



Raptor Extinction Leads to the Rise of the Empires

Presented by Matt House, Carl Rudroff, & Tonya Munger

Where We Started...

- One **large** software project comprised of several small development teams
- Teams lacked **cohesion** and **identity**
- Program management office **controlled** processes and schedules
- **Overwhelming** and **ever-changing** integrated master schedule

You Bred Raptors?

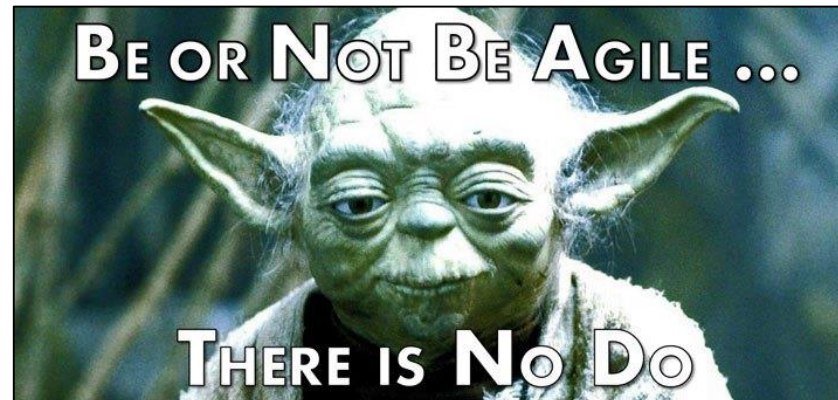
- Frustrations led one of the development teams to break from the existing processes and implement an agile approach to software development
- Took one team through an agile boot camp **outside** of Boeing
- **Stood-down** 3 weeks for a “sprint 0”
 - Established a team operating rhythm
 - Established norms for the team
 - What is an acceptable requirement?
 - Definition of done?
 - **Engaged** internal customers to promote two-way communication
- **Empowered** the team by giving them ownership of the process
- Team **performance** significantly improved



The “Velocity Raptors” were Born

Don't Do Agile...Be Agile

- Cannot just be a **process** change, must be a **culture** change too
- Teams must have **autonomy** and be **empowered** with **ownership** of their processes
- Moved from a system of **individual** assignments to one of **team-level** commitments
 - No team member was assigned work. Team members chose work from the WIP board themselves.
 - Team members started picking user stories to work on together. This led to increased quality and cross-training.
- Most importantly, the team **bonded** to such a degree that they **owned** any success or failure as a team.



What You're Doing Is Great...Now Please Don't Do It Anymore

- Program management didn't like the Raptors' autonomy
 - Frustrated with lack of control
 - Wanted **standardized** development process with a "one size fits all" formula
- Program management constraints led to other teams lacking ownership of the process
- Program management had created a culture that didn't inspire improvement, ownership, or accountability



A New Opportunity

- In contrast to program management, **executive leadership** took note of the Raptor's success and realized the program needed to change
- Leadership asked the Velocity Raptors to find a way to **propagate** that success throughout the program
- Goal was to lead the charge in **re-organizing** the project to implement a scaled-agile approach to manage the program
- The challenge was to do this in a **5 week window** that would still accommodate existing program commitments



A Push for Change

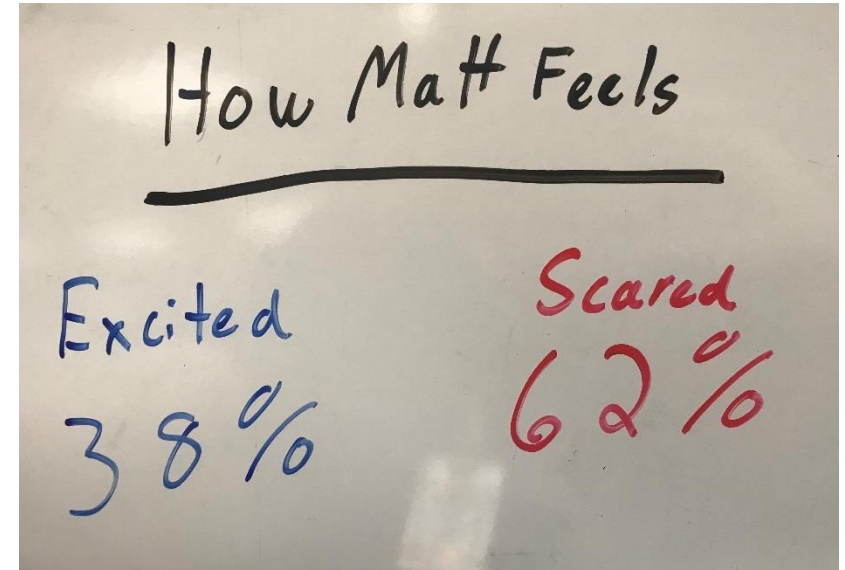
- All team members went through the **same** boot camp, from SIUE, as the Raptors
- Teams were re-organized around software capabilities
- Velocity Raptors were dispersed across the project to help **propagate** processes and culture
- Subject matter experts were assigned to each of the teams in a **product owner** role
- **Empowerment** was key – teams were given control of sprint plans, team norms, and team name
- Adopted the concept of a “**release train**” comprised of small teams that operate together towards a common release



The Rise of the Empires...

Backlog Prep and Sprint 0

- All existing requirements were decomposed and prioritized
- For most team members, this was their first experience breaking requirements into user stories
- Scrum masters worked with program leadership to determine where processes would fall, “federal” or “state”



The Program Increment

- Chose a central **theme** all teams could unite under: **Historical Empires**
- All teams participated in a **program increment planning event**, which involved over 100 software developers, scrum masters, analysts, and product owners
- Planned each team’s work into a series of seven sprints that would begin and end at the same time with a **coordinated** release
 - Due to technical constraints, we could not perform a production release after each sprint
- Identified **dependencies** that existed between teams
- Actively managed risks, issues, and opportunities as a **team**

The Empires of IPDM



Leadership Response– All Teams

First things first – Thank You!

- Thank you for your engagement and hard work on Wednesday.
- Thank you for digging in and thinking creatively to plan your work.
- Thank you for your proactive communication and making conversations happen.
- Thank you for raising risks and being transparent.
- Thank you for being patient while waiting for lunch to arrive.

Leadership response – Program Themes We Heard

- **Multitenant Review:** This workshop will be scheduled in the near future (Sprint 1).
- **C-17 Production Support Plan:** IPDM Leadership is working with the program and senior (senior senior) leadership on implementation and closure criteria.
- **Legacy System Technical Debt:** Leadership team has taken an action to work this.
- **Resource Issues** (single points of knowledge/lack thereof): Leadership is communicating those risks into senior leadership.
- **Partner Integration Issues:** Senior leadership engagement for help needed. (SLICWAVE, Siemens, Nomagic)
- **Deployment Roadmap:** Leadership commits to develop a deployment roadmap by the end of Sprint 1.

The Roman Empire
Logistics Engineering – Support BOM/ECM

The Golden Horde
Production Engineering, Data Delivery (TDP), Visualization

The British Empire
MultiMedia - C17 Logistics

The Moghul Empire
Server and Infrastructure

Shangri-La
Change Management, Schedule Management, Sustaining

The Borg
Dispatcher, Workflows, Platform Systems, Electronic Products

Issue Raised

- Reqts in Sprint 2 New Requirements
- Multi-tenant Logistics Deployment - Multi-A programs
- Might take longer the batch upload (spike)
- C-17 CRs has a res Story Points to Carry

The Han Dynasty
Data Migration

Issue Raised	Response
Waiting on C-17 SMEs	C-17 Production Support Plan: IPDM Leadership is working with the program and senior (senior senior) leadership on implementation and closure criteria
Emerging Requirements	Action taken by leadership (Courtney)
Product Standards has requested help for Standard Notes	Action taken by leadership (Russ)
Product Support Data Migrations	C-17 Production Support Plan: IPDM Leadership is working with the program and senior (senior senior) leadership on implementation and closure criteria
Resource Constrains in Data Migration	Resource (single points of knowledge/lack thereof): Leadership is communicating those risks into senior leadership.
Need Siemens Data Migration Resource a help	Leadership commits to follow up (Tonya)
C-17 Lessons Learned - Data Clean Up	Opportunity - Tonya to help find resource for automation scripts
Data Validation Help Needed	C-17 Production Support Plan: IPDM Leadership is working with the program and senior (senior senior) leadership on implementation and closure criteria

The Lost City of Atlantis
PPO, Tech Insertions, Info Security, Multi-Tenant, AWS, Build Master, General User

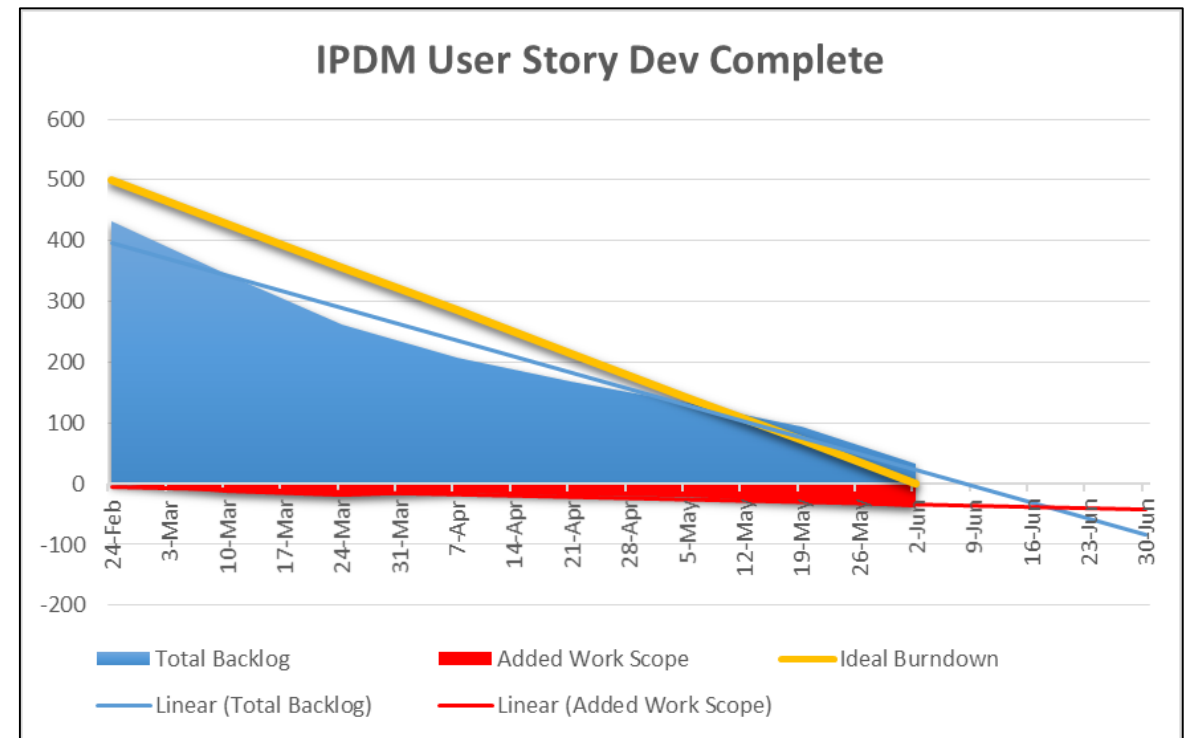
Issue Raised	Response
Active Work Space Spike during Sprint 1	Proceed as planned
No Magic Integration - Dependent on 3rd Party Plug In	Proceed as planned
Tc Reqts - Change Management Help Needed	Proceed as planned; work with Change Management team to determine touchpoints.
Active Work Space - Indexing	Proceed as planned
IBI Redesign - will be added to backlog if approved	Reserve capacity for this work, pending CR approval.
Vericode Scan - wasn't on Technology's backlog	Proceed as planned (Carl)
Multi-Tenant Basic 1-Hour meeting next week	RTE to schedule, per plan.
TcWeb R4 Functionality - Need to Replicate this somehow	Further define help needed for management (team)
R6 to R7 mission functions (what happened to the R4 items that were left behind)	Product owner action to do analysis to determine missing functionality (Bob)
Server Build Team will need to upgrade R4 systems to R7 to start Data Migration	Leadership commits to develop a deployment roadmap by the end of Sprint 1.
Server Build - Scheduled Tasks have been largely uncontrolled - there's a new process for this for TFS	Process in work; opportunity to be recorded by Joe.

Program Increment Planning Event



Increment 1 Begins

- All the teams operated with the same sprint cadence of seven, two-week sprints
- After the 14 weeks of development, we entered a 4 week testing and hardening period
- Current deployment process was quite cumbersome, so we could only get deployments to our development environment once per week
- Tracking and Metrics
 - Due to a lack of time with the backlog, we could not put story point estimates on all the work before the start
 - Because of this, we tracked a burn down of total stories



Increment 1 Retrospective

- Held a program-level retrospective to share what worked well and what didn't
- Took time to reward teams and individuals who contributed to success
- Lessons learned:
 - Do not spend hundreds of hours building a schedule that will probably change
 - It is difficult to predict what work can get finished by the end of the increment
 - While new work will inevitably emerge, product owners and customers are reluctant to remove scope from the increment to allow emergent issues to be addressed...they want it ALL
 - Disconnect still exists between product owners and customer leadership
 - E.g. severed fingers
 - The agile model is not the right solution for everything



Increment 2 – Why Aren't We Better?

Planning Event

- Had to be virtual due to budget constraints
- While teams were more familiar with agile processes the second time around; they had less time with the requirements before the planning event started

Increment 2 Begins

- Only had 4 sprints
- Overlapping deployment activities, while starting a new increment, caused issues

Lessons Learned and Moving Forward

- Increment 2 was rushed in terms of digesting the SOW and only having 4 sprints for development
- We got a lot done, but it was very stressful
- We allowed some critical development to continue – don't do this!
- Needed to do a better job of planning in the deployment support work as a part of increment planning

Where do we go from here?

- Even though the change has been hard, it's better than where we were
- We do not want to go back to the old way
- Communication has improved, but we can still make it better
- We will continue to leverage the scaled agile process, and make improvements as we go
- Culture has significantly improved –
 - Bad news is delivered more easily and people are speaking up
 - We are more actively managing risks
 - People aren't afraid to ask for help



Key Takeaways and Final Thoughts

- **Executive support** is critical to success
- Change needs to happen from both the **bottom** and the **top**
- The traditional project management approach needs to be assessed, many of those processes won't apply
- Stay focused on the **discipline** that's required to effectively manage an agile project
- Change the “status meeting” conversations to focus on the work being performed instead of providing status on a schedule
- **Empower** your scrum masters to hold the team **accountable** to following process
- It's too easy to fall back to the cultural norms when everyone around you is still behaving the “old way”
- **Culture** and **process** are equally important