Six Sigma for Analyzing Market Preferences

Success with your projects

Structured Methods

Product Development

Project Office

Proposal Management

Process Metrics

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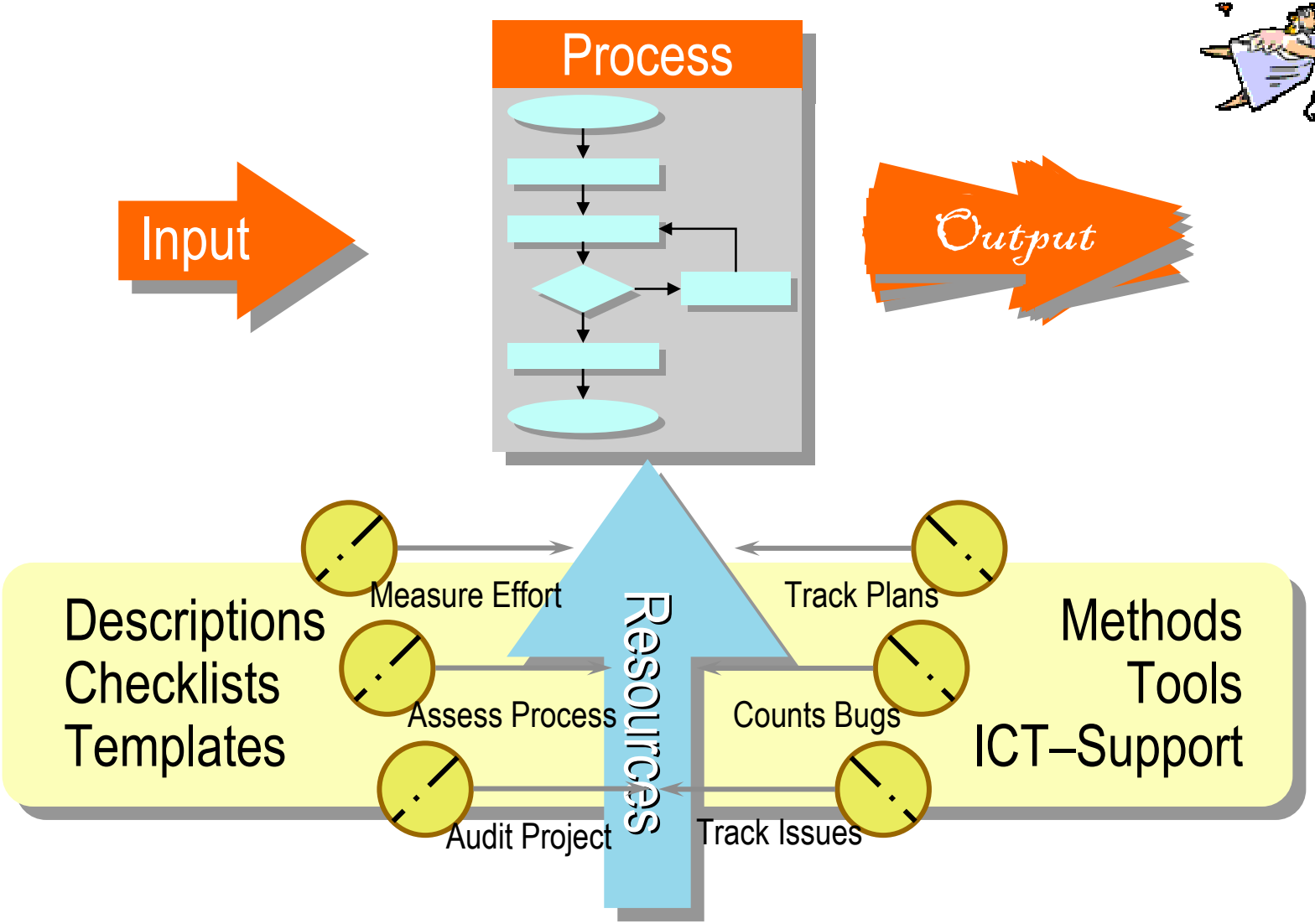
NET PROMOTER®
LOYALTY PARTNER

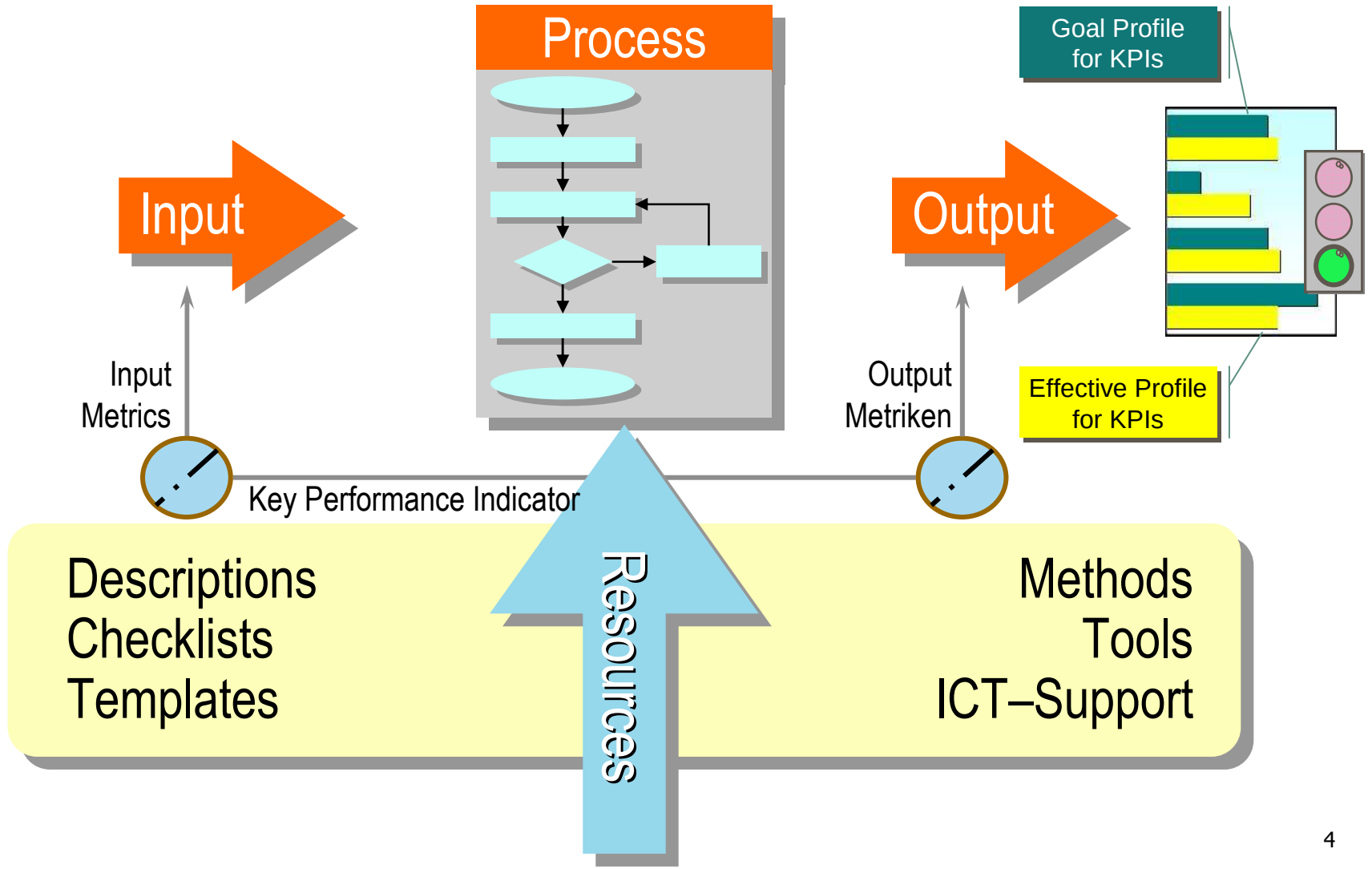
Dr. Thomas Fehlmann

- 1981: Dr. Math. ETHZ
- 1982-89: Manager Software–Development
- 1990-95: Senior Consultant – Digital Equipment Corp.
- 1996-99: Sales Support Manager – Proposal Center
- 1999ff: Euro Project Office AG, Zürich
  - Akao Price 2001 for original contributions to QFD
  - Member of the Board of QFD Institute Germany – QFD Architect
  - SwiSMA: Software Metrics, Functional Sizing
- 2000ff: Six Sigma Black Belt for GMC Software AG
  - ISO 9001 Management System
  - CMMI for Software Development
  - QFD and New Lanchester Theory
  - Net Promoter® Certified Associate

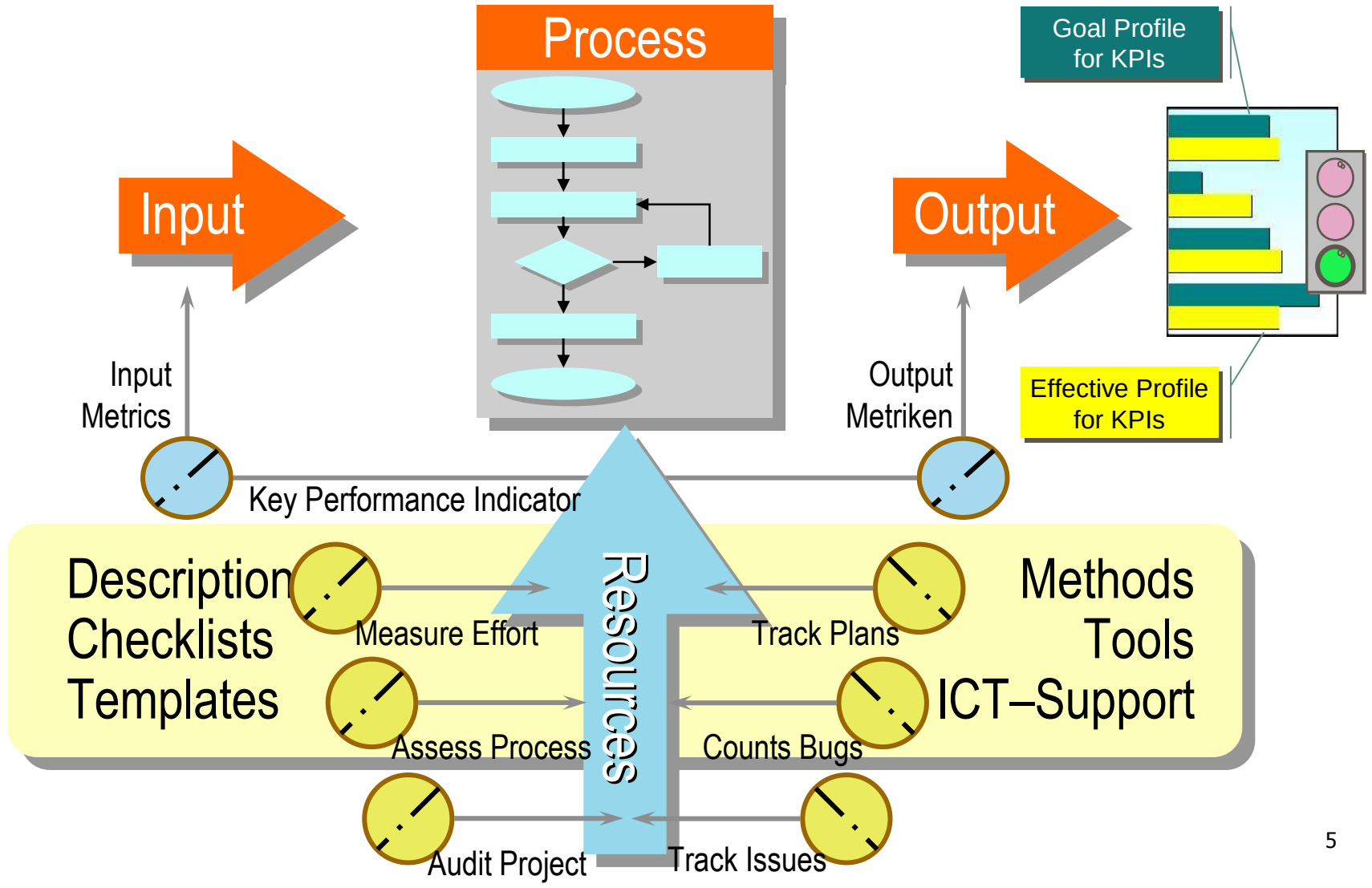
Traditional Metrics



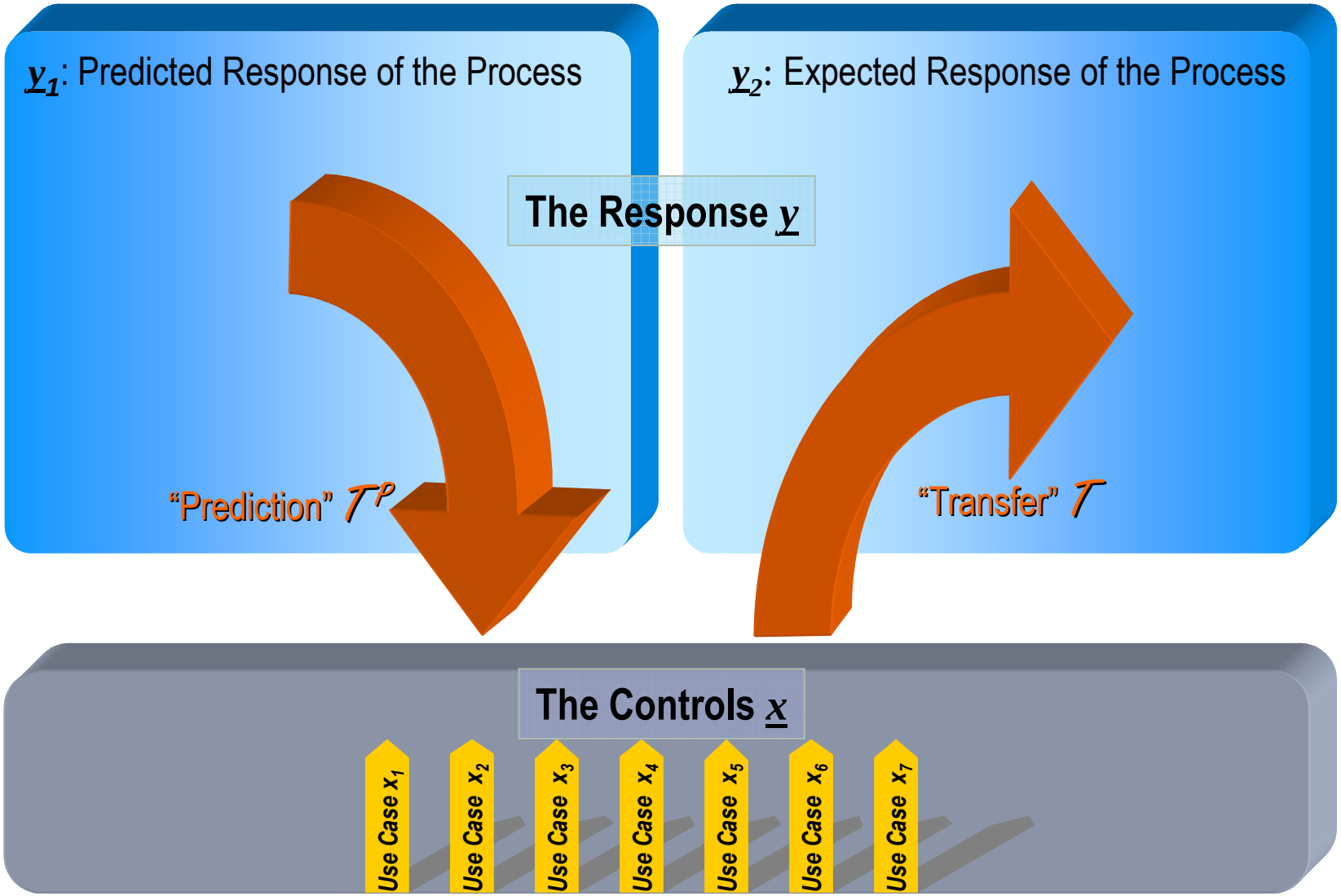
Process with KPIs for Statistical Control



Process with Measured Transfer Function



Prediction and Transfer Function



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… no additional approach?

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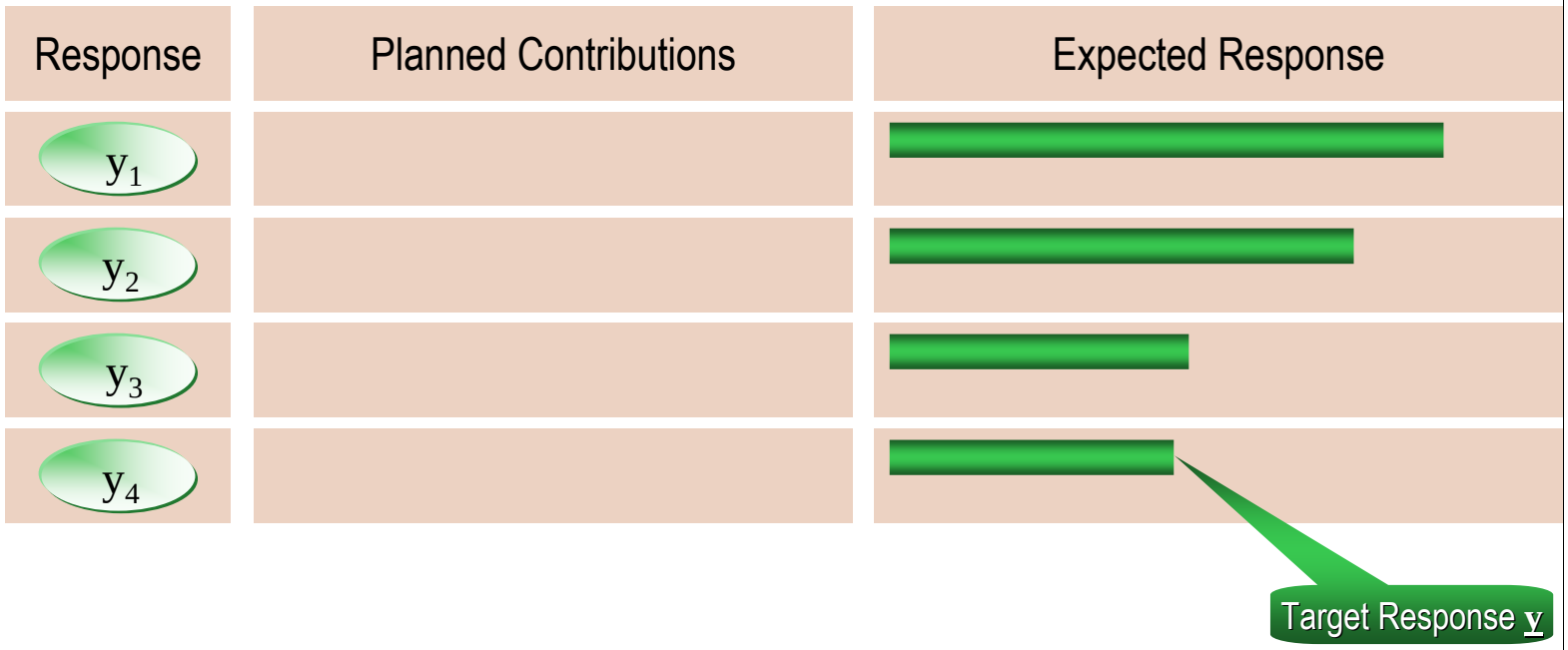
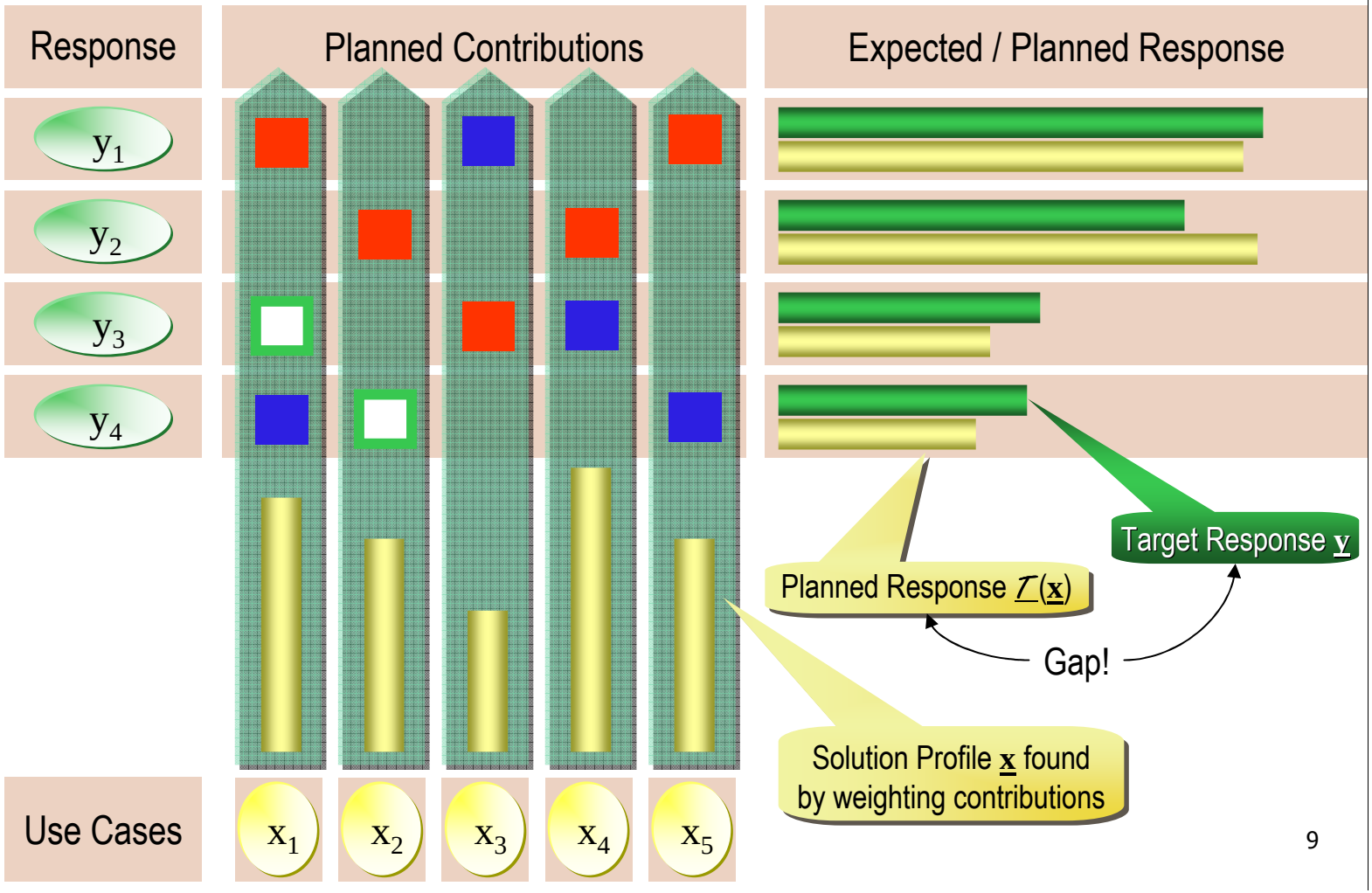
Expected Response for Transfer Function T

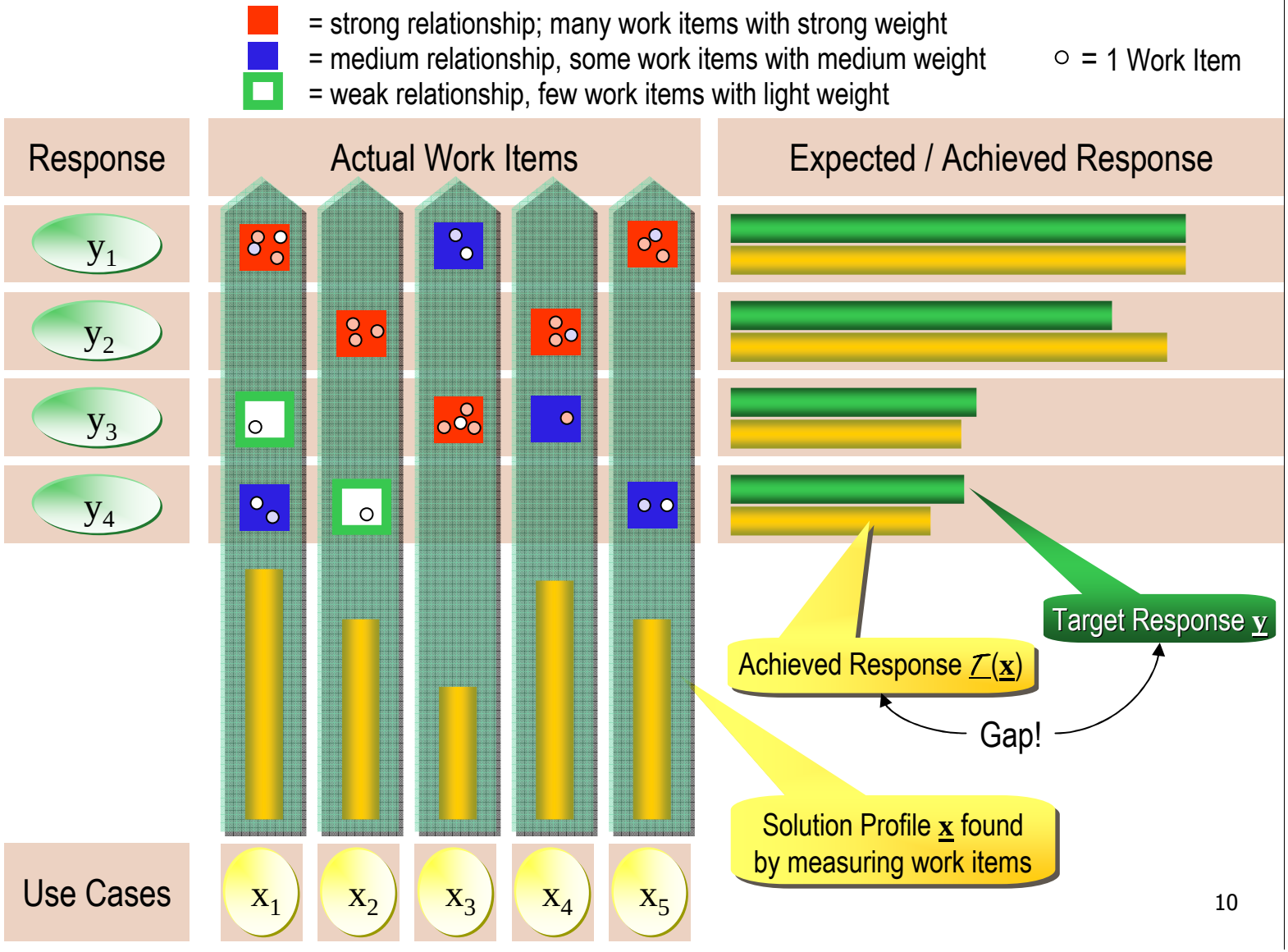


Planned Response for Transfer Function $\mathcal{T}$

= strong relationship; many contributions with strong weight
= medium relationship, some contributions with medium weight
= weak relationship, few contributions with light weight

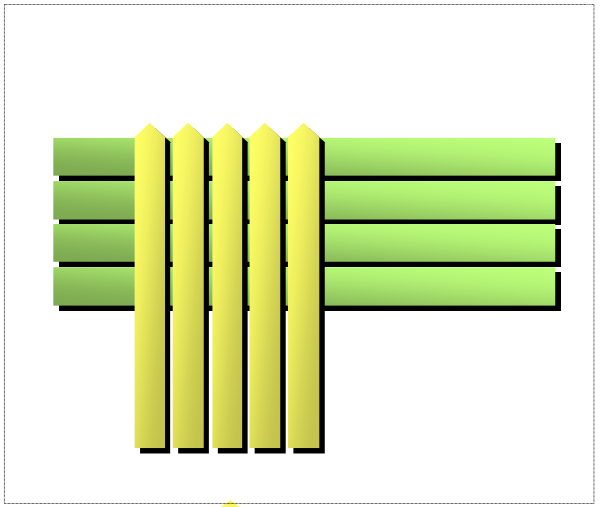


Achieved Response for Transfer Function $\mathcal{T}$



Different Views

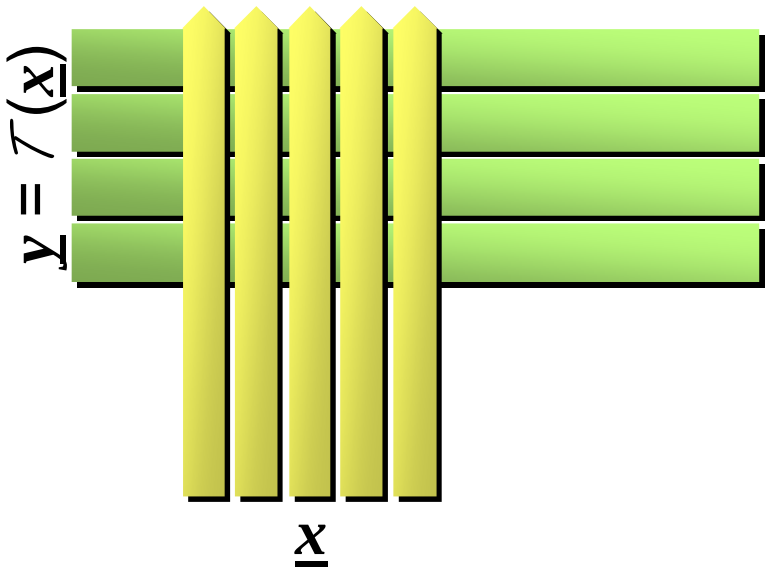
Customers



Product Managers

Transfer Functions – Value Combinators

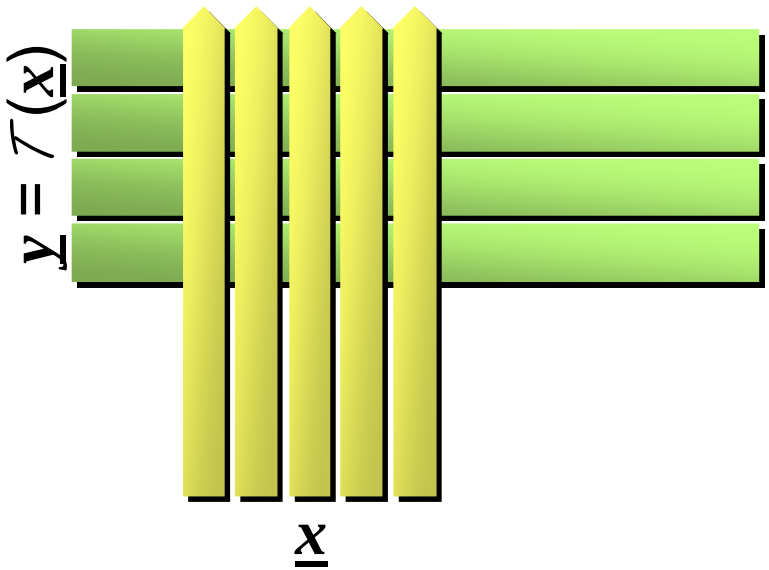
Use Case Solution ($\underline{x}$)→
Customer's Needs ($\underline{y}$)



- $\underline{y} = T(\underline{x})$:
  - The Use Case Solution $\underline{x}$ yields the Customer's Needs $\underline{y} = T(\underline{x})$ as a response
  - Whether Customer's Needs are met is a function of Use Case Solution profile vector $\underline{x}$
- T is defined by critical Use Cases
  - Expected Response for selected business drivers
  - Critical technical requirements control the response
- T^P is the associated prediction function
  - T^P predicts the solution $\underline{x}$ that yields $\underline{y} = T(\underline{x})$
  - For matrices, $T^P = T^T$, the prediction function is the transposed matrix

Transfer Functions – Preference Combinators

Market Preferences ($\underline{x}$)→
Market Share ($\underline{y}$)

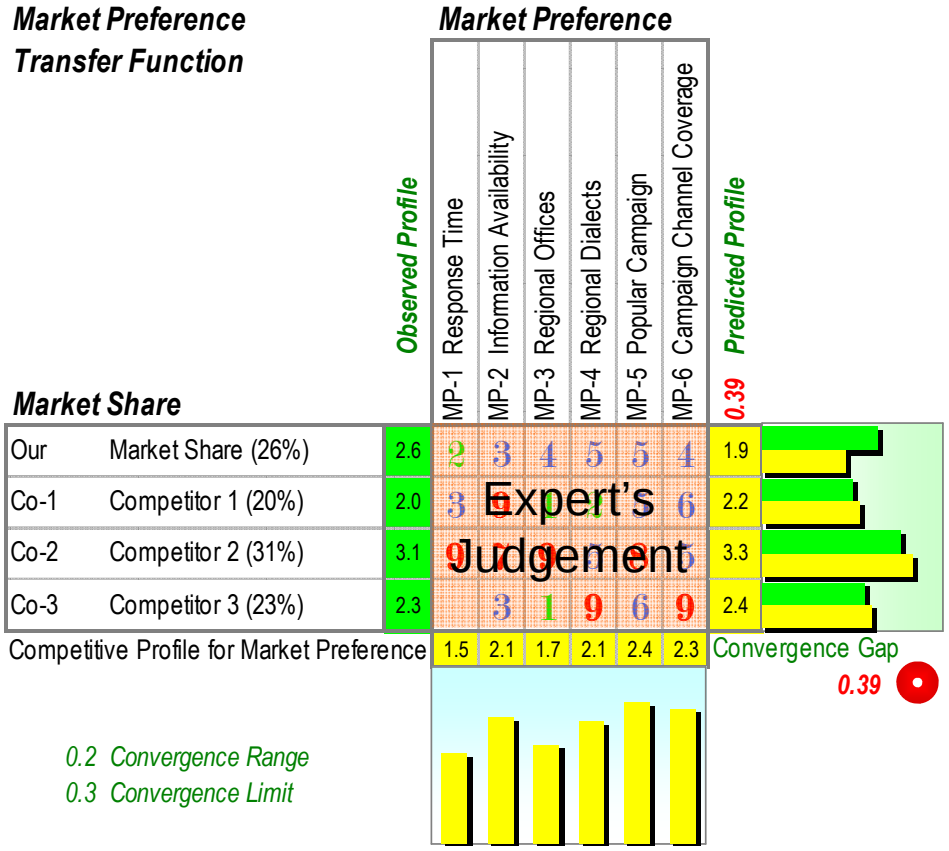


- $\underline{y} = \mathcal{T}(\underline{x})$:
  - The Market Preferences $\underline{x}$ cause the observed Market Share $\underline{y} = \mathcal{T}(\underline{x})$ as a response
  - What Market Share is gain is the system response to the actual Market Preference vector $\underline{x}$
- $\mathcal{T}$ is defined by critical Preferences
  - Expected Response for selected market segments
  - Critical preferences in those segments control the response
- $\mathcal{T}^P$ is the associated prediction function
  - $\mathcal{T}^P$ predicts the preferences $\underline{x}$ that yield $\underline{y} = \mathcal{T}(\underline{x})$
  - For matrices, $\mathcal{T}^P = \mathcal{T}^T$, the prediction function is the transposed matrix

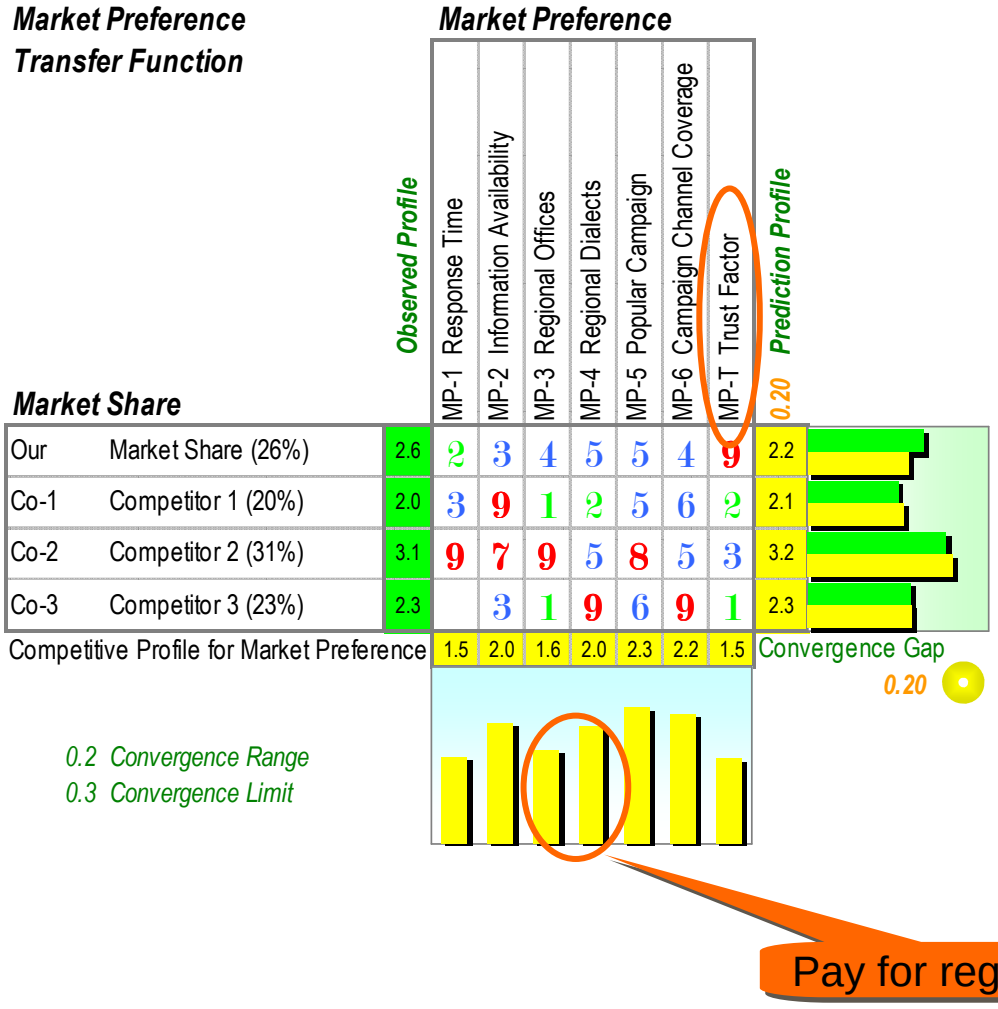
Sample Transfer Function

- The *customer phone number inquiry help desk*
  - Measurable market share
  - ***Observed Response Profile***
- Unknown Market Preference
  - What customer preferences controls the decision to select our, or someone else's, service?
  - Using QFD for predicting the control's profile, we get the
  - ***Predicted Response Profile***

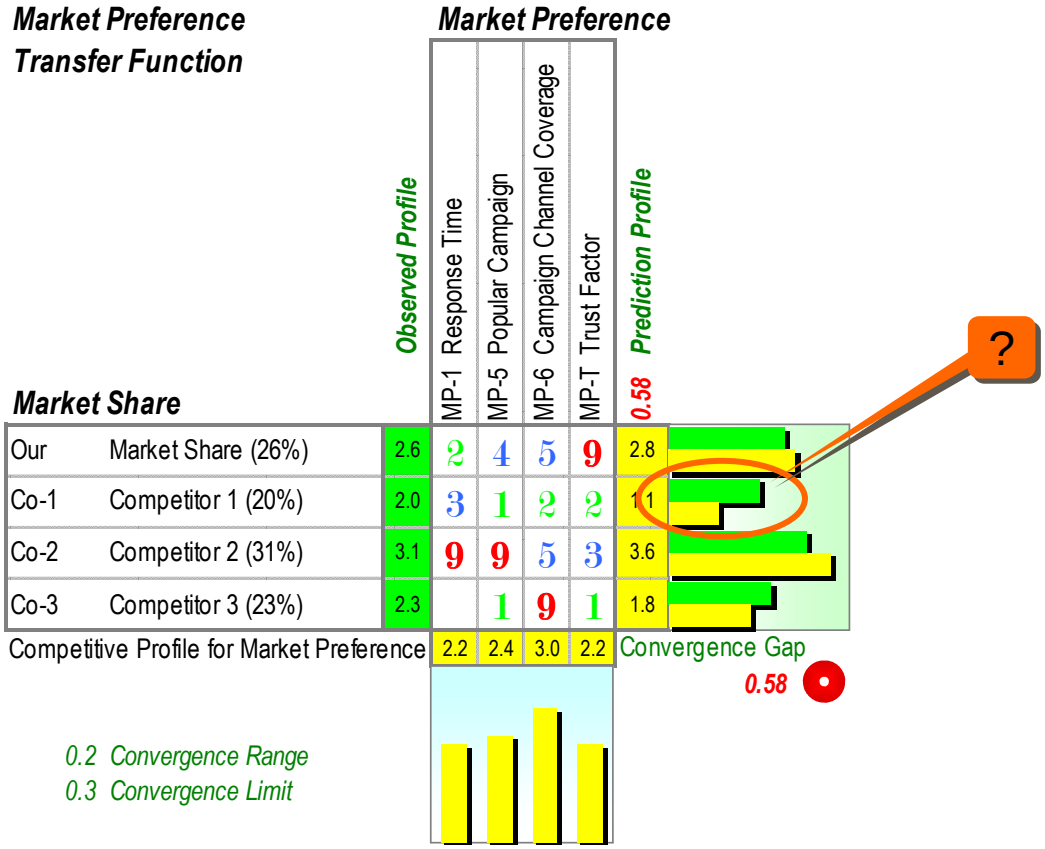
1st Attempt for Explanation



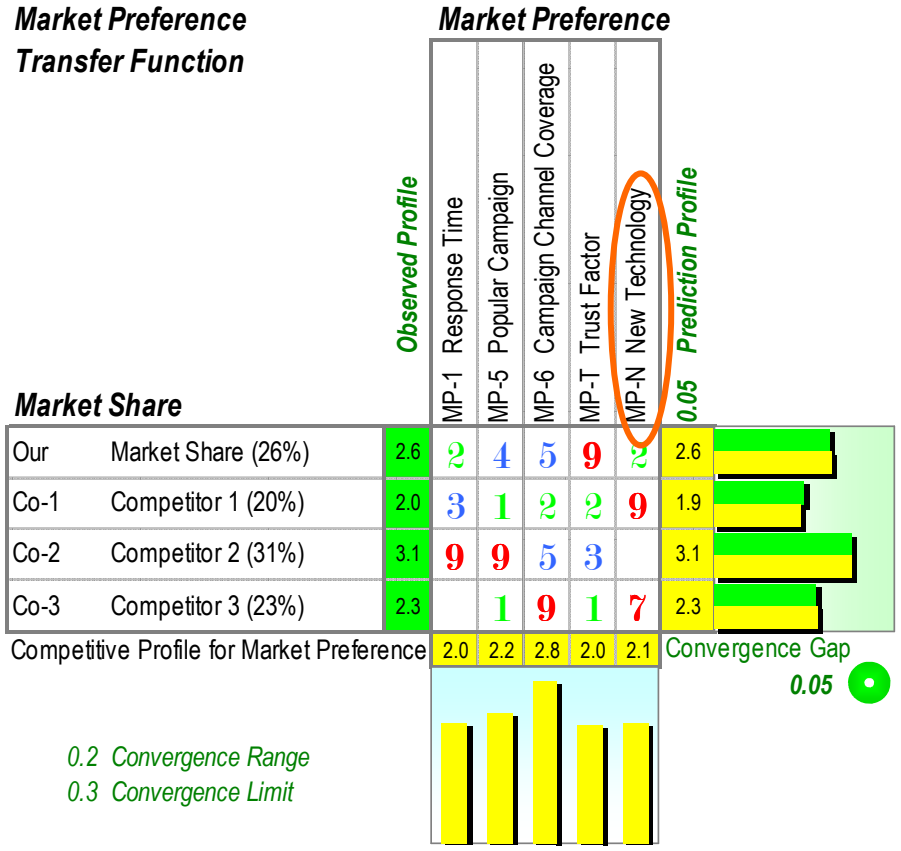
Adding Trust Factor – improves!



Removing Regional Links – deteriorates!



Technology Factor – Best Explanation!

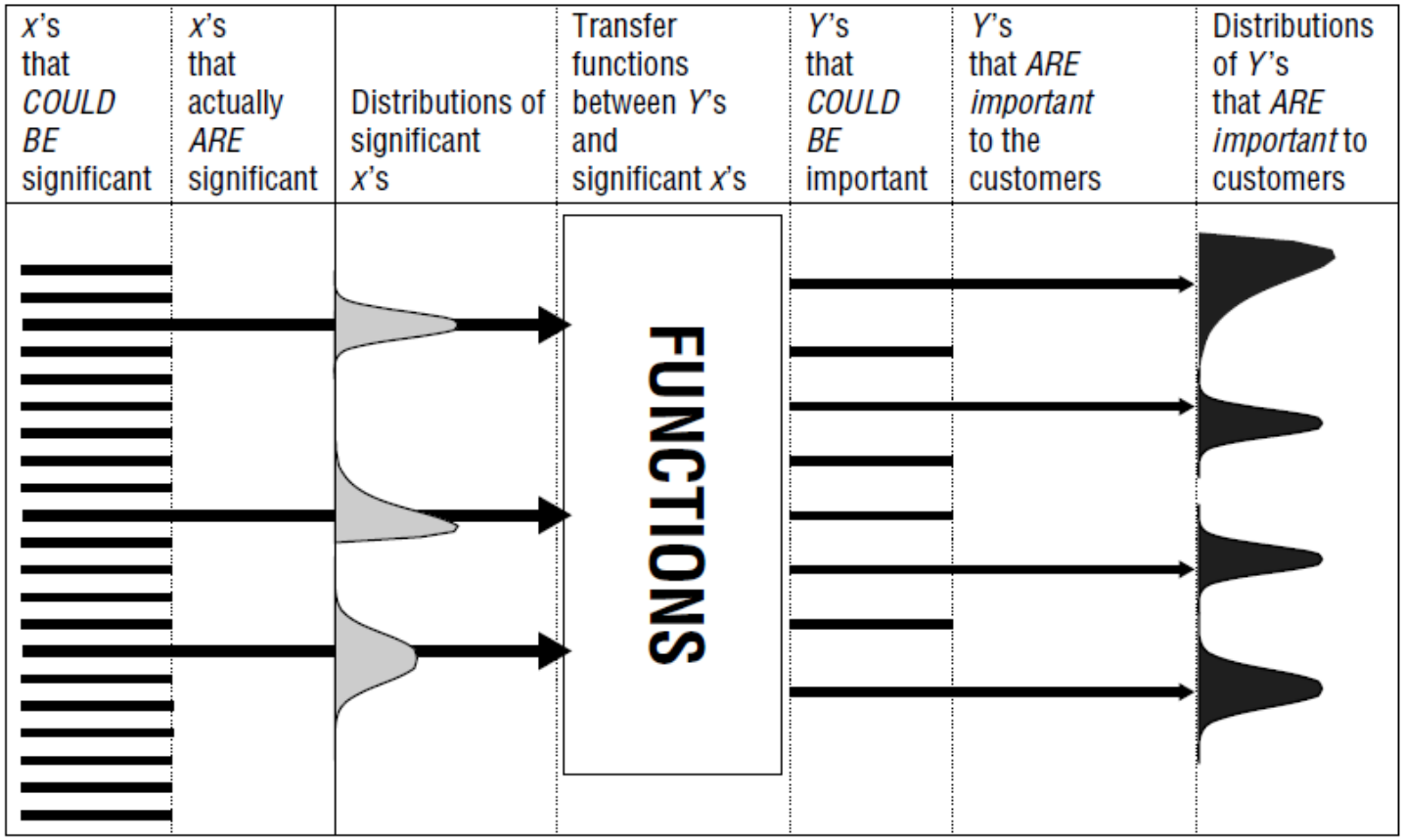


Measurements

- Was the Expert Judgment right?

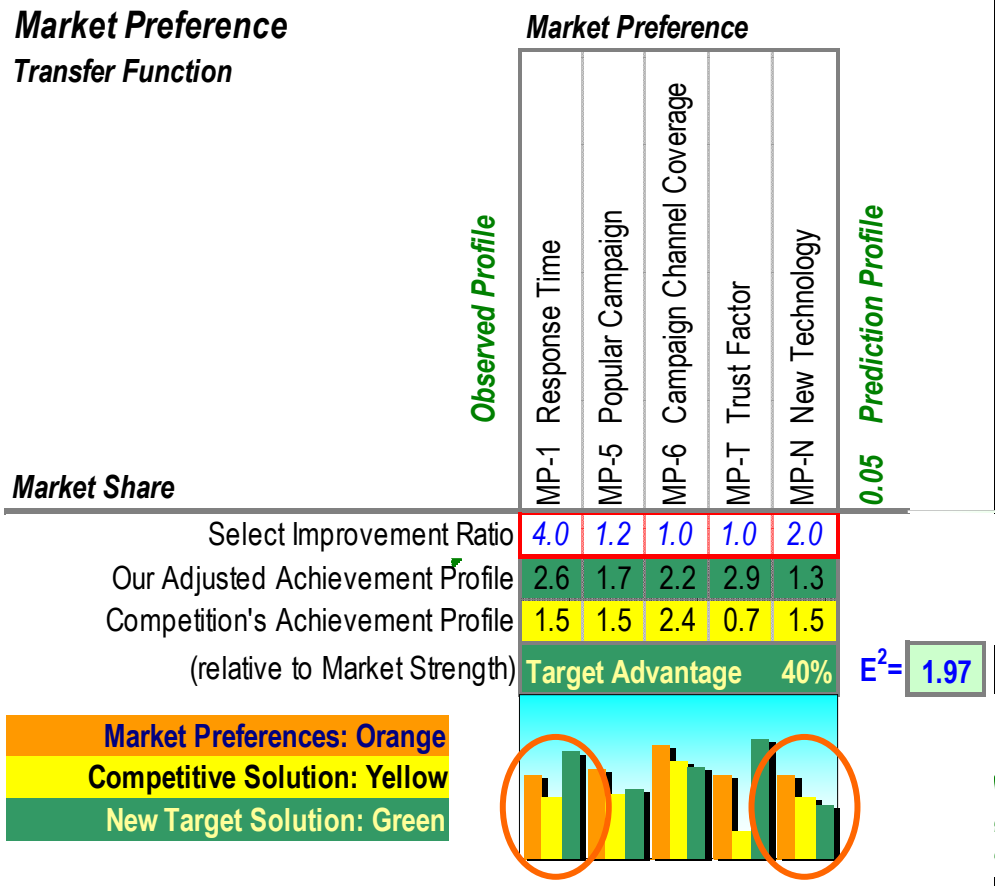
Rate what is important for you		Who does best?			
		We do best!	Competitor 1	Competitor 2	Competitor 3
1. Response Time	☑	☐	☑	☐	☐
2. Information Availability	☐	☐	☐	☐	☐
3. Regional Offices	☐	☐	☐	☐	☐
4. Regional Dialects	☐	☐	☐	☐	☐
5. Popular Campaign	☑	☑	☐	☐	☐
6. Campaign Channel Coverage	☐	☐	☐	☐	☐

The Big Number Problem



New Lanchester Theory

- Strategy of the Weak
  - Find where your competitors are most vulnerable
  - Win local battles!
- Strategy of the Strong
  - Make sure no small competitor can beat you on particulars
  - Block competition!



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Questions?

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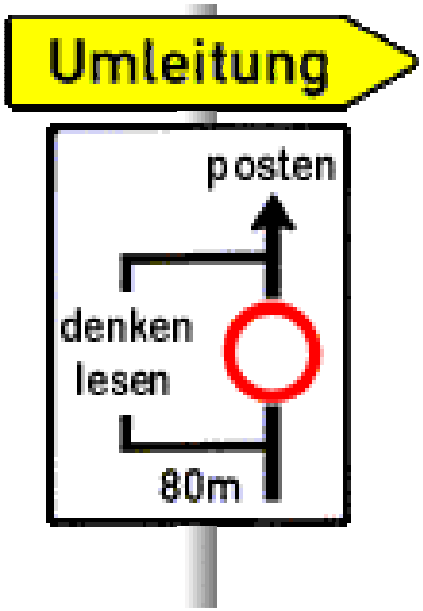
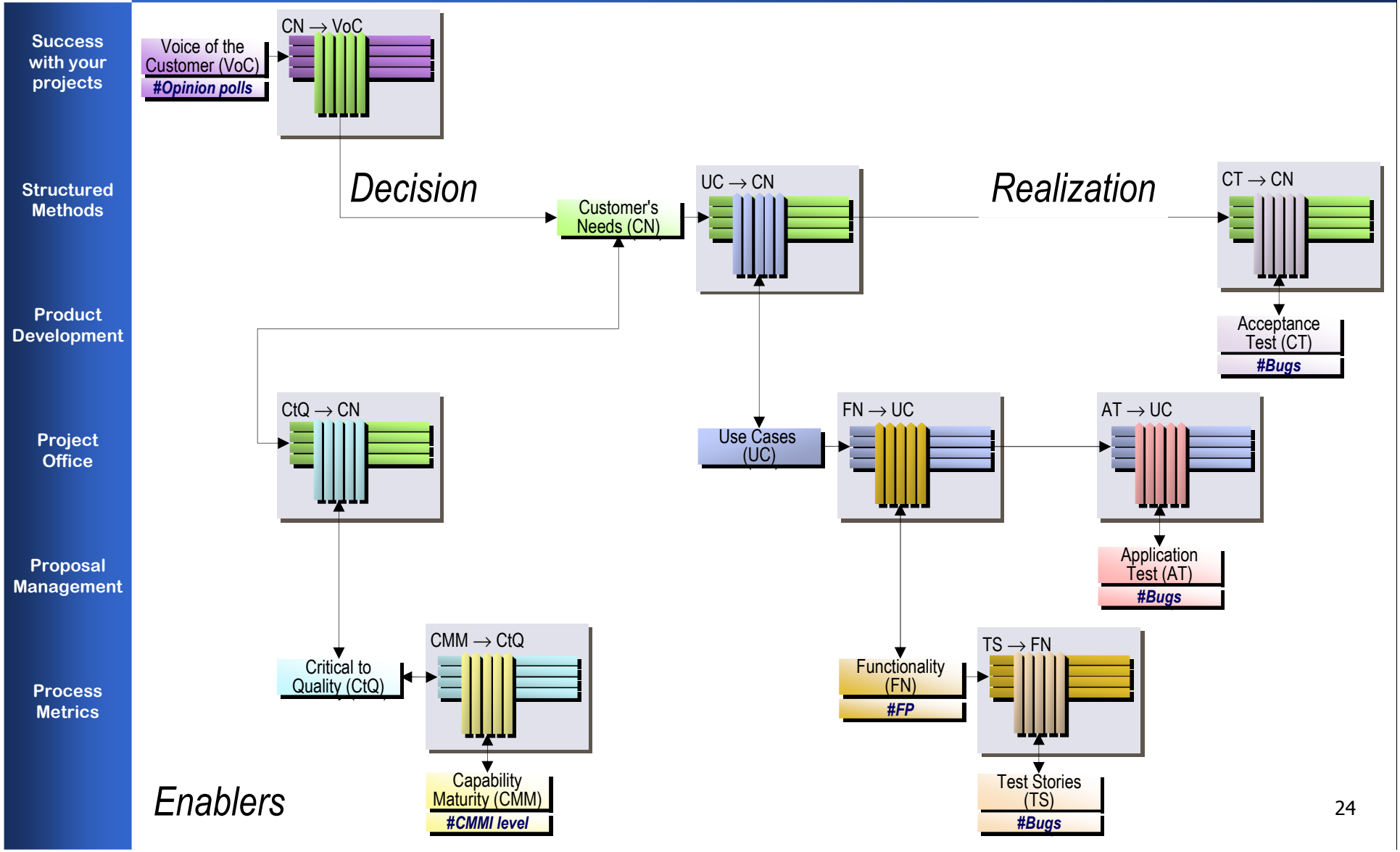
Backup



Deming Value Chain for SW Development



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Deming Value Chain for Product Development