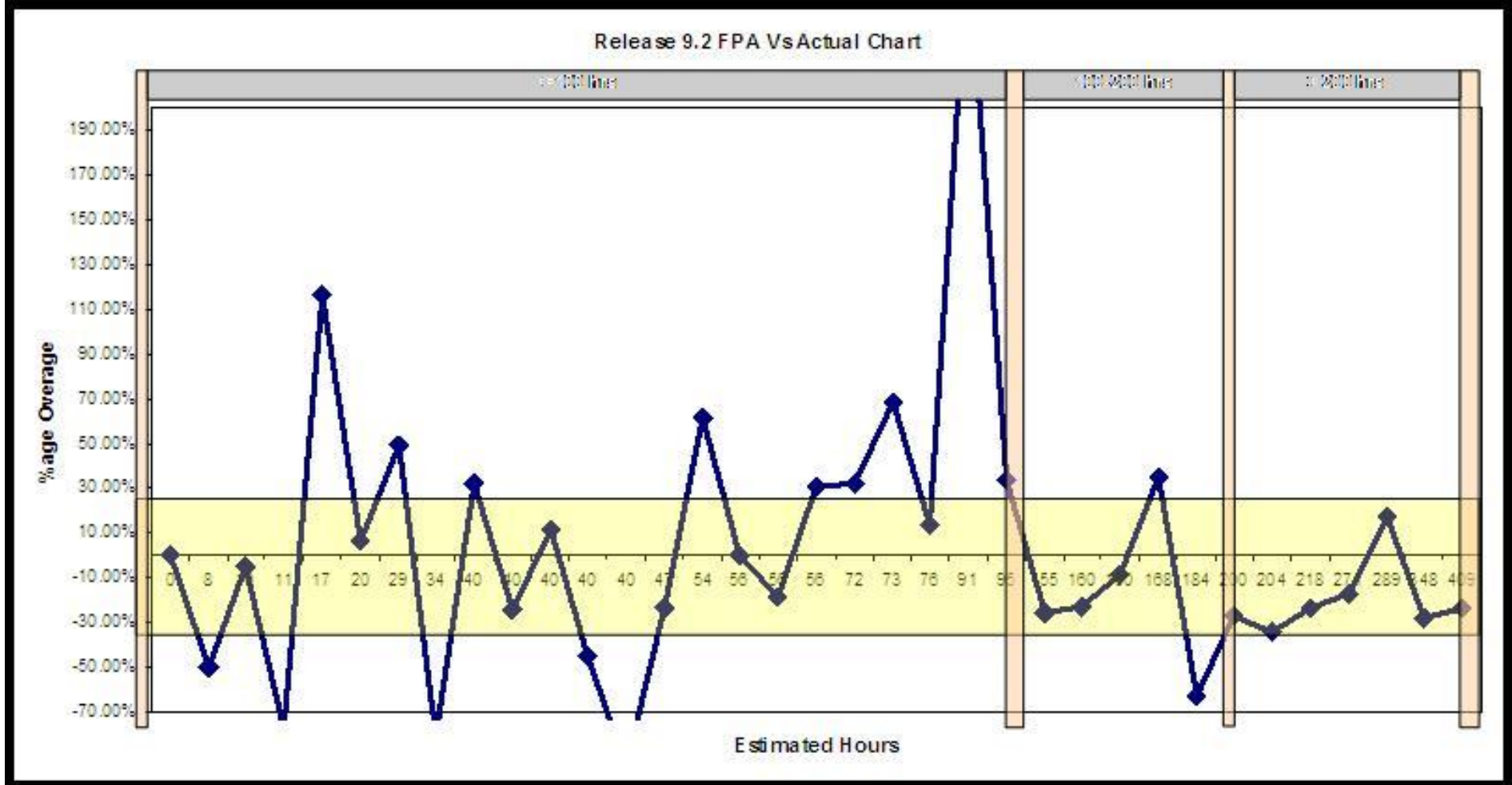
Release 9.0  
post CMMI L2  
assessment



# Submittal Rate



# Variance vs Function Points



# Maturity 2 Level Journey – Recommendations

## “ SCAMPI C –

- *do your own, easy to do, doesn't have to be perfect*
- *great communication reference with executives*

## “ SCAMPI B – critical, why

- *Not free, and if executives won't pay for one to show their commitment, then stop, do not pass Go*
- *A great pretest for assessment team and organization*

## “ SCAMPI A –

- *Treat it as fun, culmination of great work*
- *Do not stress out organization*
- *Just like any other week – if it is not, are you really CMMI Maturity Level 2, or 3, etc ?*





# Success

- ” Training . word of caution . make sure internal trainer is good, not just good, very good . keep sessions to the point, not much fluff, no silly games
- ” Project Planning . the key process area
- ” Quality not CMMI - Don't keep talking CMMI but the message is quality . when it comes right down to it that is what it is all about
- ” Experience . hire someone who has CMMI experience
- ” Quick Hits . almost subliminal CMMI messages
- ” Customers . most important advocate



# s to Success

“ Google . don't become addicted - don't want your weekly status report to read %oGoogled Measurement and Analysis+

“ Graybeards - great source for baseline but be skeptical

*“We got some tall tales that we love to tell  
They may not be true  
But we sure do remember them well”*



# CMMI Maturity Level 2

- ” Immediately performed a CMMI Maturity Level 3 SCAMPI C
  - Kept executive buy-in
  - Development organization realized the journey is not over
  - helped prevent regression (not talking about testing)
  
- ” Agile Methodology
  - First reaction . %Oh No+. and more %Google-ing+
  - Led to switch to consultants . *David Consulting Group*
  - Doing some great things with Project Planning and related process areas . adopting into standard life-cycle process



# Security Level 3 Gap Analysis

Process Area	Specific Practices		
	Green	Yellow	Red
ML3 - Decision Analysis Resolution	0	1	5
ML3 - Integrated Project Management	2	7	0
ML3 - Verification	1	7	0
ML3 - Risk Management	2	5	0
ML3 - Validation	3	2	0
ML3 - Requirements Development	7	3	0
ML3 - Technical Solution	6	2	0
ML3 - Product Integration	0	9	0
ML3 - Organizational Training	0	6	1
ML3 - Organizational Process Focus	3	6	0
ML3 - Organizational Process Definition	4	1	0
<b>Totals</b>	<b>28</b>	<b>49</b>	<b>6</b>







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Please 😊

