Function Point-Based Business Models

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Agenda

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Agenda

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Introduction

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

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Business Reasons for Functional Sizing

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"

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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!"

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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"

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Business Reasons for Functional Sizing
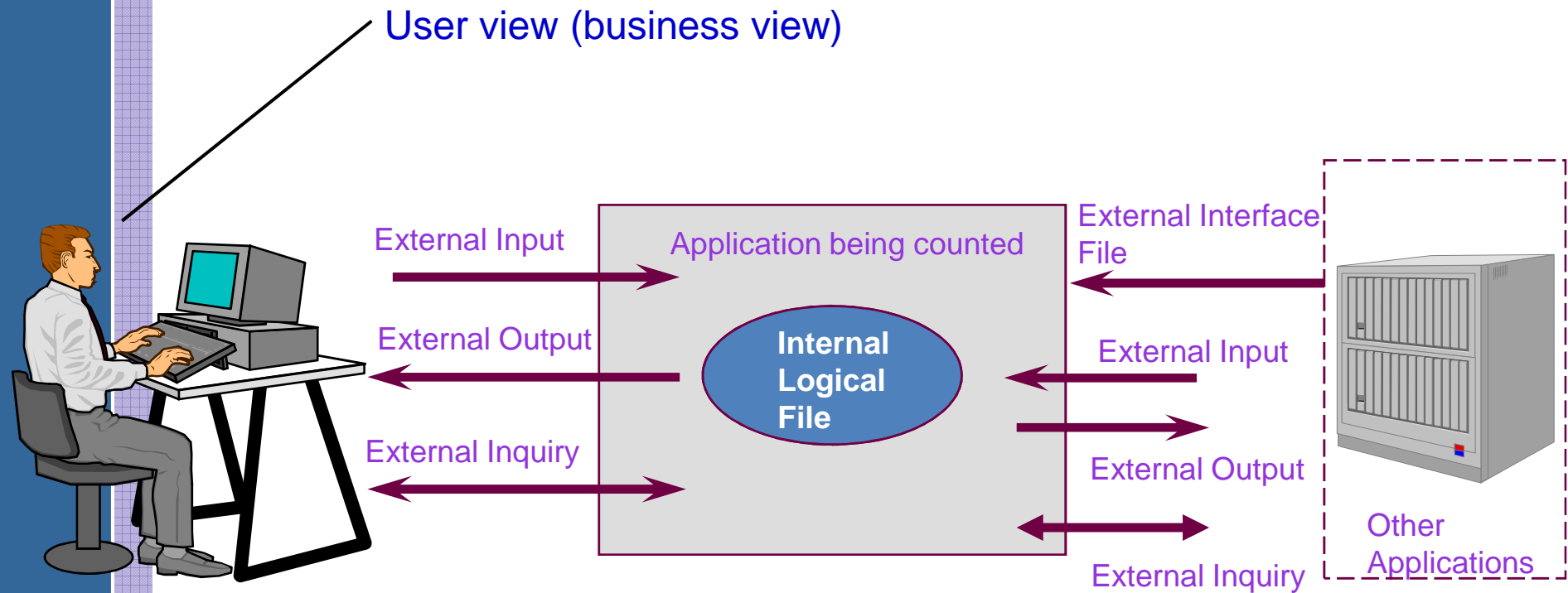## Clients <u>Get</u> to Be in Control

- 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

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Function Point Analysis (FPA)

Function Point Analysis (FPA)
General Idea

User view (business view)

External Input → Application being counted

External Interface File ←

External Output ←

Internal Logical File

External Input ←

External Inquiry →

External Output →

External Inquiry ←

Other Applications

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

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Function Point Analysis (FPA)
Models & Function Points

- ## Explanatory Models

  - Used to understand behavior

  - Mostly used by economists, researchers & social scientists

  - <u>Example</u>: modeling productivity as a function of several variables (e.g., COCOMO II effort multipliers) to guide process improvement initiatives

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Function Point Analysis (FPA)
Models & Function Points

- Predictive Models

  - Used to predict future behavior

  - Used by estimators

  - <u>Example</u>: modeling effort as a function of size & productivity to obtain estimates

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Function Point Analysis (FPA)
Models & Function Points

- ● Prescriptive Models

  - – Used to regulate relationships

  - – Used in business agreements

  - – <u>Example</u>: Establishing fixed productivity values for software development pricing; setting prices based on the value of a function point

  - – These are <u>not</u> estimation models!

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FP-based Business 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

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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
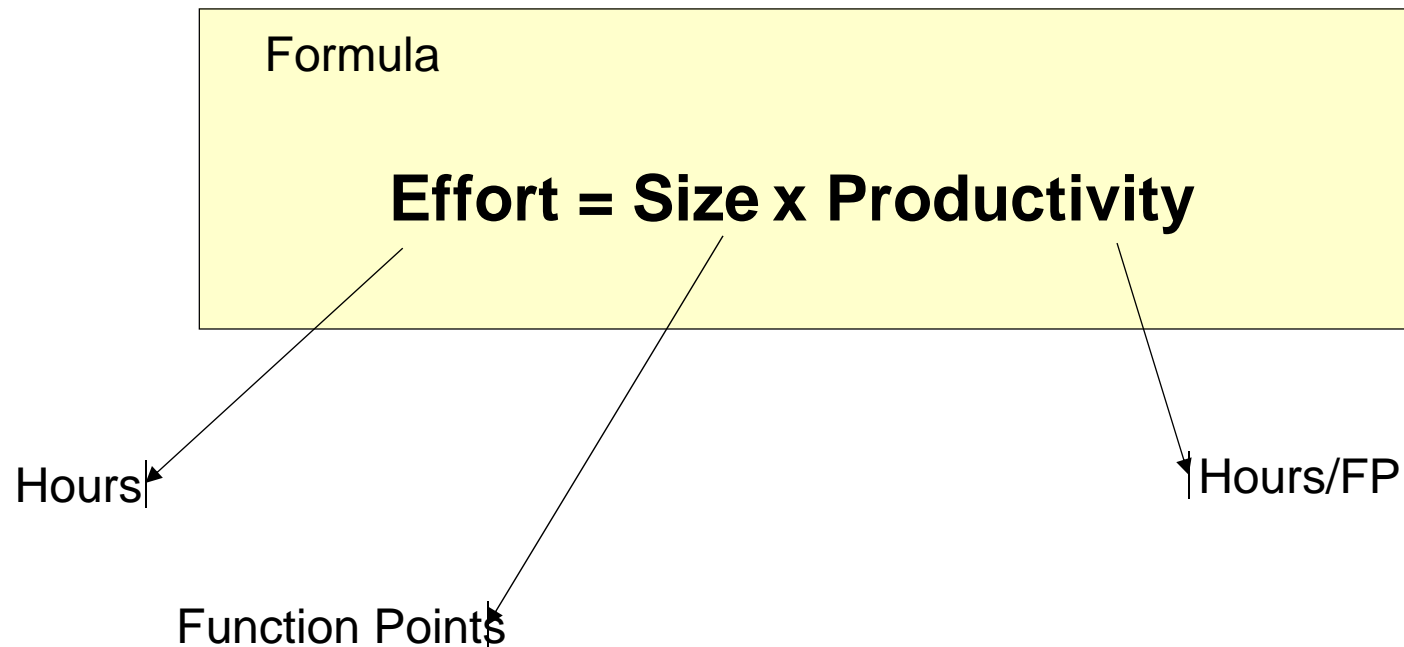
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Estimation Models

- Estimation models are predictive models typically used in

  - Budgets

  - RFPs

  - Pricing model calibration

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FP-based Business Models
Estimation Models

- Example: Basic

Formula

Effort = Size x Productivity

Hours

Hours/FP

Function Points

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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.

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Pricing Models

- Productivity-based model

  – **Productivity** figures typically include all lifecyle phases

  – Typical **productivity** values: 5, 10, 15, 20 H/FP (hours per FP)

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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)

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FP-based Business Models
Pricing Models

- Productivity-based model

  - **Pricing**

    - Effort will be computed as

      - Size (FP) * Productivity (H/FP) = Effort (H)

    - Price will be computed as

      - Effort (H) * Hourly Rate ($)

    - Applies to both new development & enhancement

      projects

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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

    - Size (FP) * Unit FP Price ($/FP)

  - For new development & enhancement projects

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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

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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

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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

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FP-based Business Models
Benefits & Challenges

- ## Benefits

  - Improves current practice (better than before)

  - Drives productivity up

  - Transparent

  - Objective

  - Good for any technology/process

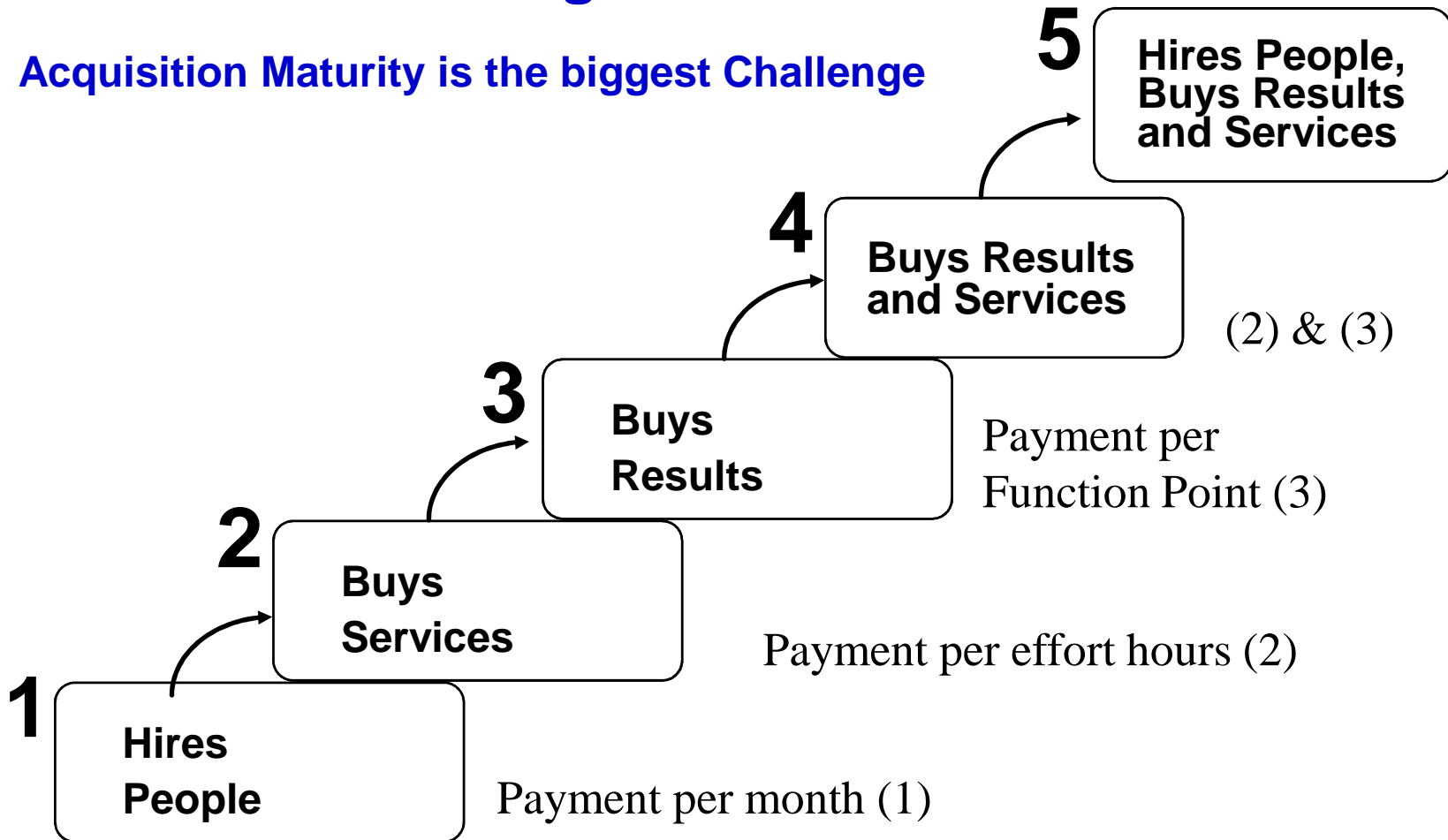ti MÉTRICAS

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!)

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FP-based Business Models
Benefits & Challenges

Acquisition Maturity is the biggest Challenge

5 Hires People, Buys Results and Services

4 Buys Results and Services

(2) & (3)

3 Buys Results

Payment per Function Point (3)

2 Buys Services

Payment per effort hours (2)

1 Hires People

Payment per month (1)

Note – cumulative levels

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Summary

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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

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Thank You!

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