



Doing Business with Function Points: Function Point-Based Business Models

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Agenda

- Introduction
- Business Reasons for Functional Sizing
- Function Point Analysis (FPA)
- FP-based Business Models
- Summary

Introduction

Goals

- To answer the following questions...
 - Why do so many Brazilian organizations invest in FP implementation?
 - What secret has made FPA extensively used in Brazil?
 - What business reasons have made Brazil one of the biggest FP users?
- ... by addressing the following topics:
 - Business reasons for functional sizing with IFPUG FPs
 - FP-based business models

Business Reasons for Functional Sizing

Who Controls Price

- All other factors assumed constant, price will be controlled by the:
 - Vendor
 - Process-oriented pricing - “This will cost more because I will have to hire an expert to do it”
 - Client
 - Results-oriented pricing - “This will cost more because of these added features”

Business Reasons for Functional Sizing

Clients Like to Be in Control

- Clients like to control price... (who doesn't?)
 - Process orientation
 - “Is this guy really an expert? How much does he cost?”
 - Results orientation
 - “This extra feature provides great value!”

Business Reasons for Functional Sizing

Clients Like to Be in Control

- Why does this change cost so much?
 - Process orientation
 - “Because I will have to spend 2,000 person-hours on it”
 - Results orientation
 - “Because I will have to change 200 function points”

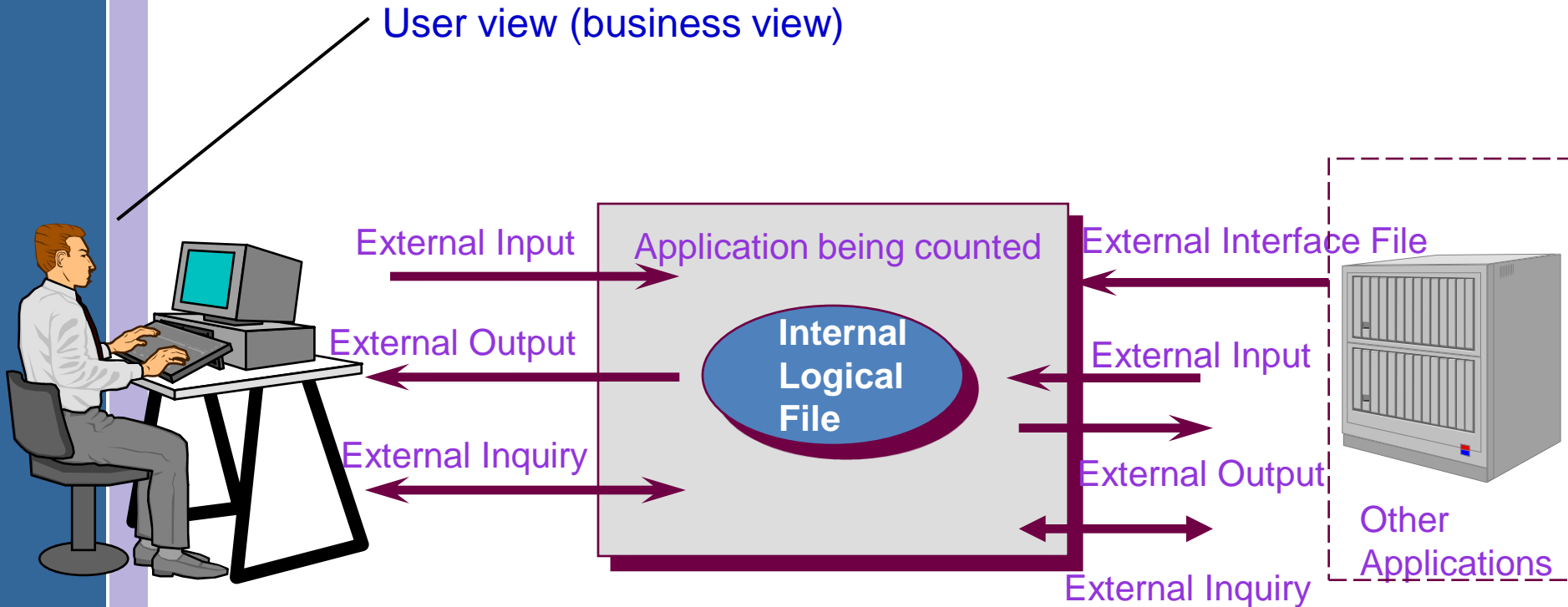
Business Reasons for Functional Sizing

Clients Get to Be in Control

- Functional sizing is results-oriented
- Functional sizing can be understood and verified by the client
- Functional size measures can be standardized
- Functional size measures can be benchmarked
- The leading functional size measure is IFPUG
Function Points

Function Point Analysis (FPA)

General Idea



FPA provides an external, business-oriented, technology-independent perspective

Function Point Analysis (FPA)

Models & Function Points

- Explanatory Models
 - Used to understand behavior
 - Mostly used by economists, researchers & social scientists
 - Example: modeling productivity as a function of several variables (e.g., COCOMO II effort multipliers) to guide process improvement initiatives

Function Point Analysis (FPA)

Models & Function Points

- Predictive Models
 - Used to predict future behavior
 - Used by estimators
 - Example: modeling effort as a function of size & productivity to obtain estimates

Function Point Analysis (FPA)

Models & Function Points

- Prescriptive Models
 - Used to regulate relationships
 - Used in business agreements
 - Example: Establishing fixed productivity values for software development pricing; setting prices based on the value of a function point
 - These are not estimation models!

FP-based Business Models

Business Models

- Business Models

In theory and practice the term business model is used for a broad range of informal and formal descriptions to represent core aspects of a business, including purpose, offerings, strategies, infrastructure, organizational structures, trading practices, and operational processes and policies.

Source: Wikipedia

FP-based Business Models

Estimation Models

- Basic
 - Use FPs and a simple linear model to estimate effort
- Parametric
 - Use FPs as input to parametric models to estimate effort & schedule
 - COCOMO II, SEER, SLiM, etc.
- Other
 - Any method that uses size in FPs as input to estimation

FP-based Business Models

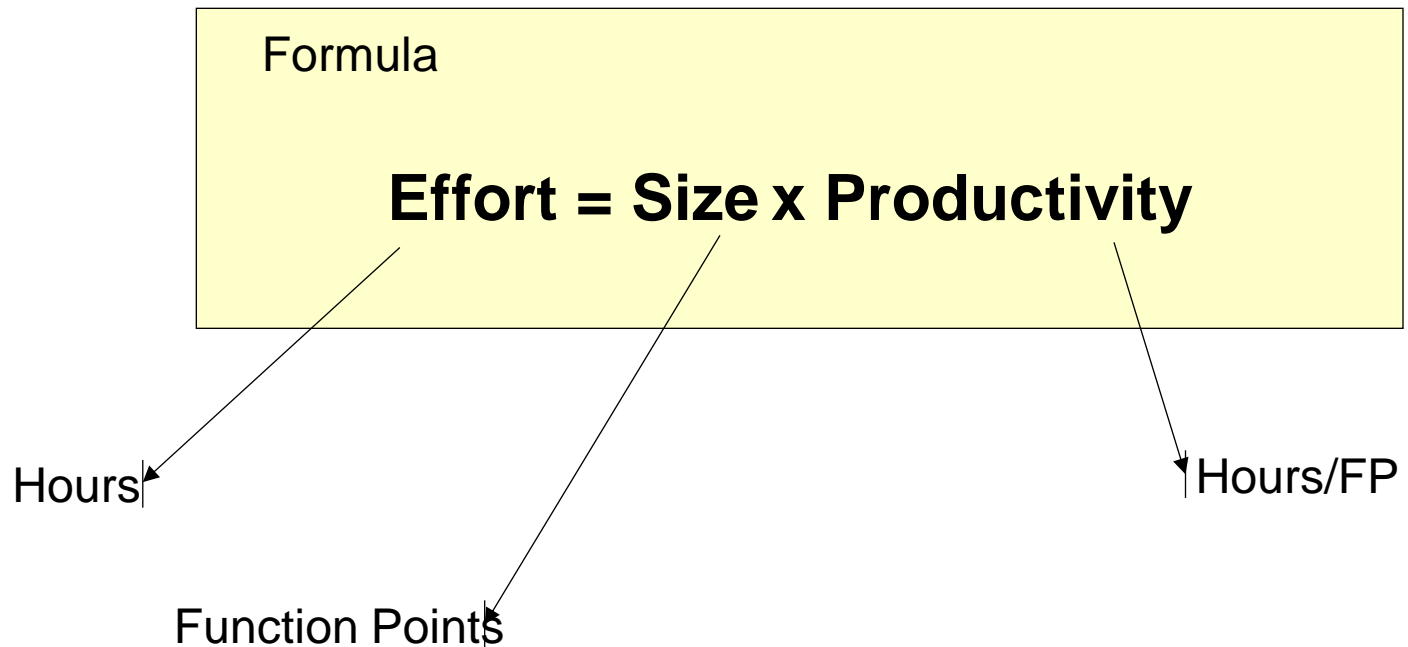
Estimation Models

- Estimation models are predictive models typically used in
 - Budgets
 - RFPs
 - Pricing model calibration

FP-based Business Models

Estimation Models

- Example: Basic



FP-based Business Models

Pricing Models

- Productivity-based model
 - **Productivity** measures the effort to develop a function point.

Will vary with project characteristics:

- Project size
- Team experience
- Team capability
- Platform difficulty
- Application complexity
- etc.



FP-based Business Models

Pricing Models

- Productivity-based model
 - **Productivity** figures typically include all lifecycle phases
 - Typical **productivity** values: 5, 10, 15, 20 H/FP (hours per FP)

FP-based Business Models

Pricing Models

- Productivity-based model
 - Productivity values are typically established per project type based on historical data
 - Project types may be based on development platform
 - Productivity values may be client-defined or be part of a client-vendor agreement
 - Productivity values may be part of an RFP (as requirements)

FP-based Business Models

Pricing Models

- Productivity-based model
 - Pricing
 - Effort will be computed as
 - $\text{Size (FP)} * \text{Productivity (H/FP)} = \text{Effort (H)}$
 - Price will be computed as
 - $\text{Effort (H)} * \text{Hourly Rate (\$)}$
 - Applies to both new development & enhancement projects

FP-based Business Models

Pricing Models

- Price per Function Point model
 - A specific price per function point is established for each project type
 - Price is computed as
 - $\text{Size (FP)} * \text{Unit FP Price (\$/FP)}$
 - For new development & enhancement projects

FP-based Business Models

Pricing Models

- **Baseline-based model**
 - A specific price per function point is established for an installed application base
 - A fixed monthly fee is charged for a service set (e.g., application maintenance/support)
 - Price is periodically updated with baseline growth
 - A Service Level Agreement handles details
 - Typically used for maintenance & support

FP-based Business Models

Pricing Models

- Defect-based model
 - A price reduction (penalty) is associated with a defect threshold
 - The threshold is typically based on a defect density measure (e.g., defects per FP)
 - Typically used in contract penalties

FP-based Business Models

Project Phases

- Dealing with project phases
 - Not all organizations contract all project phases
 - Effort may be broken down by project phase
 - Phase percentages should be based on historical data

FP-based Business Models

Benefits & Challenges

- Benefits
 - Improves current practice (better than before)
 - Drives productivity up
 - Transparent
 - Objective
 - Good for any technology/process

FP-based Business Models

Benefits & Challenges

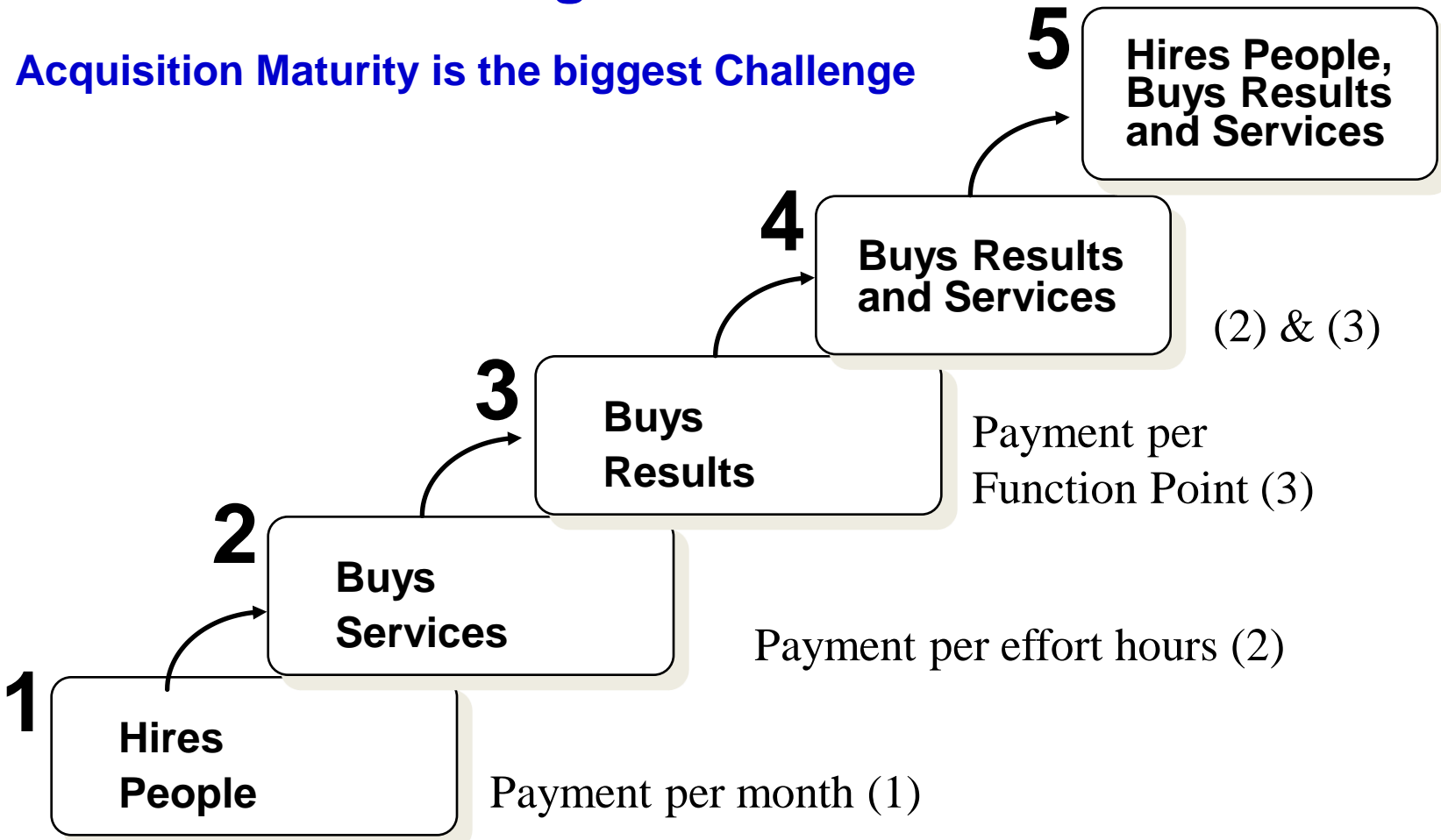
- Challenges

- Initial productivity determination (especially if no data is available)
- Non-functional items (FPs not applicable)
- Requirement interpretation may vary (fix poor requirements)
- Counting rules interpretation (CFPS certification helps)
- Keeping a win-win attitude (you can't always win!)

FP-based Business Models

Benefits & Challenges

Acquisition Maturity is the biggest Challenge



Note – cumulative levels

Summary

Things to Remember

- Business reasons for using FP-based models
 - Clients want to be in control
 - Results-oriented pricing puts client in control
 - FP-based pricing is results-oriented
- Reasons for success
 - Client in control
 - Potential productivity improvement
 - Potential cost reduction
 - Transparency
 - Objectivity
 - Standard-driven

Thank You!



A PSM Transition Organization

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