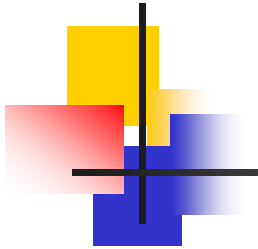


Saved by Facts!

”What Gets Measured, Gets Done”

Pierre Almén, ImproveIT
Fact-Based IT Improvements
pierrea@coolmail.se
ISMA6 Sep 2011

”Measuring programming progress by lines of code is like measuring aircraft building progress by weight”

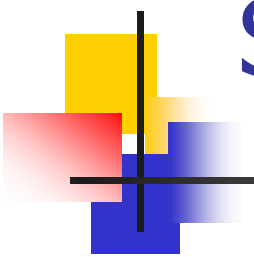
”Measuring programming progress by lines of code is like measuring aircraft building progress by weight”

Bill Gates

Goal with this presentation

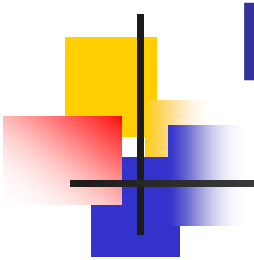
You shall have got knowledge

- That there are different purposes with a measurement program
- About different metrics within software development & maintenance
- That facts can save you



Saved by Facts!

- Background
- Fact Based Managing
- Client Case

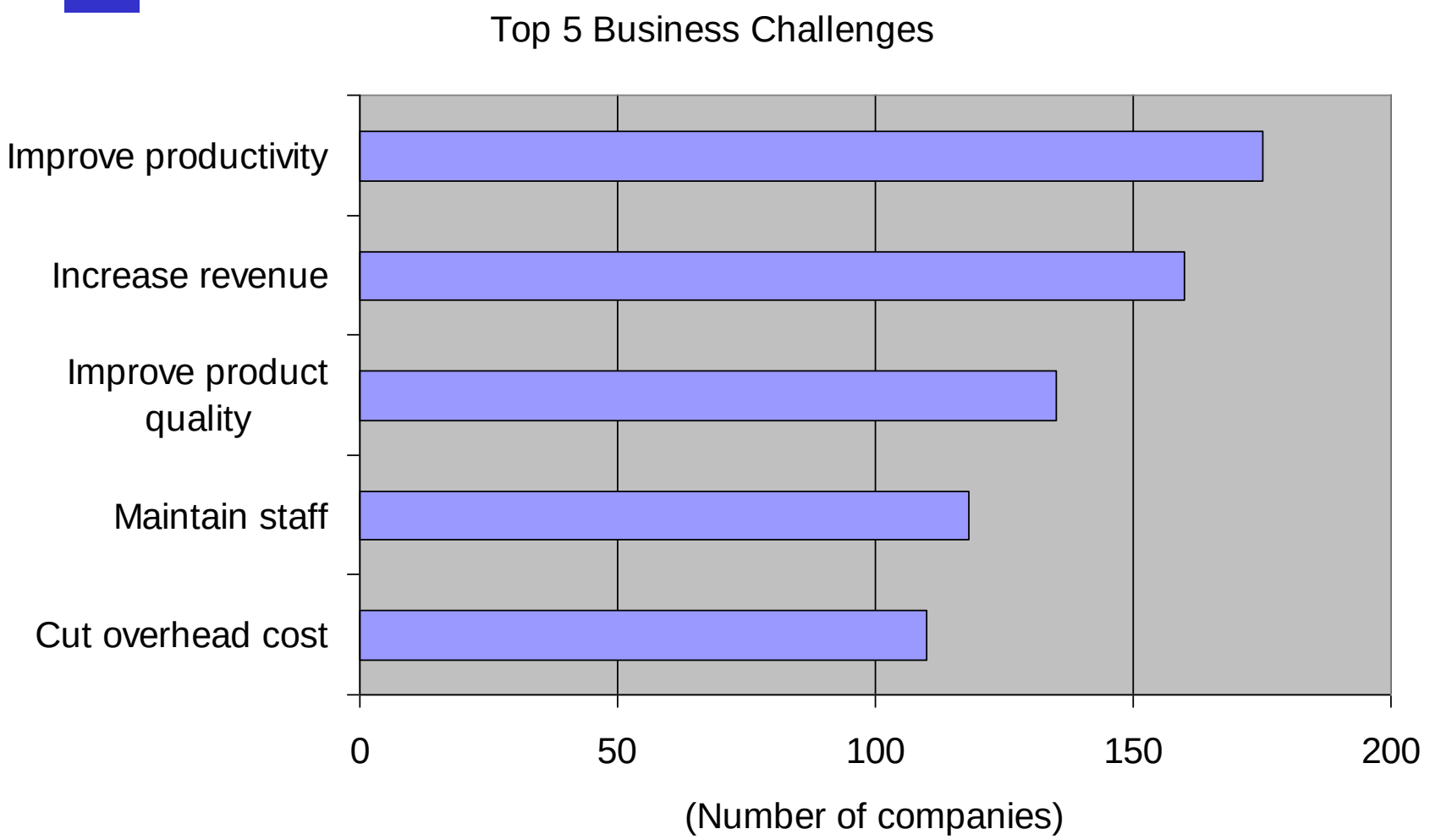


Background – Who am I?

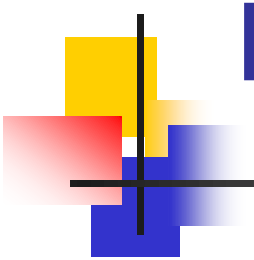
Pierre Almén - ImproveIT

- CSMS Gold Level – Certified Software Measurement Specialist, first in Northern Europe 2006
- CFPS – Certified Function Points Specialist, first in Northern Europe 1994
- Started the network Software Metrics at the Swedish Computer Association 2006
- Started a Function Points network in Sweden 1992
- Member of the MRC committee since 2006
- Performance Improvement and Outsourcing studies of SDM at Nordic companies/organisations since 1998
- Developer / Project Leader / SDM Manager / IT consultant at IBM 1974-1998

Background – CIO Challenges



Source: IDC Nordic CIO Survey 2009 (n=600)



Background – How are we doing?

Software Development and Maintenance often over 50% of the IT budget

Standish Group CHAOS Report 2009

- Successful projects 32%
  - Delivered on time, on budget, with required features and functions
- Challenged projects 44%
  - Are late, over budget, and/or with less than the required features and functions
- Failed projects 24%
  - Cancelled prior to completion or delivered and never used

The share of successful projects have gone down and it has not been worser than now

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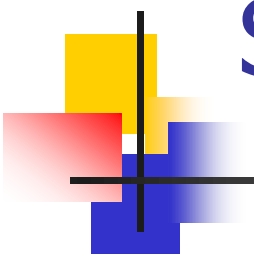

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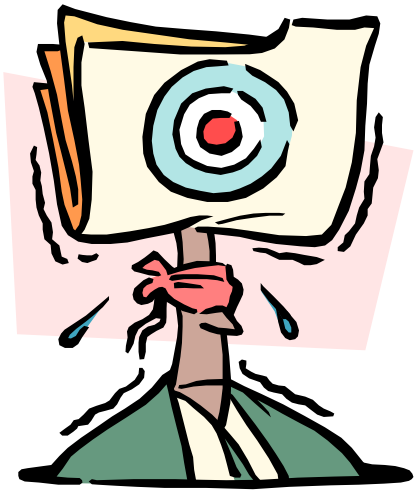
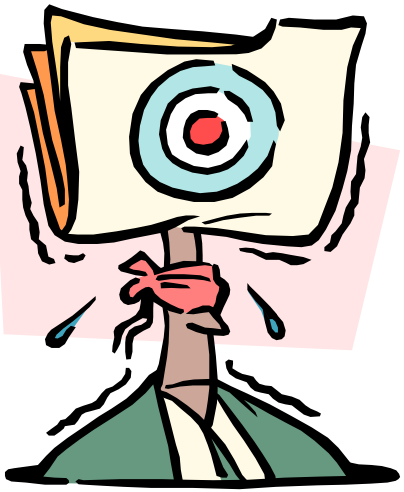


”I’m making a decision! Stop confusing me with facts!

10

Fact Based Managing



”I’m making a decision! Stop confusing me with facts!

”Without metrics, you’re just another person with a different opinion”

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Fact Based Managing

"You can't **manage** what you can't **control**, and you can't control what you don't **measure"** – Tom de Marco

Management & Control

- Improve productivity
- Decrease costs
- Increase quality
- Increase customer satisfaction
- Increase speed-to-market
- Resource / skills planning & prioritization
- Portfolio management
- Outsourced activities

For Estimation

- Work effort in new projects/tasks
- Expected quality levels
- Maintenance cost/effort predictions

For Communication

- Internal & external communication
- Increase awareness & credibility of performance

For Decision Making

- Selection of methods & tools
- "Go"/"No Go" for new projects
- Outsourcing – yes/no/partial?
- In-house vs buy

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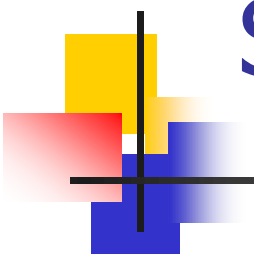
Fact Based Managing

Companies that measure:		Companies that don't:	
On-time projects:	75%	On-time projects:	45%
Late projects:	20%	Late projects:	40%
Cancelled projects:	5%	Cancelled projects:	15%
Defect removal:	>95%	Defect removal:	Unknown
Cost estimates:	Accurate	Cost estimates:	Optimistic
User Satisfaction:	High	User Satisfaction:	Low
Software status	High	Software status	Low
Staff morale:	High	Staff morale:	Low

Source Capers Jones IFPUG Conference



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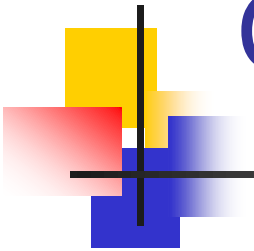
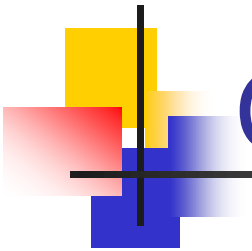


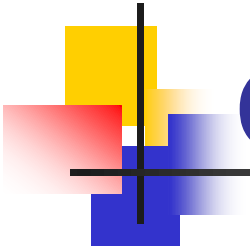
Client Case - Background

- Nordic outsourcing company developing an application package for a Nordic organization
- Contract written without using any kind of benchmarking data
- Delivered software should be of very high quality level
- Quality in line with market levels?



Client Case - Assumptions

- A limited budget for this assignment
- Need the result ASAP
- A ballpark figure will be good enough
- Project was in coding/testing phase (waterfall approach)
- Quality level KPIs based on IFPUG Function Points should be used
- Fast counted Function Points could be used
- Count Function Points for one application within the application package



Client Case – Scope

- Application KPIs / metrics
  - Predicted Application Quality (# of monthly discovered defects in production)
  - Distribution of Defects (market level)
  - Predicted # of Resources needed to maintain the application package
- Project KPIs / metrics
  - Project productivity (FPs per person month)
  - Project Delivery Capacity – Time-to-Market (FPs per project calendar day)
  - Predicted # of defects in system and acceptance test

Extended scope was agreed

Client Case – FP accuracy decisions

- Count only Transaction functions without determine the complexity
- Assume the same complexity for all Transaction functions
- Use Rule of Thumb to estimate the Data functions share
- Counting done by walk through of all screens etc

Client Case – FP result one appl.

When counting one of the applications within the packet, we estimated the package to just over **4900 FPs**

- All transactions have medium complexity + 5% based on personal experience
- +10% for missing functions or functions that will be added to the spec's
- Data functions share estimated to 30%
- The application share of the whole package estimated by Project Manager to be 13%

Client Case – FP result one appl.

Using same counting data, we used ratios from a Cologne University study presented by Dr Manfred Bundschuh at IFPUG conference 2006

- Ratios are based on the Transaction functions External Input (EI) and External Output (EO)
- +10% for missing functions or functions that will be added to the spec's
- The application share estimated to be 13%
- Estimated size was **4160-4530** FPs

Client Case – FP result one appl.

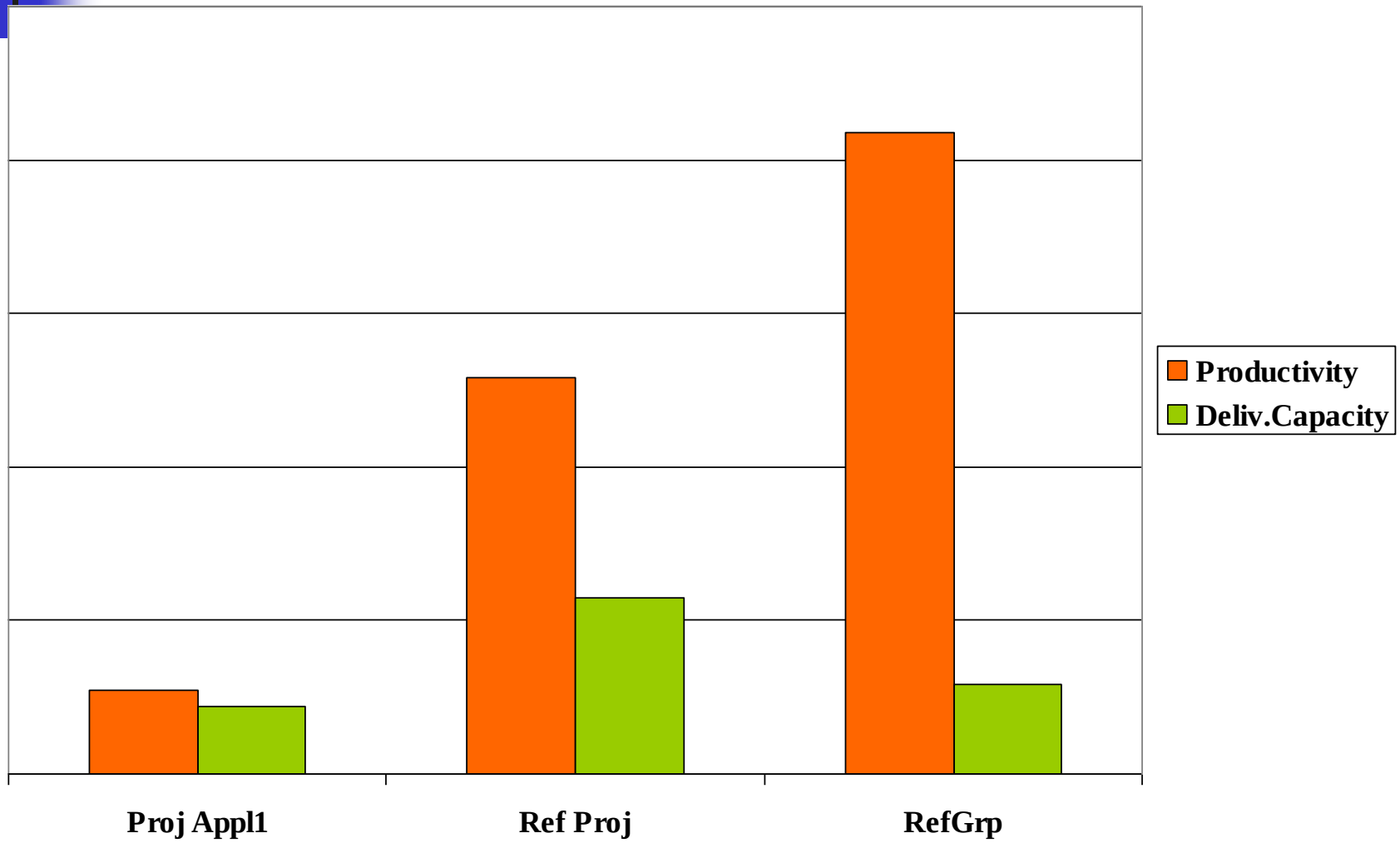
Backfiring was also tested:

- The whole package Lines of Code was counted
- Three different conversation tables used
- Estimated size was **12700-24000** FPs
- Indicates that the whole package *COULD* be more than 4900 FPs

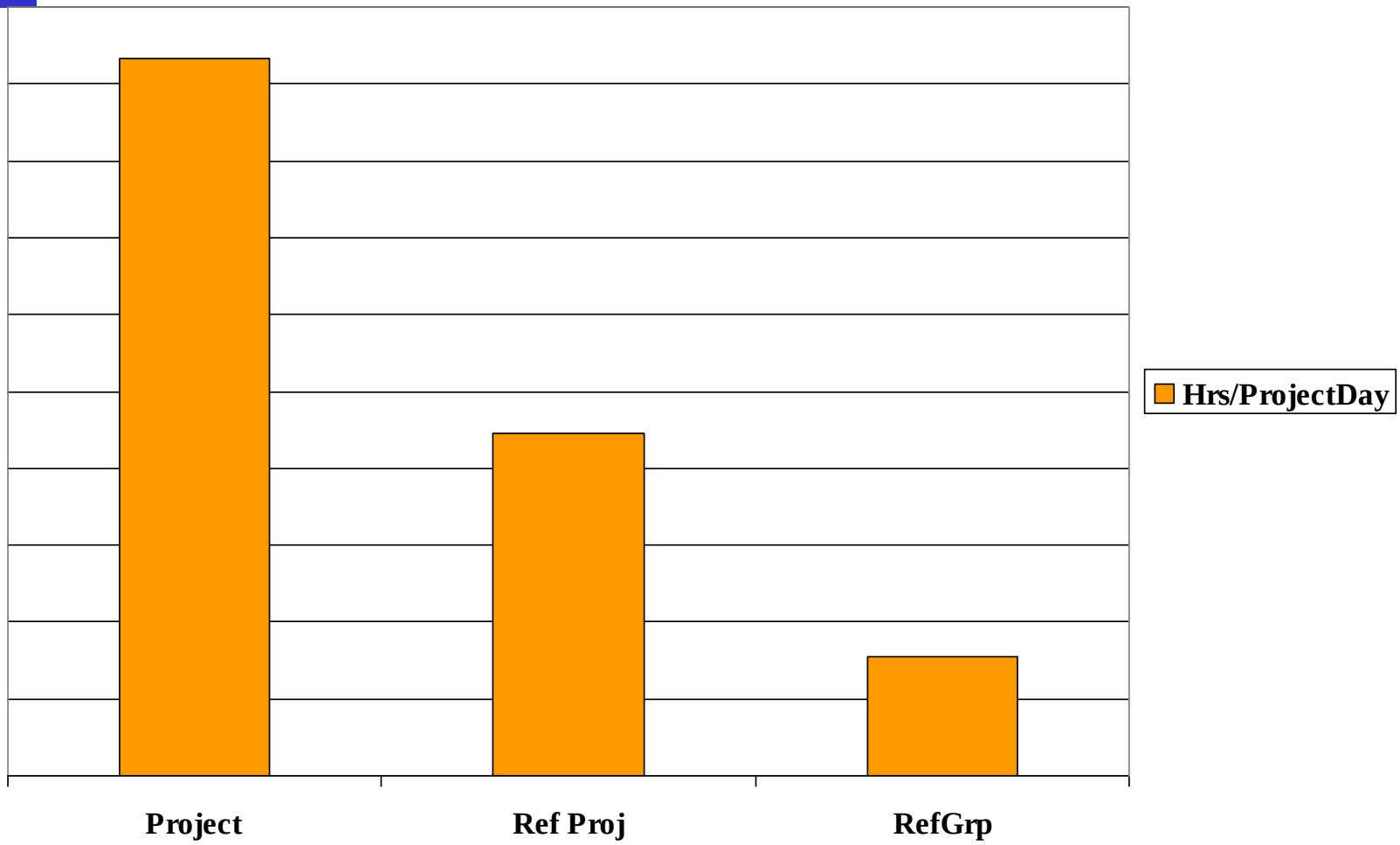
Client Case – Calculate KPIs etc

- All agreed KPIs were calculated
- Reference data was used to calculate market KPIs
  - Reference data for similar projects (environment, size etc)
  - Reference data for similar applications (environment, size etc)
  - Best Practice Reference Group

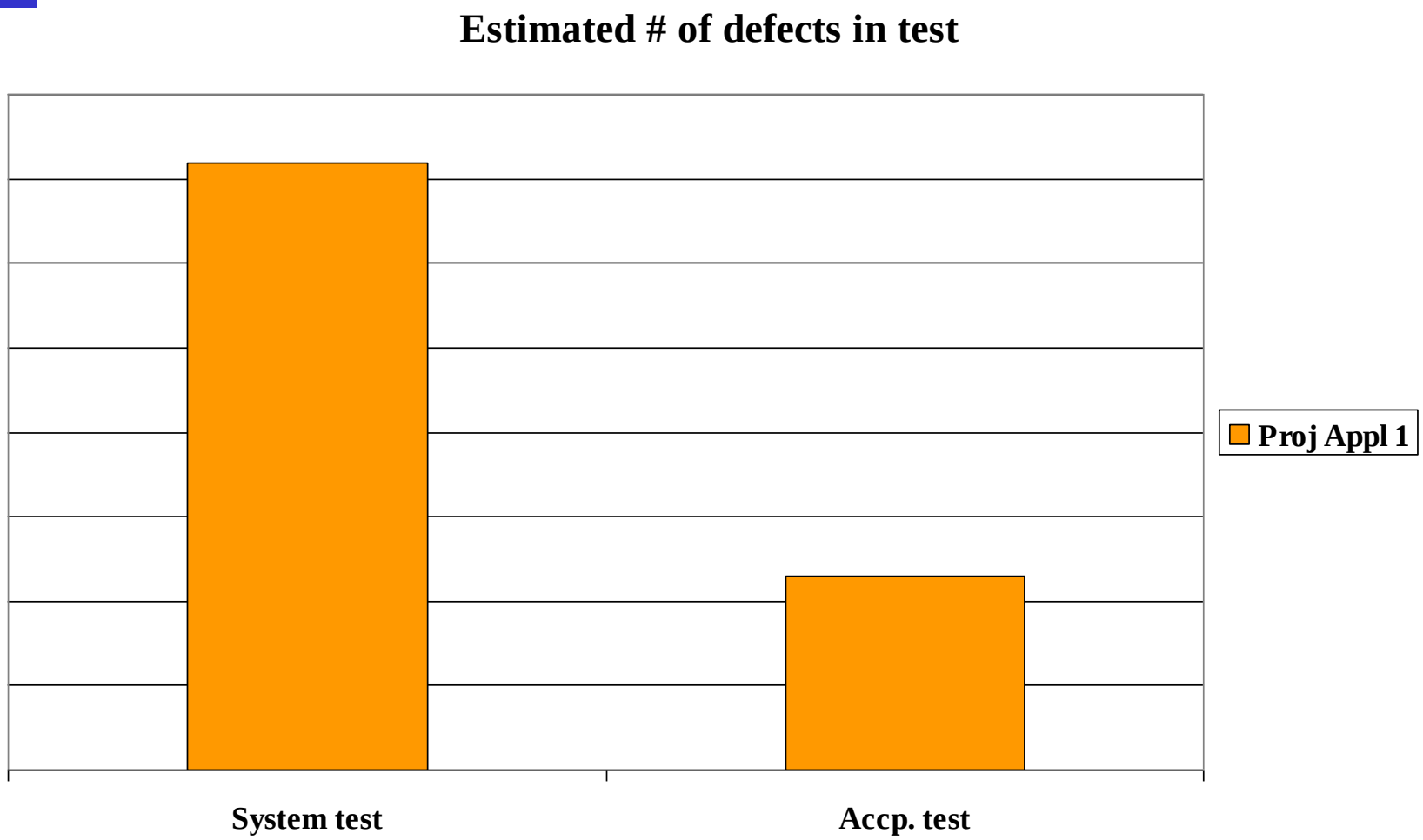
Client Case – Project KPIs



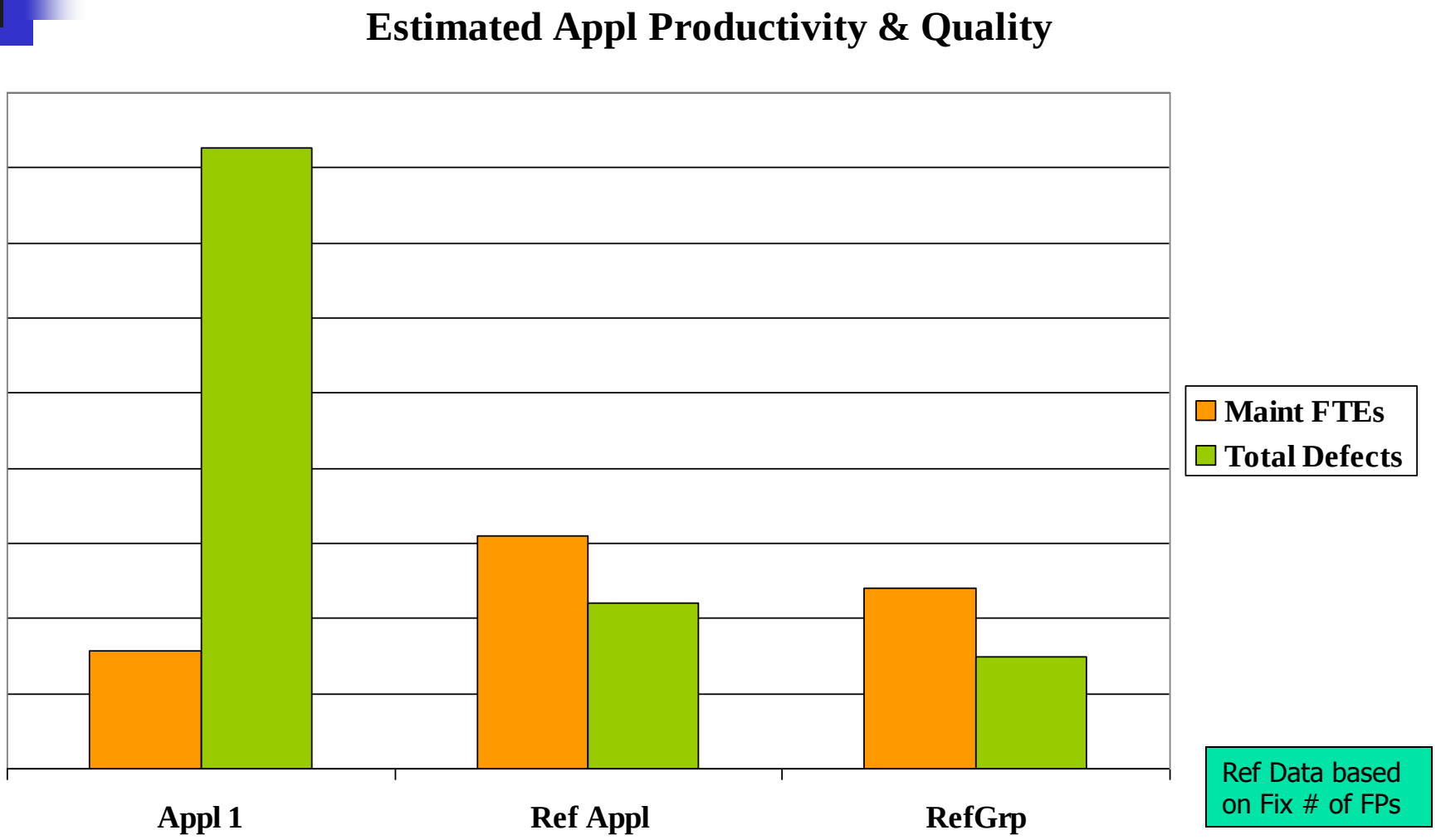
Client Case – Project KPIs



Client Case – Project KPIs



Client Case – Application KPIs



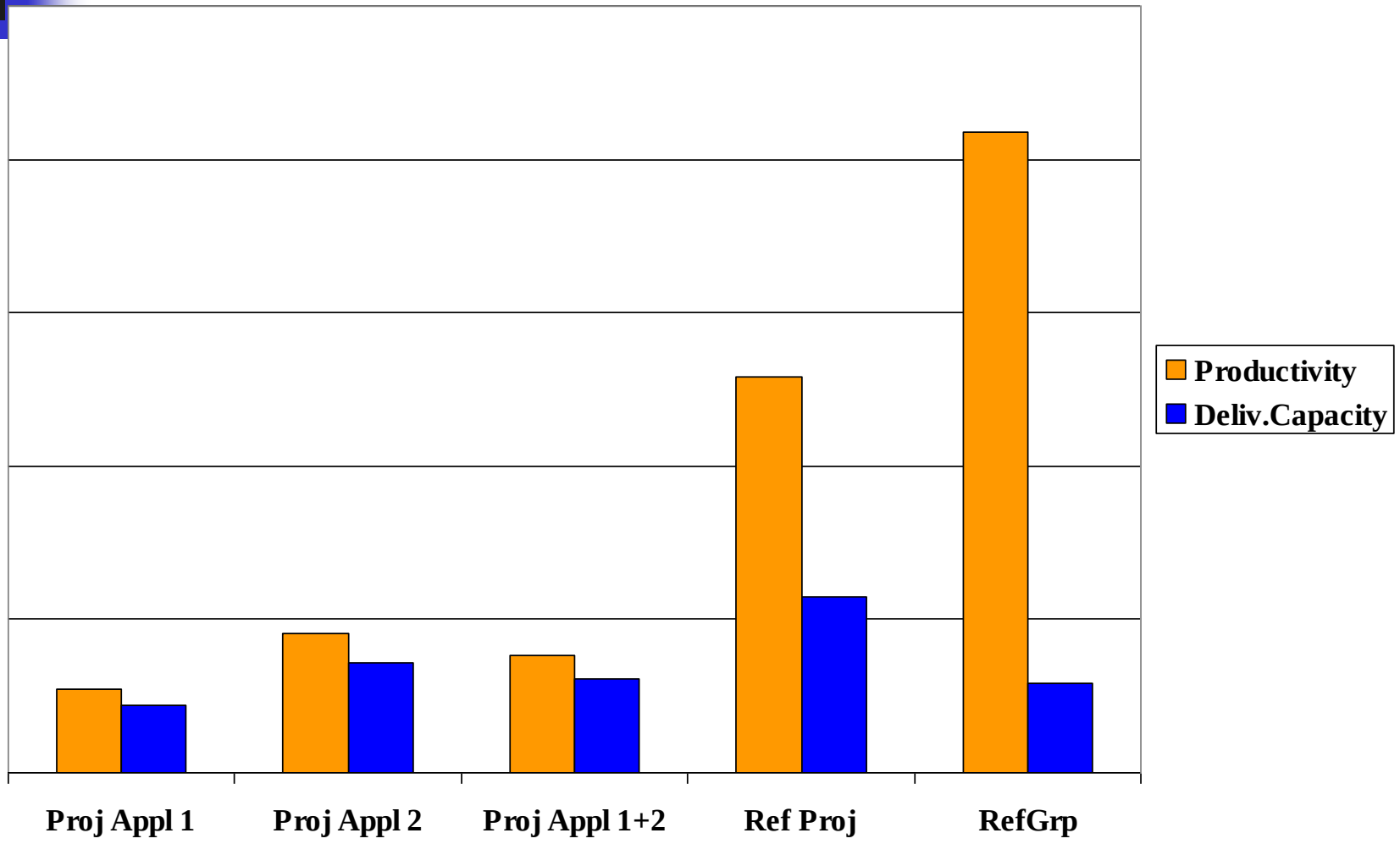
Client Case – Raising FP accuracy

- Client satisfied that facts could give them these indications with very little resources spent
- Client now wanted to raise accuracy by including FP count of one more application in the package
- Use same counting process as for the first application
  - Count only Transaction functions without determine the complexity
  - Assume the same complexity for all Transaction Functions
  - Use Rule of Thumb to estimate the Data functions share
  - Counting done by walk through of all screens etc

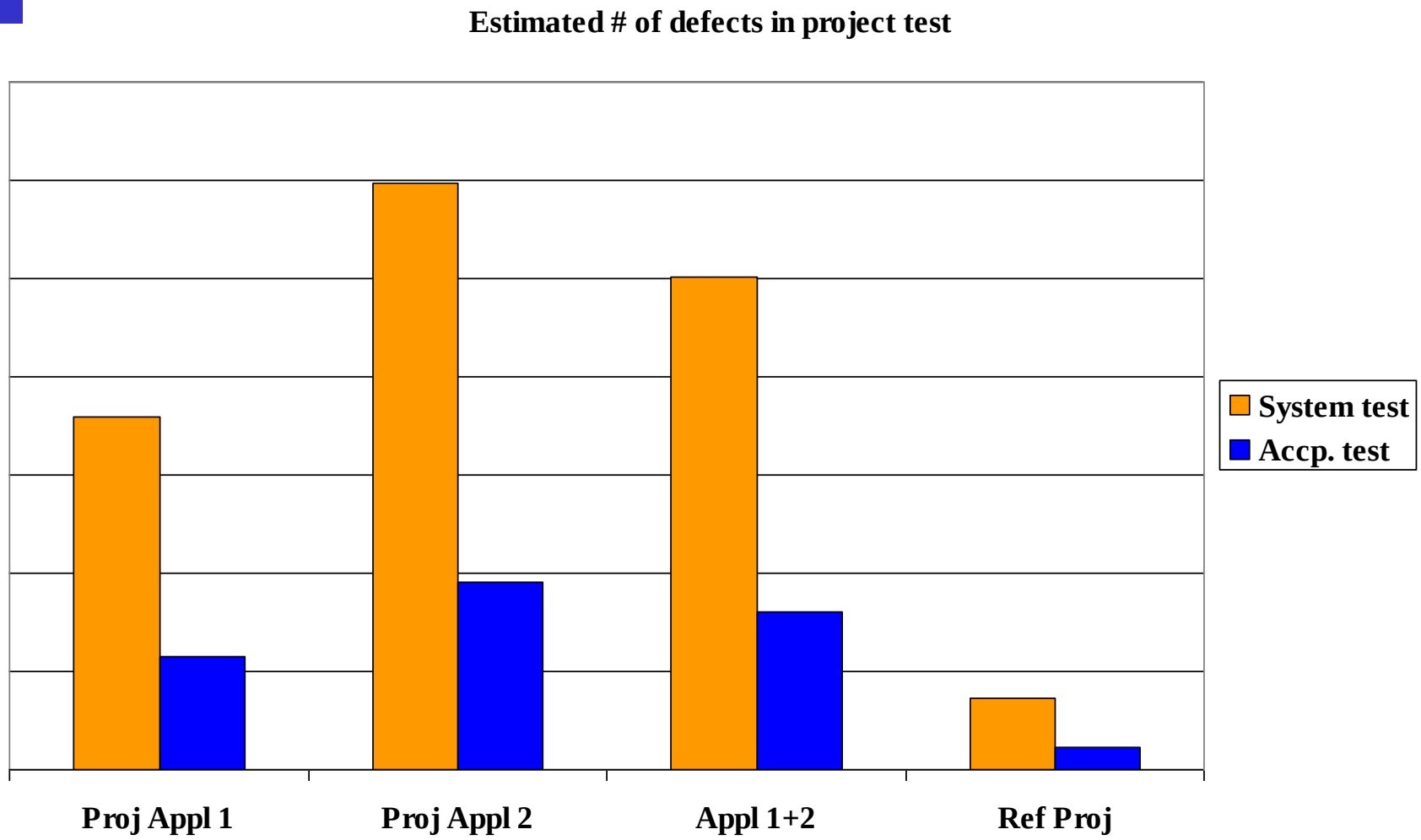
Client Case – FP result two appl's.

- When counting second of the applications within the packet, we estimated the package to just under **8200 FPs**
- Same FP counting and summarization assumptions used
- The second application share of the whole package estimated by Project Manager to be 20%
- Combining the count of the first and the second application, we estimated the total functional size of the package to **6900 FPs**

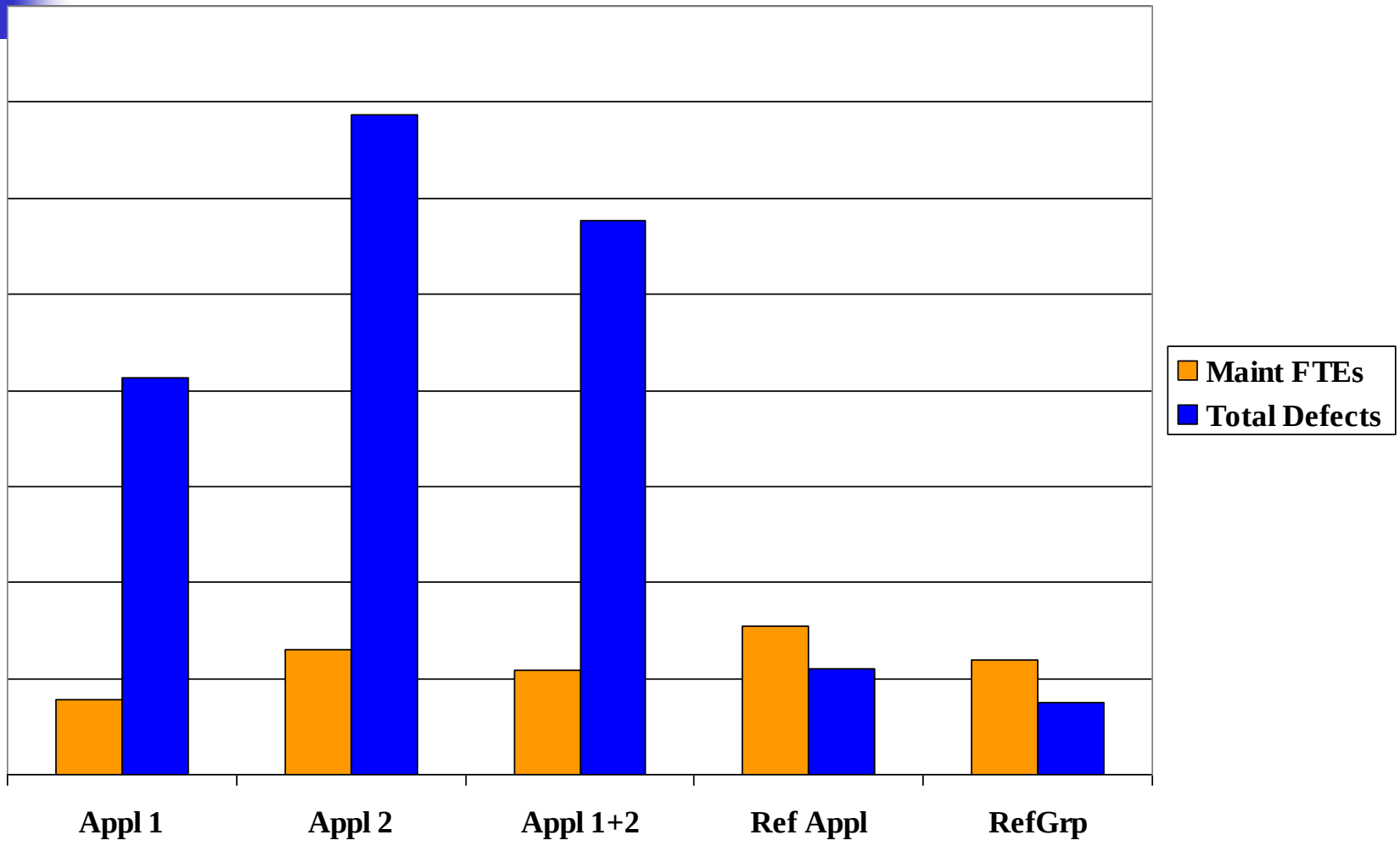
Client Case – Project KPIs



Client Case – Project KPIs



Client Case – Project KPIs



Client Case - Summary

The Outsourcing company

- could show their client that based on facts (market data) defects will exist in the application package after delivery (and they could show estimated # of defects based on severity levels)
- could estimate the resources needed to maintain the application package
- now knows a way to estimate in early development stages
- now knows that facts can help them write better contracts

?

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