



Software
Division

Putting a Performance Stake in the Ground

Ron McClintic

rmcclint@comcast.net

Introduction

(my background)

- Choosing test tools
- Building performance lab
- Using smaller scale equipment
- Control charts applied to performance
- ASQ articles
- IFPUG contributing author
- ICSQ 2010

What is the hardest?

- Learning tools?
 - Making tools work?
 - Budget / cost?
 - Test lab different from production?
 - Making test results predictive?
 - ?
- Timely, Usable Requirements

Defining Performance

- Speed – Response time
- Speed – Completion time
- Reliability
- Accuracy
- Intuitiveness
- User friendly
- Data integrity / privacy



Defining Performance

- Security
- MTTF/MTTR
- User Efficiency
- Consistent
- Maintainability
- Total Cost Ownership
- Data Growth



Two steps

- Determine the statistic of interest
 - Speed, Maintainability, TCO
- Set the target value
 - 3 second response
 - MTTF > 6 months / MTTR < 1 hour
 - Dev + 3 yr life + database < \$4 million

Who defines it?

- Business Owner
- Users
- Customers
- Marketing
- Developer
- Network Architect
- Competition
- Government



Granularity

- Web apps are very interactive
- Different requests have different speed expectations
- Log in versus complex search
- Address lookup versus graphic
- Request for data versus complex calculation
- Asynchronous Java And XML - AJAX

Getting one answer

- Many apps have great granularity
- 80/20 rule
- How to get, and manage, a performance requirement?



Objections to overcome

- One size does not fit all
- User does not set budget
- Do not know competition's performance
- Consumer versus Business application
- Fear of commitment
- Perspective affects definition

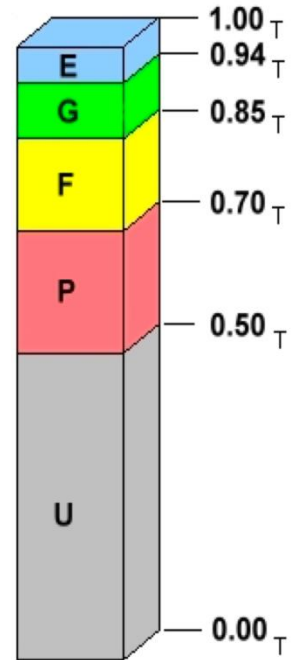
Objective scale

- Index of customer satisfaction for each user activity
- Define performance standard for each distinct action
- Satisfying = S 5 second
- Tolerating $\leq 4S$ ≤ 20 seconds
- Frustrating $>4S$ >20 seconds

Apdex.org

0 – 1 index (0 = Frustrated,
1 = Satisfied)

$$\frac{\text{satisfied count} + \text{tolerating count}/2}{\text{sample count}}$$



Ratings range from unacceptable to excellent

$$(87 + 10/2)/100 = .92$$

Transaction Name	Criteria		Results					apdex _T
	satisfied	tolerating	attempted	satisfied	tolerating	frustrate	fail	
Int_100_MediumGPS_04_TelematicsMapping	6.0	24.0	589	0	21	501	67	0.02
Int_100_MediumGPS_03_MyDashboard	6.0	24.0	100	0	6	90	4	0.03
Int_120_MediumGPS_03_MyDashboard	6.0	24.0	120	0	17	95	8	0.07
Int_120_MediumGPS_02_Login	6.0	24.0	120	5	16	99	0	0.11
Int_120_MediumGPS_04_TelematicsMapping	6.0	24.0	793	1	189	557	46	0.12
Int_100_MediumGPS_06_SelectCustom	6.0	24.0	522	429	93	0	0	0.91
Int_80_MediumGPS_09_GetAllAddress	6.0	24.0	204	173	29	1	1	0.92
Int_20_MediumGPS_06_SelectCustom	6.0	24.0	131	121	3	0	7	0.94
Int_140_MediumGPS_10_ClearMap	6.0	24.0	1201	1068	133	0	0	0.94
Int_80_MediumGPS_10_ClearMap	6.0	24.0	588	534	48	3	3	0.95
Int_80_MediumGPS_11_FleetHome	6.0	24.0	80	73	6	1	0	0.95
Int_60_MediumGPS_09_GetAllAddress	6.0	24.0	150	137	13	0	0	0.96

Using the results

- Break down transactions to lowest level of granularity
- Monitor changes in performance from release to release
- The index allows for randomness of web based apps

Conclusion

- Some things are fast, some are slow
- Satisfied, Tolerated, Frustrated makes sense
- Universal standards are hard to define
- Discrete specs for discrete steps
- Inherently contains ranges
- Slice and dice, with fudge factors!



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Thank You!

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McClintic Services, Inc.