

Stop Using Your Gut: How to Efficiently Measure ROI

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GAME DEVELOPERS CONFERENCE

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Introduction

- Create tools to improve processes
- Unguided decisions are dangerous
 - May invest too much time
 - Nobody uses tool

Goals:

- Accurately measure ROI
- Develop process to ensure high ROI

Using your Gut – Hit or Miss

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Using your Gut – Hit or Miss

- Hit – B4Bug
 - High usage
 - ROI? Don't know.

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 - Low ROI

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 - Low ROI
- Insight – We can develop a process better than this

Process

- Software engineers shadow Users
 - Identify repetitive patterns
- Encapsulate patterns
- Measure ROI

Shadowing

- Why use software engineers?
- Why shadow users?
- Insight – Shadowing users is more cost-effective than training them to be engineers

Shadowed Users on



- Identified lowest hanging fruit
 - Editing Screenshots
 - File Attachments
- Insight - Ensure you shadow, don't interview

Edit Screenshots – MASS EFFECT 3



Edit Screenshots –



Attach Screenshots and Savegames



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Edit Screenshots – **MASS EFFECT 3**

Attach Screenshots and Savegames



View **Edit**

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Measuring accurately

- Use telemetry
 - Ongoing, accurate, and reliable
 - Easy to visualize
- Benefits of measuring
 - Confident in results and decisions
 - Predictive

So what to measure?

- Time Returned on Investment(ROI)
- Task Complexity Reduction (TCR)

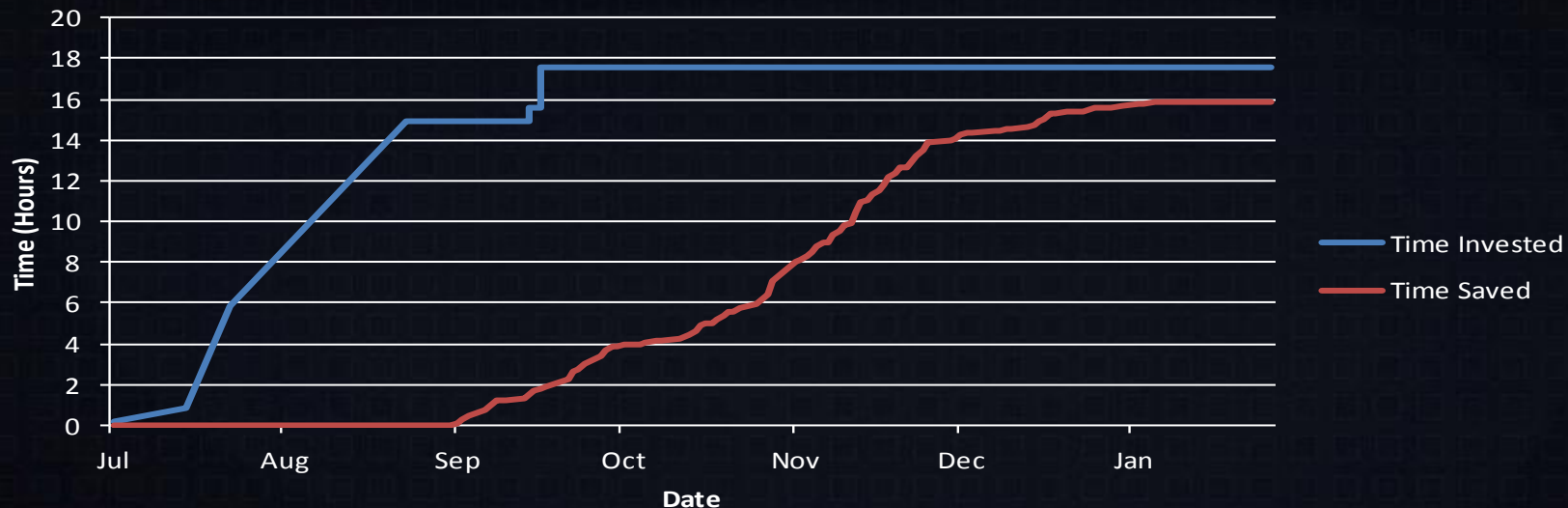
Time ROI

- Time saved VS. time invested
 - Shows net gain or loss
- Changes over time

Task Complexity Reduction (TCR)

- Cognitive steps before VS. after
- Measures change in cognitive workload
 - Shorter training times
 - Easier to context switch
 - Perform tasks in parallel

Edit Screenshots – ROI



Edit Screenshots – TCR

- Cognitive Steps Before – 10
- Cognitive Steps After – 5
- TCR of 50%!
- 5200 steps saved to date

Edit Screenshots - Insights

- Time ROI is slow to aggregate
 - Ensure enough time for positive ROI
 - Bad marketing?
- Other metrics besides ROI
 - TCR
 - User Perception – Future Work

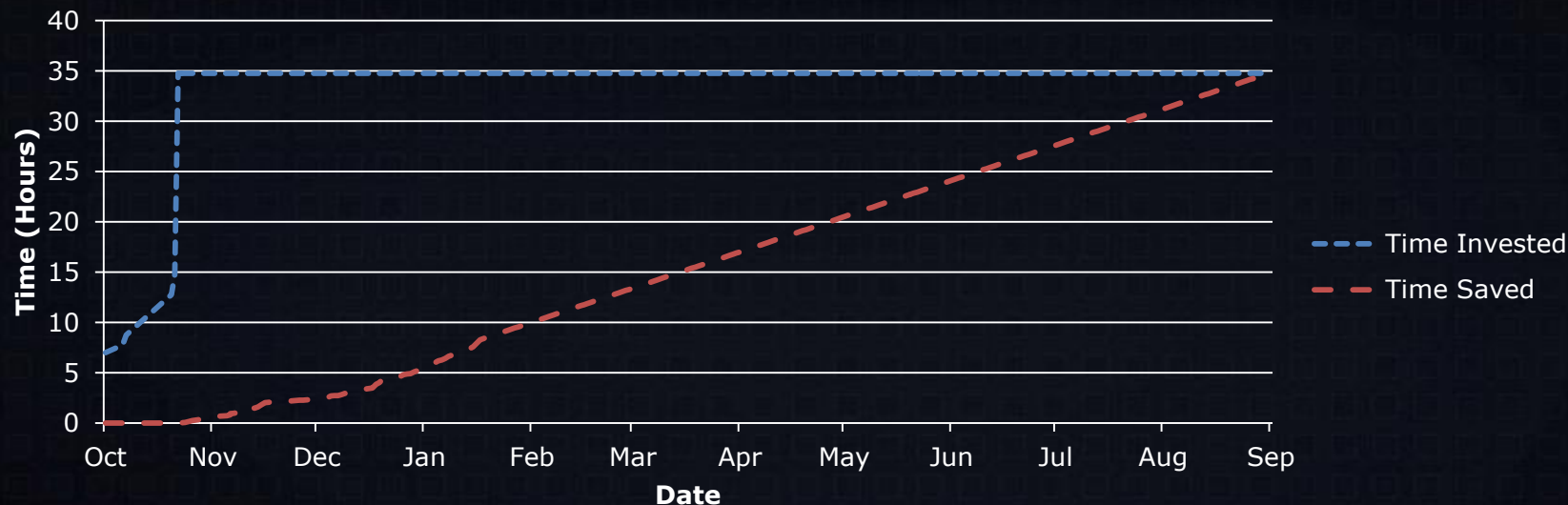
Attach Files –

- Attach files to bugs
- Could attach files via internal tool

Estimating ROI

- Attach files similar to edit screen shots encapsulation
 - Less anticipated use
 - Greater estimated investment
- Insight - Edit screenshot telemetry can estimate the ROI of attaching files

Attach Files – Estimated ROI



Attach Files – Results

- Estimated a smaller ROI
- TCR was smaller (25%)
- Dropped further development

Future Work

- Define specific process for shadowing
- Refine what a cognitive step is
 - Eg., Mouse click VS. navigate to file on disk
- Measure user perception

Key Insights

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Conclusion

- Shadowing users and measuring ROI helps make more informed decisions
- Allows concrete data to be used in those decisions