DevOps In the Enterprise

Ticketmaster's Transformation Journey

@jodymulkey

Powering Life's Experiences

Video

- https://www.youtube.com/watch?v=TIA3N52vm70
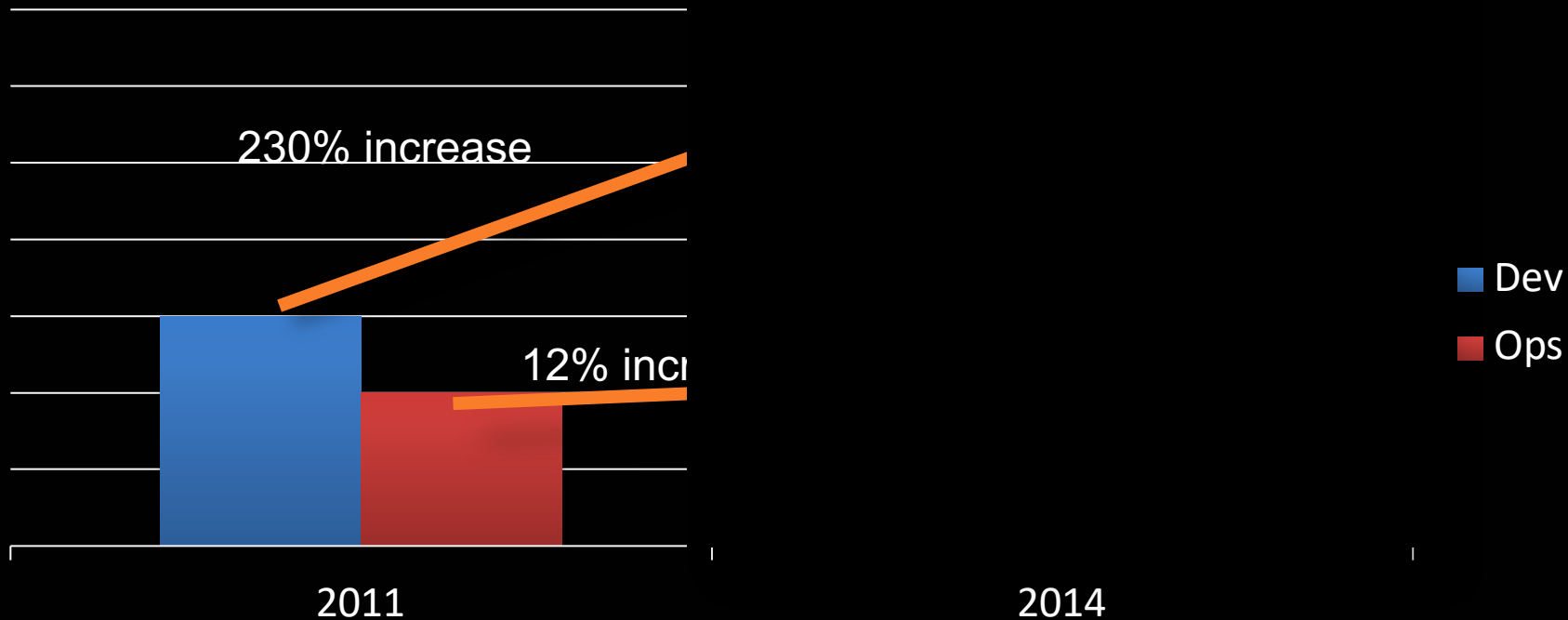
Even the longest journey must begin where you stand.
-Lao-tzu

Largest Live Entertainment company in the world.
- >450 Million fans in 40 countries
- >120 Venues Owned and Operated
- >24K Concerts

ticketmaster ®

- 1976- Founded at Arizona State University
- 1996- Ticketmaster.com launched
- 2010- Live Nation and Ticketmaster join forces
- 2011- Transformation journey begins…

Uh oh!

What now?

DevOps to the Rescue

Just like Football

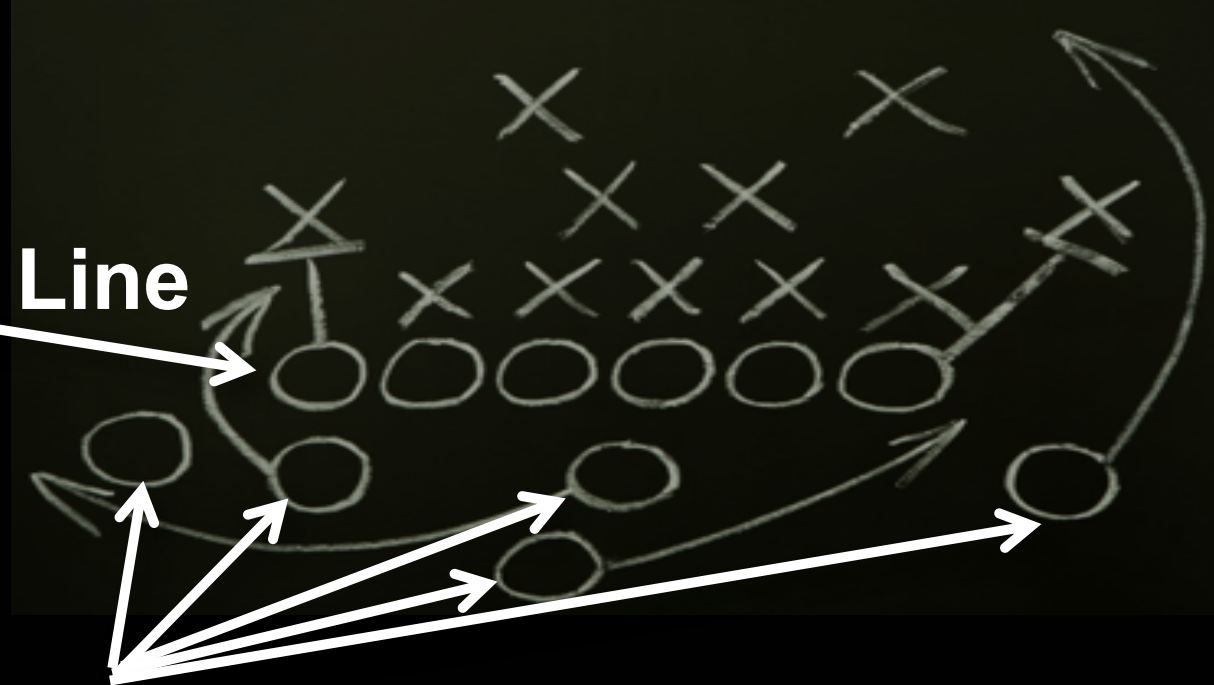Ops = Offensive Line

Dev = "Skill" positions

DevOps Strategies

- Empathy
- Empowerment
- Metrics

Empathy

- 75 in 75
- Breathing Customer Oxygen
- Everyone is a fan
- Breaking bread together

Empowerment

- Teams crave responsibility
- One team, one mission, one goal
- Development Teams Oncall
- Self Service.*

Metrics

- Business metrics > System Metrics
- Outcomes > Outputs
- Instrument everything
- Democratize the data
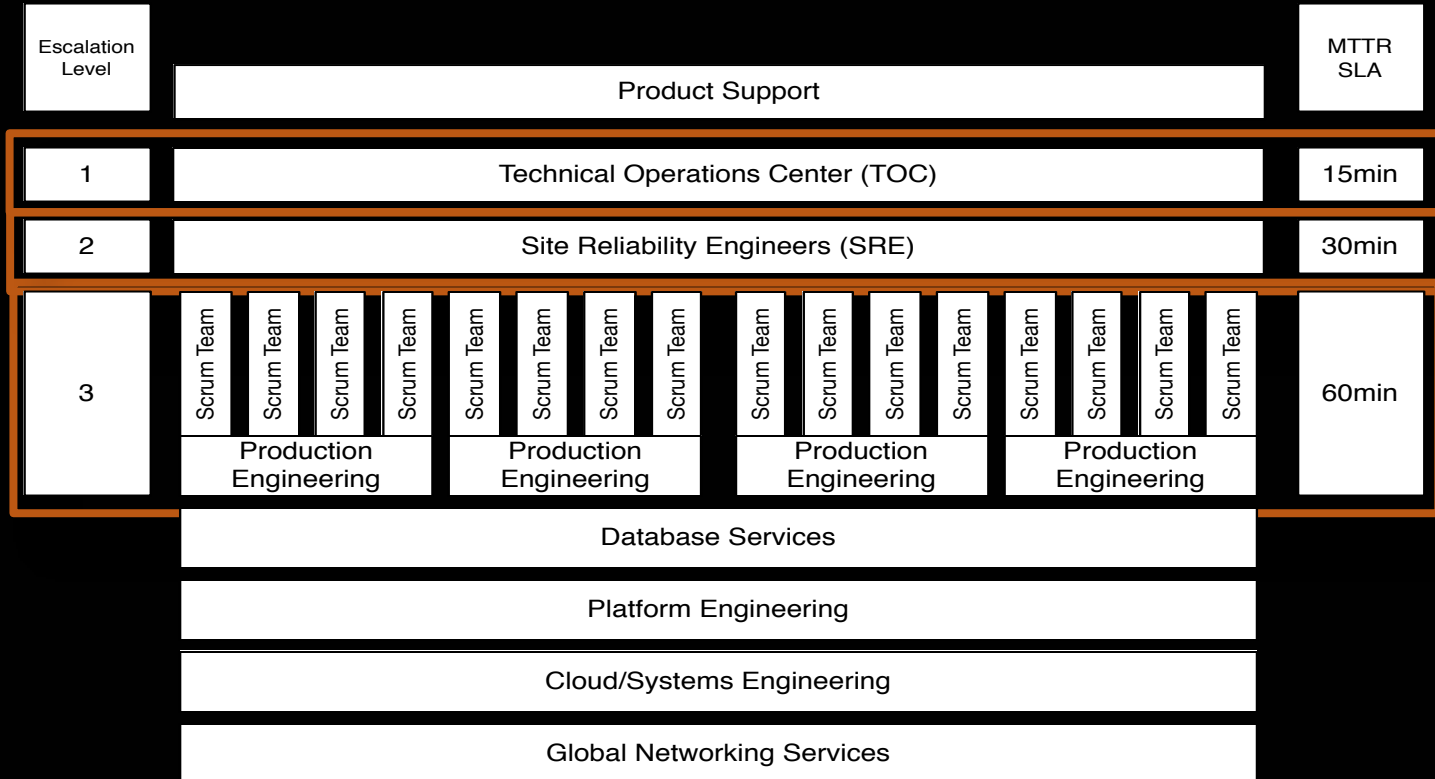
Lessons Learned

Change is hard

Lessons Learned

Empowered Expertise = Lower MTTR

Support at the Edge

- Formalized tiered support model
- Move support as close to customers as possible
- Focuses teams on projects that prevent problems

Clients and Fans

Escalation Level		MTTR SLA
	Product Support	
1	Technical Operations Center (TOC)	15min
2	Site Reliability Engineers (SRE)	30min
3	Scrum Team Scrum Team Scrum Team Scrum Team Production Engineering / Scrum Team Scrum Team Scrum Team Scrum Team Production Engineering / Scrum Team Scrum Team Scrum Team Scrum Team Production Engineering / Scrum Team Scrum Team Scrum Team Scrum Team Production Engineering	60min
	Database Services	
	Platform Engineering	
	Cloud/Systems Engineering	
	Global Networking Services	

Support at the Edge - TOC

Technical Operation
Center
(TOC)
=
EMT

Support at the Edge - SRE

Site Reliability Engineers
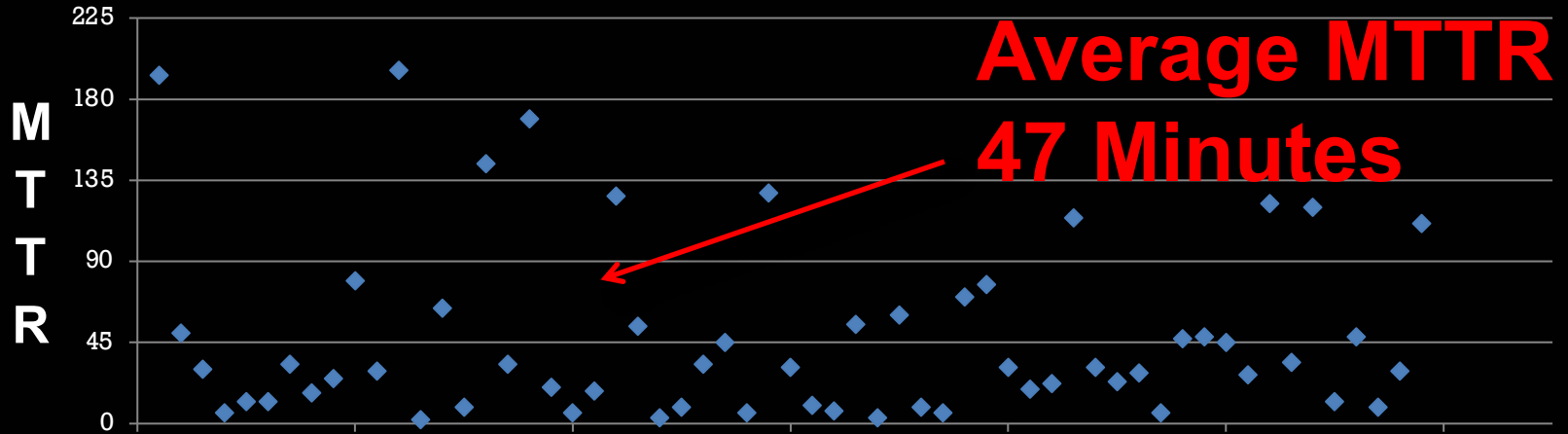(SRE)
=
Emergency Room Doctors

Support at the Edge – Production Engineering
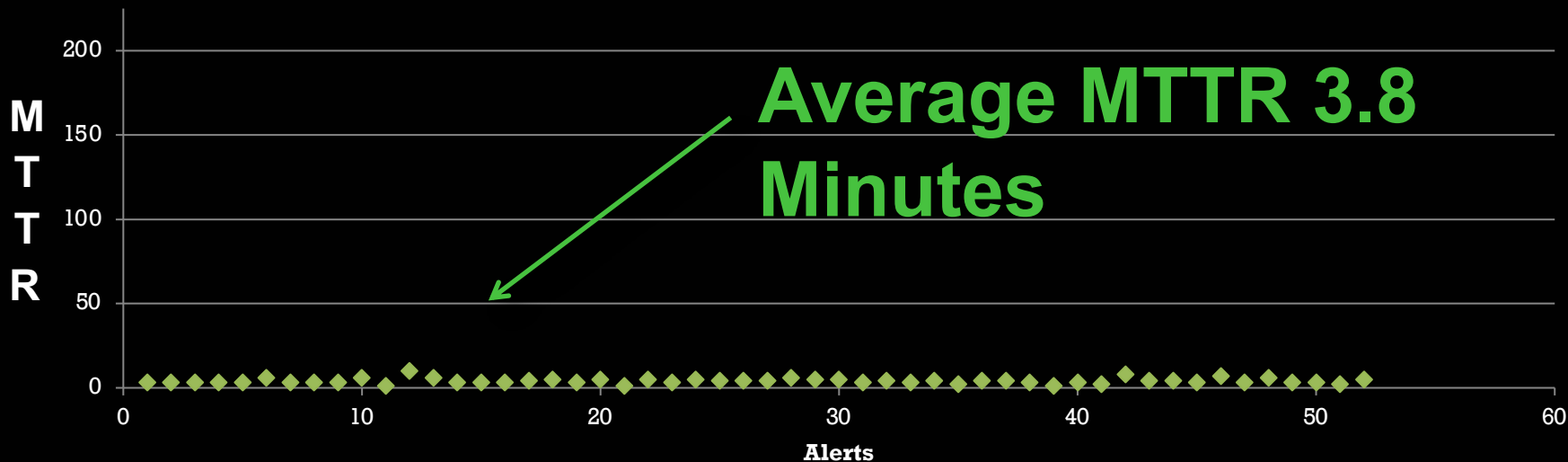
Production Engineers
=
Surgeons

Before Support at the Edge

TMOL WebOps Incidents

Average MTTR 47 Minutes

After Support at the Edge

TMOL WebOps Incidents

Average MTTR 3.8 Minutes

Lessons Learned

DevOps has nothing to do with technology

Ticketing Engine (aka The Host)

- Powers $25B in commerce

- Performance measured in microseconds

- Code first committed 1976

- VMS running on emulated VAX

Ticketing Engine (aka The Host)

Bedrock Team

- Deploys their own code
- Integrated PagerDuty for Oncall Alerts
- Leverages Cucumber/BDD for automated functional tests

Feature Statistics

Feature	Scenarios			Steps							Duration	Status
	Total	Passed	Failed	Total	Passed	Failed	Skipped	Pending	Undefined	Missing		
Verify that getting categories responds as expected	20	20	0	97	97	0	0	0	0	0	01s 561ms	passed
Service Template Endpoints For Baseline/Boilerplate features	9	9	0	33	33	0	0	0	0	0	241ms	passed
Create new events through Iris	6	6	0	48	48	0	0	0	0	0	19s 318ms	passed
Event Creation Failures	6	6	0	21	21	0	0	0	0	0	635ms	passed
Update events through Iris	3	3	0	72	72	0	0	0	0	0	15s 917ms	passed
Retrieve events from a host	1	1	0	6	6	0	0	0	0	0	02s 041ms	passed
Verify that getting host information responds as expected	4	4	0	14	14	0	0	0	0	0	052ms	passed
7	49	49	0	291	291	0	0	0	0	0	39s 768ms	Totals

Lessons Learned

There are only two states:
The system owns you
or
You own the system

Ticketmaster.com (AKA TMOL)

- Drives 40% of revenue
- Majority of system built in 2000 ModPerl
- Tribal knowledge no longer at the company

Metal to Money – No Hands

- Development team taking over svc delivery
- Push Button Deployment of the TMOL stack
- Tribal knowledge encapsulated in code

Closing Thoughts

Ego is a force field for learning

To know that you do not know is the best
To pretend you know when you do not know is a disease
-Lao-tzu