Highlights of

First Annual Conference on Quality Software Development

CSU Sacramento

October 10, 2008

Mr. Kim Berry - CSUS BSCS 1990



CSUS plans to hold an annual "Software Quality Conference." My notes from the "first annual" conference follow. The event was organized by Cici Mattiuzzi, who was the career coordinator when I was at CSUS and I've stayed in touch with.

Software Development at Google

Dave Ferguson, President, Mahalo Logic (Director of Engineering, Google 2004-2008)

People

Google's quality process begins by hiring the most capable people. They look for:

- Breadth knows computer science
- Depth must be expert in something
- Reputation gets things done, followed through on projects begin to end

Project managers do not act as hiring managers. Hiring is centralized. Then a central committee places new hires on teams.

Google founder Larry Page reviews all hiring decisions – about 23,000 so far.

http://en.wikipedia.org/wiki/Larry Page

Once hired, the environment encourages cooperation. Project mangers cannot do promotions, these are based upon recommendations by peers – and a key factor is how much assistance workers provided to teammates.

Dave observed that many employers seem to have "built-in systems that encourage contention" and prima-donnas. The corporate culture at Google strives to avoid these.

Process

Employees spend 20% of their time "doing whatever they want." If they think they've done something of value they pitch the idea to try to get resources.

Projects start with a short (5-10 page) "design document" followed by a design review. They don't use a specific methodology such as "UML diagrams," – just state in clear language what the system will do and how

However they do obsess about coding style, and have employees who are "certified" in coding standards reviewing the code.

They do usability testing and unit testing.

QA is done "when the lines of code are written."

Google has a separate team that supports libraries for DB connection, logging, and other housekeeping. This is one way that consistency is enforced in a large organization.

Before a project gets released, it is presented to Larry, who can be brutal. He will challenge it to be better and more productive. It also gets passed through a security review.

Their process is highly iterative, with many projects being enhancements to current products, such as the pending products in GMail Labs:

http://labs.google.com/

Due to ongoing acquisitions, they have had to learn to work in a co-located manner.



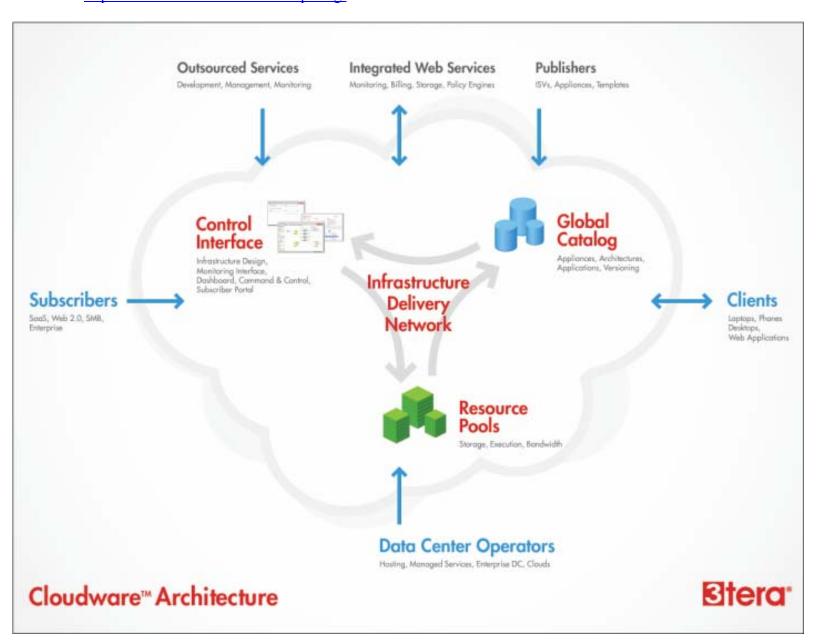
How We Entered the Cloud: Computing on the Web

Bob Batchelder, QA Manager, LexisNexis

The initial theme was how the "cloud" has common features with what mainframes provided 40 years ago.

The concept is that services are available for use, often billed at "per resource utilized" (much like buying CPUs from a mainframe) without regard to the technical details of security, backup, and such. Quality is achieved by allowing experts in security and reliable to manage those aspects.

The presentation utilized the diagram and information on this page: http://www.3tera.com/Cloud-computing/



Today startups can be launched on cloud providers with minimal investment. A DB can be designed and deployed on Amazon SimpleDB:

http://aws.amazon.com/simpledb/

Salesforce can provide many software services for a low monthly fee:

http://www.salesforce.com/

The NY Times used Amazon EC2 to provide the terabytes they needed to archive past issues – they decided that this made the most economic sense, rather than investing in hardware that would need to be maintained and eventually replaced:

http://aws.amazon.com/ec2/

Within an Enterprise we are also moving towards a Cloud, for example with Microsoft Hyper V:

http://www.microsoft.com/windowsserver2008/en/us/hyperv.aspx

There is a Cloud Conference:

http://www.cloudsummit.com/

Additional info in BusinessWeek article:

www.businessweek.com/technology/content/nov2007/tc20071116 379585.htm



Extreme Project Management

Edward S. Allen, Senior Project Manager, CA Legislative Data Center

Edward gave a full-on presentation of how LDC is using extreme programming. He relies upon books by Doug DeCarlo:

http://www.dougdecarlo.com/

http://www.projectconnections.com/articles/decarlo.html

Preview of book: http://books.google.com/books?id=Z5SSIsA4M-0C

The premise is that Newtonian approach is too much planning. Extreme programming uses a Quantum "right brain" approach that is creative and operates with less guidelines, as summarized here:

http://it.toolbox.com/blogs/coneblog/interview-doug-decarlo-einstein-4629

Are We Building the Right Product?

Mike McCullough, Engineering Program Manager, Hewlett-Packard

The core of Mike's presentation was to engage the customer (users, stakeholders) in the test process as soon as possible.

Pre Release Validation Test (PRVT) is proactive process of analysis, review and testing that partner with the customer during the development lifecycle to reduce ambiguities in requirements, design, and acceptance criteria. PRVT validates features and capabilities of the proposed final system before product release to market.

Mike explained how his team is using .NET to quickly prototype web interfaces that have the look/feel of the final system, and allow the user to use them to gather feedback on usability and missing features.

Mike also spoke about "Requirements Gap Analysis." Here are some Google matches for "Gap Analysis":

www.9001resource.com/how to conduct a gap analysis/how to perform a gap analysis.php

http://searchcio-midmarket.techtarget.com/sDefinition/0,,sid183 gci831294,00.html

DEFINITION - In information technology, gap analysis is the study of the differences between two different information systems or applications, often for the purpose of determining how to get from one state to a new state. A gap is sometimes spoken of as "the space between where we are and where we want to be." Gap analysis is undertaken as a means of bridging that space. Among the various methodologies used to perform gap analysis is IDEF, a group of methods used to create a model of a system, analyze the model, create a model of a desired version of the system, and to aid in the transition from one to the other.

ABSTRACTS

http://www.ecs.csus.edu/career/software/abstracts.html

The following are the names and bios of the presenters, titles and abstracts of their presentations for the SE conference:

Edward S. Allen, Legislative Data Center edward.allen@lc.ca.gov

Title: Extreme Project Management

Abstract:

My presentation centers on successfully accomplishing projects and satisfying customer expectations in environments not conducive to practicing and performing best practices in project management. This presentation brings out the skill sets that every project manager must know for the negotiation of resources, working with the customer, and guiding the project team through a hostile project management environment. I use concepts developed by Doug De Carlo in his book "Extreme project management," and methodologies practiced in Agile Project Software Development to provide examples of performing best project management practices in less than ideal project development environments.

Bio:

Mr. Allen has over 35 years associated with and managing projects. He spent 20 years in the air Force, working on Weapons Development Programs. He spent 11 years with Northrop Grumman Aircraft performing project management for various areas in software development and cost analysis. He has worked as a project management consultant for various state agencies and is presently the senior project manager in the Project Management Office for the Legislative Data Center, State of California. Mr. Allen holds degrees from Purdue University, Golden Gate University, and Chapman University and is a certified Project Management Professional PMP.

Nadeem Shafi and Nadean Shavor

Title: Agile Software Development and Quality at FTB

Abstract:

A look at the Agile software development methodology and how it can result in quality software for Franchise Tax Board. As agile software development practices move into the mainstream, it will be vital that you understand what agile is all about and how agile practices can help you deliver better software.

Traditional development methodologies like the Waterfall approach can loss sight of quality and more importantly value. In comparison, Agile centers on value with the highest priority to satisfy the customer through early and continuous delivery of valuable software. Thus, Agile can result in high quality, value driven software when implement for the right project and right environment. The practical application of Agile at Franchise Tax Board has proven that it results in quality software.

Nadeem Shafi and Nadean Shavor will be sharing information on such topics as:

Agile Methods and Processes

Transitioning to Agile

Agile Leadership Principles

Estimating in Agile Projects

Lean Software Development

Organizational Models for Agile

Agile Release Planning

Managing Agile Projects User Stories and Use Cases

Agile Design Approaches

Pair Programming

Agile Teams

Measuring Agility

Continuous Integration

Test Driven Development

Tester Roles in Agile Distributed Agile Development

Collaboration Methods

Personal Skills Development

Behavior Driven Development

Becoming a Change Agent

Scaling Agile Projects

Hiring and Developing Agile Teams

Bio:

Nadeem Shafi is a California State University of Sacramento graduate and a former MISA member. Nadeem graduated in Spring 2003 with a Bachelor of Science (BS) in Management Information Systems (MIS). Before graduating, Nadeem worked for Lawrence Livermore National Laboratory in a nine-month student co-op. After graduating, he worked independently and then in private consulting as a programmer. Later, he temporarily worked for Franchise Tax Board, which eventually he returned to work full-time as an applications developer for the last two years. Nadeem works for the Audit Information Technology Management Bureau for the Technology Services Division supporting multiple applications ranging from client/server to mainframe platforms. Nadeem is a Sacramento native.

Nadean Shavor graduated from CSU, Sacramento with a BS degree in Computer Science in 1999. While pursuing a degree, Nadean worked on a research team for compressing data streams for live video across the internet. After graduation, Nadean was hired at Franchise Tax Board, State of California, to develop their internal intranet. In 2005, Nadean was the lead over all Internet development for the Franchise Tax Board (FTB). Applications that she was instrumental in their development are CalFile, Ready Return, and My FTB. With over 10 years of programming experience, Nadean now manages the NOC (Network Operations Center). The NOC monitors FTB's external facing systems 24x7. Nadean lives in the Sacramento area and enjoys her time off with her family and friends.

Dave Ferguson, Mahalo Logic dave@mahalologic.com (davef@google.com in the past)

Title: Software Development at Google

Abstract:

Over the past 10 years Google has gone from a startup founded by two computer scientists working on one project to a company with thousands of software developers and computer engineers working on hundreds of different projects. During this time Google has established a reputation for developing applications that are highly reliable, frequently updated and very

useful. This talk will explore how Google's software development is done, which aspects of their processes seem to matter most and how they differ from more traditional methodologies.

Bio:

Dave Ferguson, president of Mahalo Logic, has been managing software development projects and writing code for over 20 years. Prior to Mahalo Logic, Dave was an engineering director at Google and was responsible for their small business initiatives. He arrived at Google through an acquisition of Ignite Logic, a company he founded in 2003. Other projects that Dave has worked on have included developing electronic billing applications (DST Output), overseeing the development of Quicken (Intuit), managing the development of OCR products OmniPage (Caere) and WordScan (Calera Recognition Systems) and developing forms processing systems (IBM).

Mike McCullough, Hewlett-Packard mike.g.mccullough@hp.com

Title: Are we building the right product?

Abstract:

Customer driven requirements become a formal process that bridge business and technical requirements into Research and Development. Pre Release Validation Test (PRVT) is proactive process of analysis, review and testing that partner with the customer during the development lifecycle to reduce ambiguities in requirements, design, and acceptance criteria. PRVT validates features and capabilities of the proposed final system before product release to market.

Bio:

Mike McCullough is an Engineering Program Manager at Hewlett-Packard in the Image and Printing Group. Prior to this role he worked as an Engineering Project Manager in HP Storage, at IBM as an Support Account manager and a Product Line Consultant specializing in enterprise email, and at Lotus Development Corporation as a Systems Engineer for Support. Mike holds a BS from the University of Texas and an MSMOT with high honors from Golden Gate University.

Bob Batchelder, LexisNexis bob.batchelder@lexisnexis.com

Title: How We Entered The Cloud: Computing in the Web

Abstract:

We are entering a new era in computing. Application development and deliver completely in cyberspace. How did we end up in this new paradigm? What lessons from the past will apply to this future?

In the modern software world, the ever increasing pressure to develop more complex applications faster with less costs coupled with the needs to have complete accessibility and portability of end applications is driving a need for a new software development and delivery model.

Traditional software development models and software distribution methods will not be sufficient.

To meet the needs for this advanced software model, software development, software application delivery and machine infrastructure must be ubiquitous. This means that the software development, application execution, and machine infrastructure will need to be virtual services access only with a browser. It's happening today!

Bio:

Bob Batchelder has 20 years of experience and currently is the Manager of Quality Assurance (QA) at LexisNexis Examen, Inc. (LNEI) overseeing e-billing and Legal Spend Management products for the Legal industry. In his current role, Bob oversees all aspects of Quality Assurance for the products developed out of Sacramento. Additionally, Bob also runs the Business Intelligence Team (BIT) delivering Enterprise Reporting to the LNEI client base. Bob also manages the outsourcing for the Development, BIT, and QA teams. Prior to joining LexisNexis, Bob was a Director of Product Marketing, Director of Quality Assurance, and Director of Software Development at Unify Corporation delivering the Unify RDBMS, VISION 4GL, and eWave J2EE Application Server. Bao's educational background includes a BSEE and Mathematic Minor from the University of Minnesota, an MBA from the University of St. Thomas and a Fast-Track Executive program from Stanford University.

Bob holds a Bachelor of Science (BS) in Computer Science from Oregon State University.