

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

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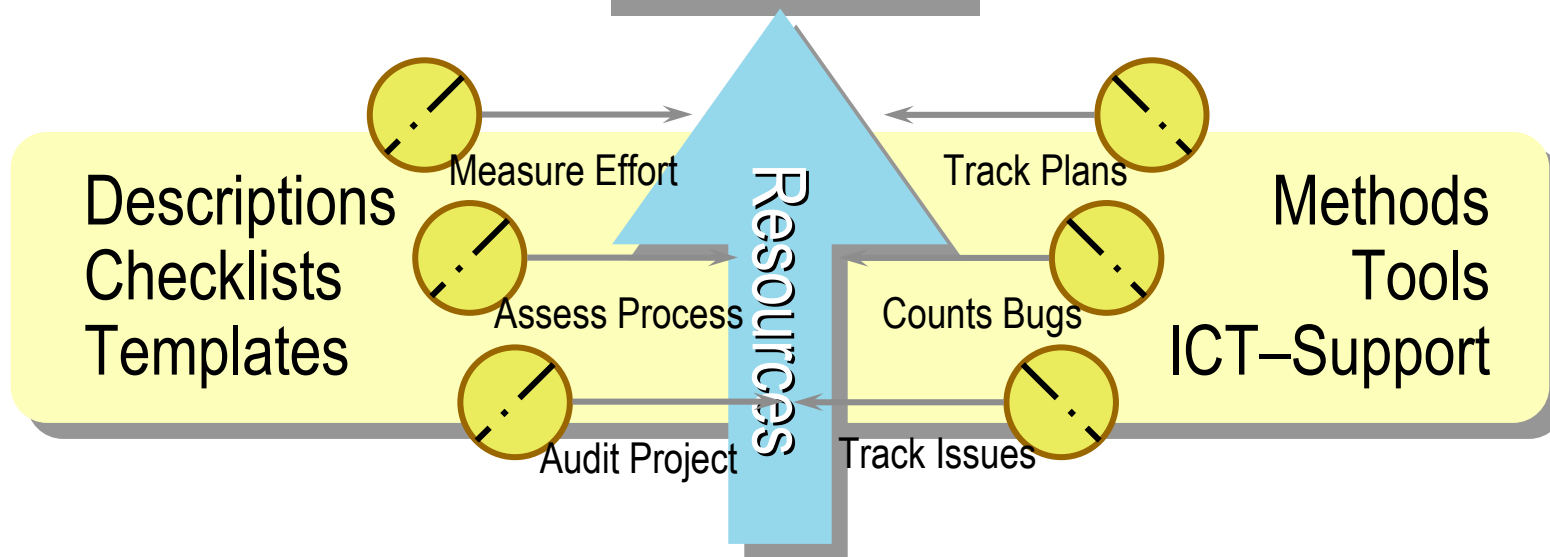
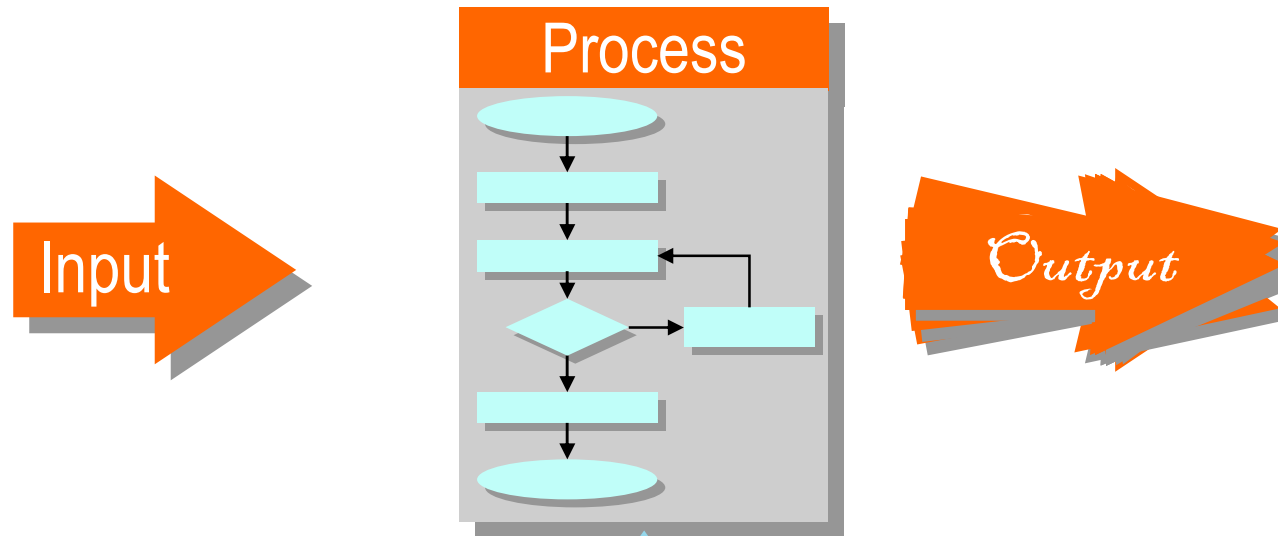
Proposal
Management

Process
Metrics

- 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



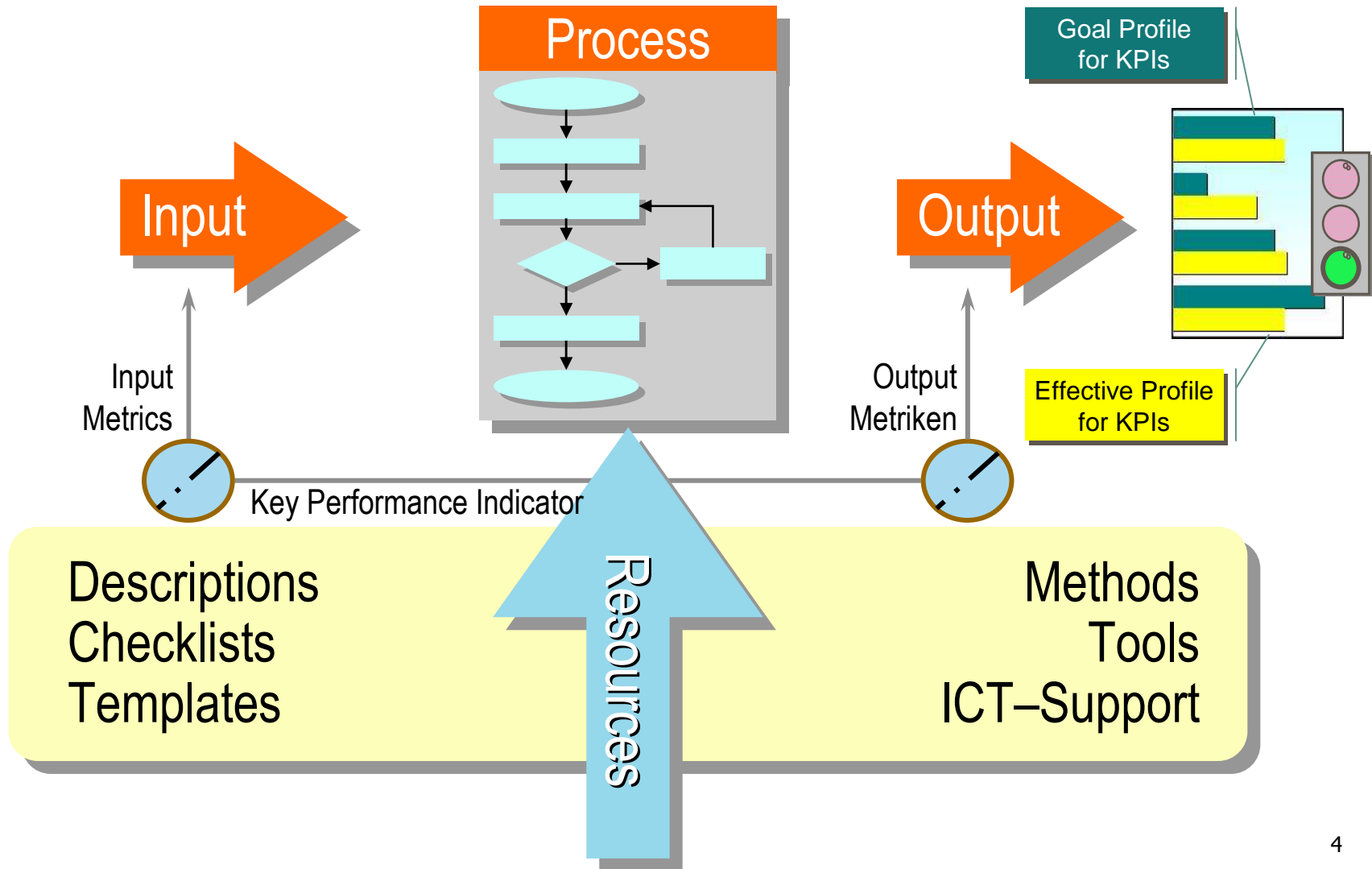
Traditional Metrics



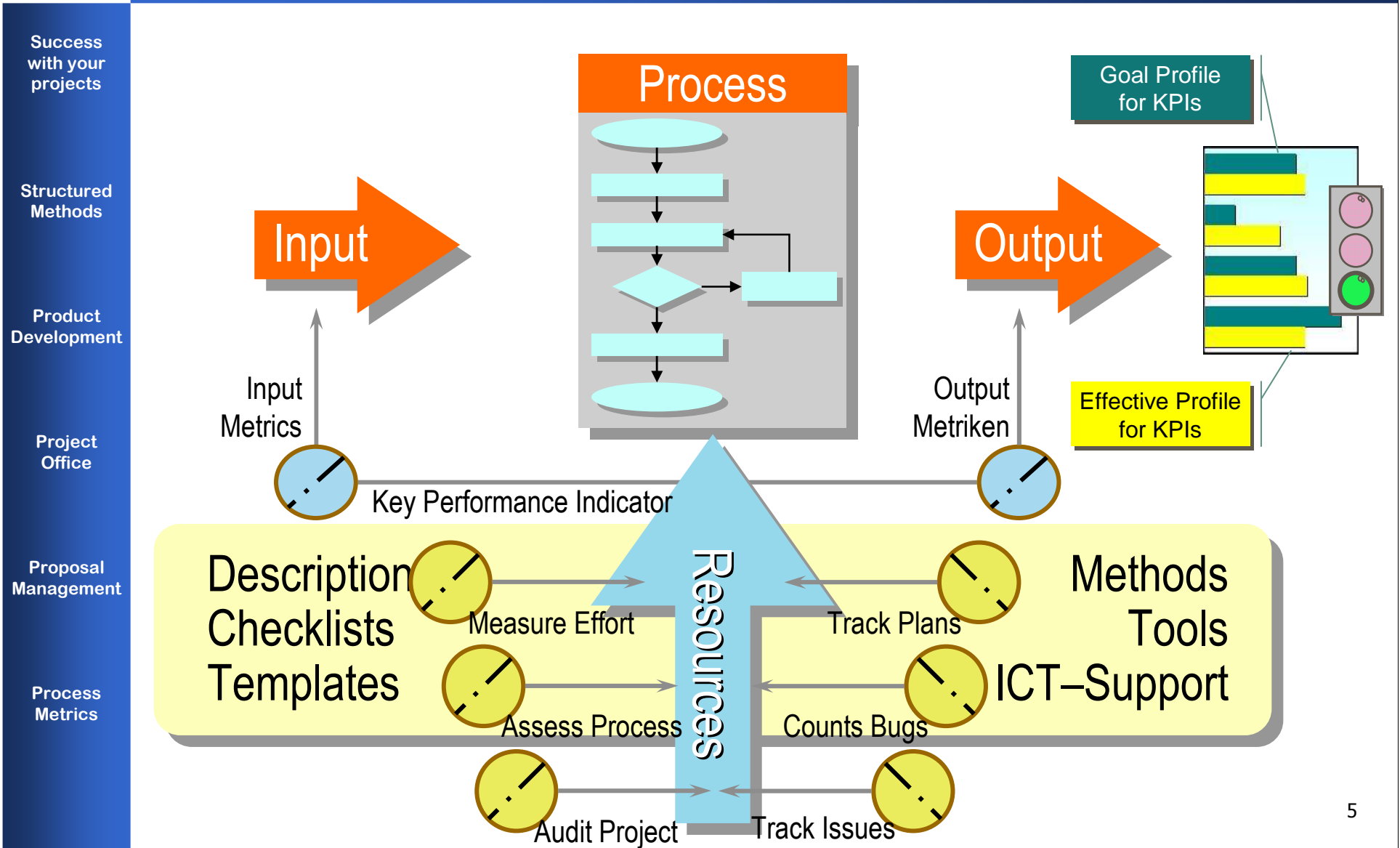
- Success with your projects
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Process with KPIs for Statistical Control

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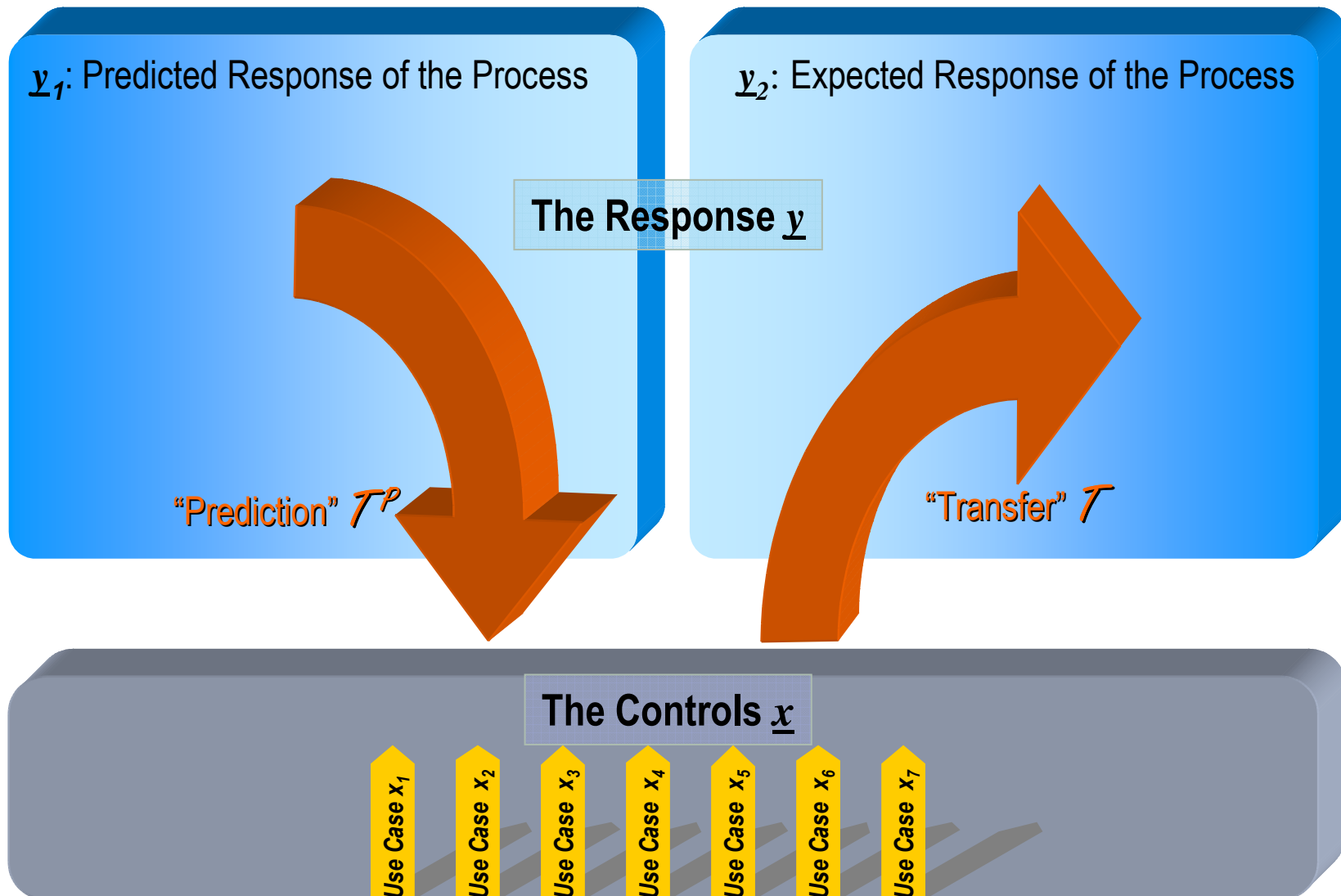


Process with Measured Transfer Function



Prediction and Transfer Function

- Success with your projects
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... no additional approach?

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Expected Response for Transfer Function τ

Success with your projects





Structured Methods

Product Development

Project Office

Proposal Management

Process Metrics

Response	Planned Contributions	Expected Response
y_1		
y_2		
y_3		
y_4		

Target Response \underline{y}



Planned Response for Transfer Function \mathcal{T}

Success with your projects

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

Structured Methods

Response

Planned Contributions

Expected / Planned Response

y_1

y_2

y_3

y_4

Product Development

Project Office

Proposal Management

Process Metrics

Use Cases

x_1

x_2

x_3

x_4

x_5

Planned Response $\mathcal{T}(\underline{x})$

Target Response \underline{y}

Gap!

Solution Profile \underline{x} found by weighting contributions

Achieved Response for Transfer Function T

Success with your projects

- = strong relationship; many work items with strong weight
- = medium relationship, some work items with medium weight
- = weak relationship, few work items with light weight
- = 1 Work Item

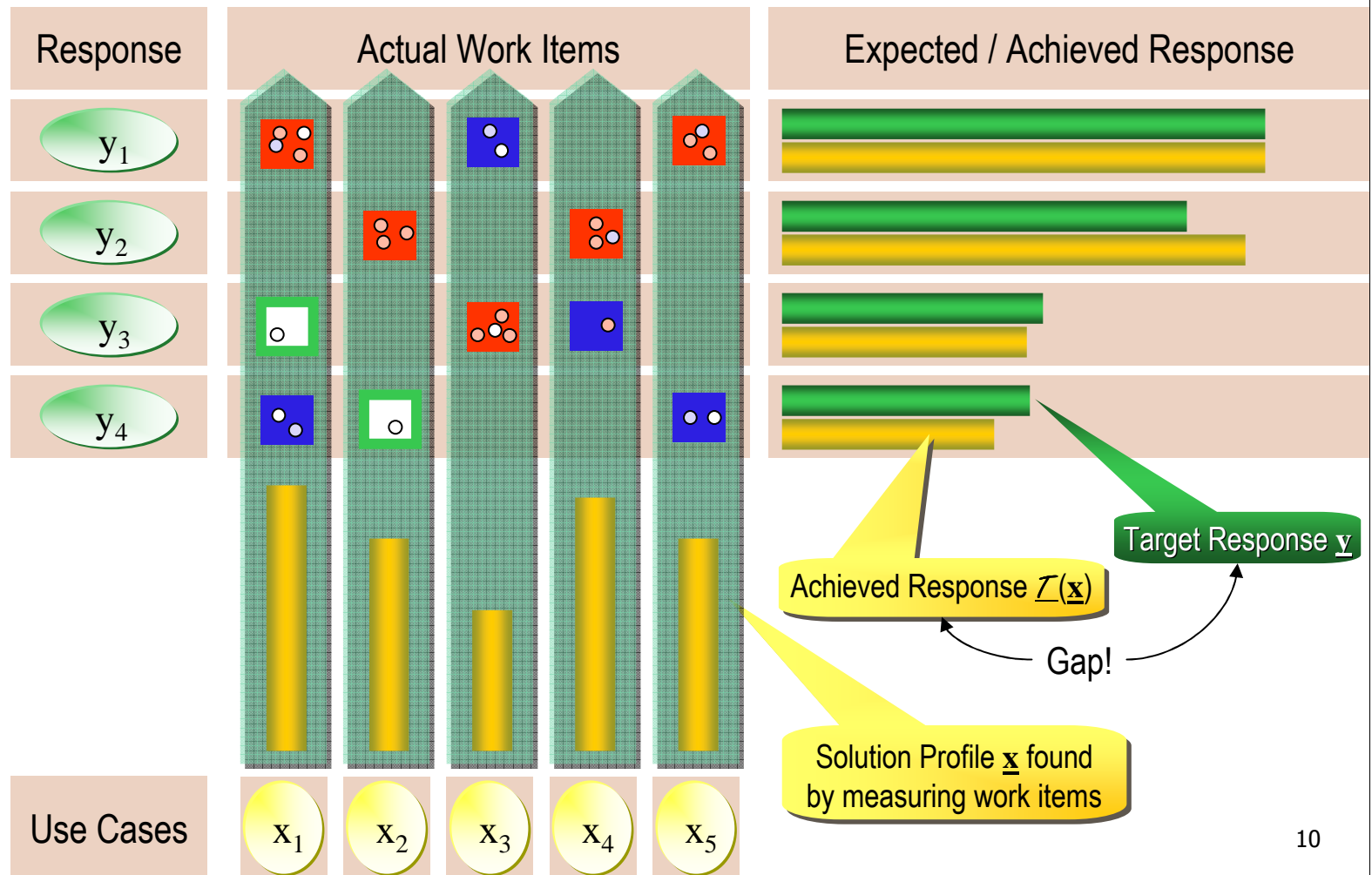
Structured Methods

Product Development

Project Office

Proposal Management

Process Metrics



Different Views

Success with your projects



Customers

Structured Methods

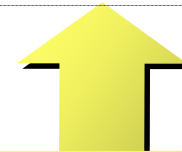
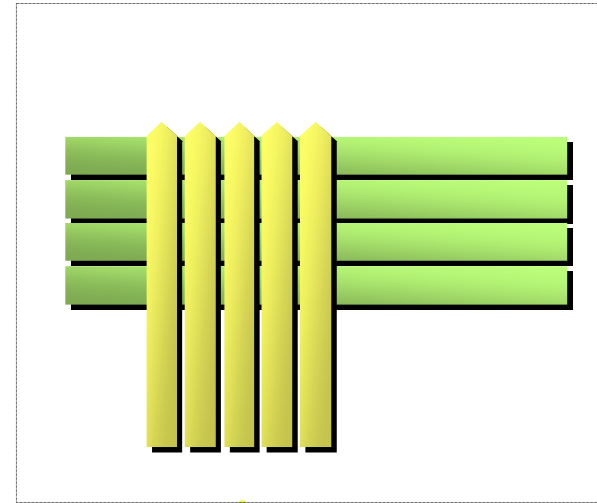
Product Development



Project Office

Proposal Management

Process Metrics



Product Managers



Transfer Functions – Value Combinators

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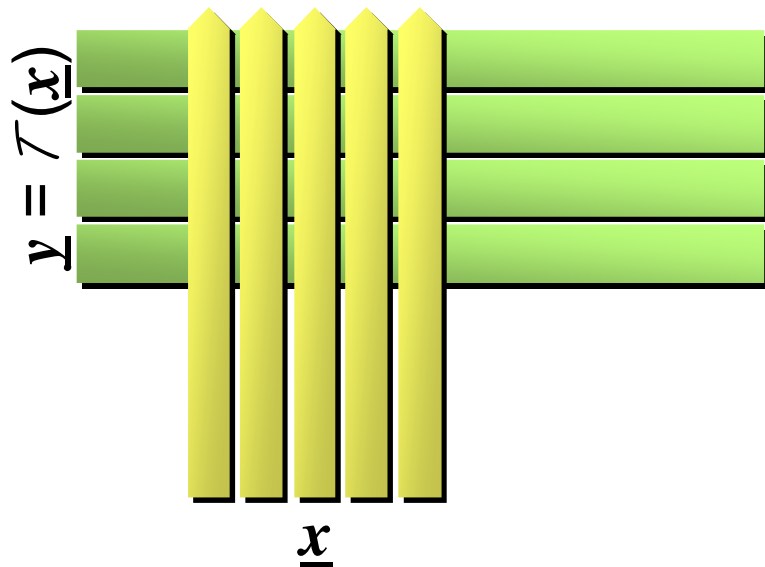
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Use Case Solution (\underline{x}) →
Customer's Needs (\underline{y})



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

Transfer Functions – Preference Combinators

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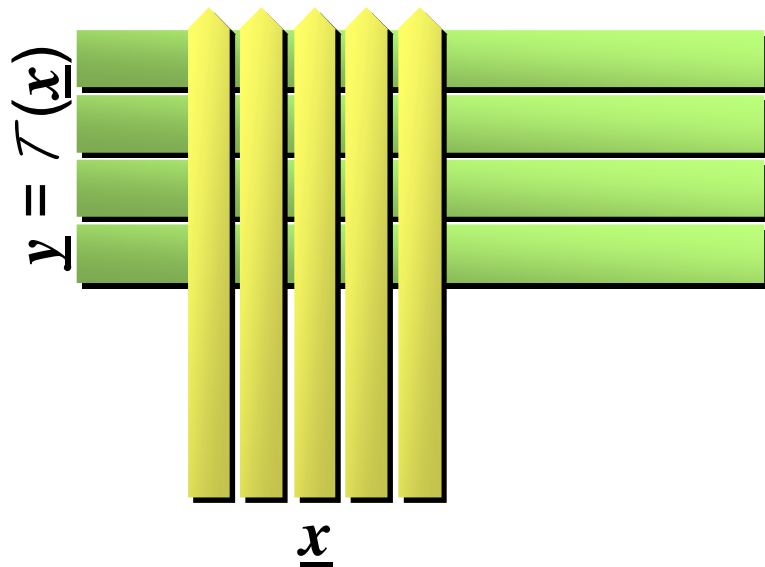
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Market Preferences (\underline{x}) →
Market Share (\underline{y})



- $\underline{y} = \mathcal{T}(\underline{x})$:
 - ➔ 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

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- 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

Success with your projects

Structured Methods

Product Development

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Process Metrics

Market Preference Transfer Function

Market Preference

Market Share

		Observed Profile	MP-1 Response Time	MP-2 Information Availability	MP-3 Regional Offices	MP-4 Regional Dialects	MP-5 Popular Campaign	MP-6 Campaign Channel Coverage	Predicted Profile	
Our	Market Share (26%)	2.6	2	3	4	5	5	4	1.9	
Co-1	Competitor 1 (20%)	2.0	3	3	3	3	3	3	2.2	
Co-2	Competitor 2 (31%)	3.1	3	3	3	3	3	3	3.3	
Co-3	Competitor 3 (23%)	2.3	3	3	3	3	3	3	2.4	
Competitive Profile for Market Preference			1.5	2.1	1.7	2.1	2.4	2.3		

0.2 Convergence Range
0.3 Convergence Limit

0.39

Adding Trust Factor – improves!

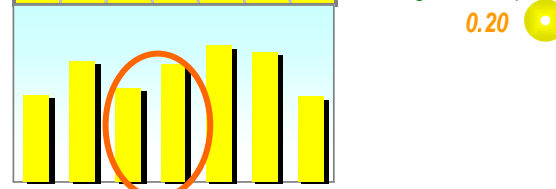
- Success with your projects
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Market Preference Transfer Function

Market Preference

		Observed Profile	MP-1 Response Time	MP-2 Information Availability	MP-3 Regional Offices	MP-4 Regional Dialects	MP-5 Popular Campaign	MP-6 Campaign Channel Coverage	MP-T Trust Factor	Prediction Profile		
Our	Market Share (26%)	2.6	2	3	4	5	5	4	9	2.2	[Bar chart showing Our profile]	
Co-1	Competitor 1 (20%)	2.0	3	9	1	2	5	6	2	2.1	[Bar chart showing Co-1 profile]	
Co-2	Competitor 2 (31%)	3.1	9	7	9	5	8	5	3	3.2	[Bar chart showing Co-2 profile]	
Co-3	Competitor 3 (23%)	2.3		3	1	9	6	9	1	2.3	[Bar chart showing Co-3 profile]	
Competitive Profile for Market Preference		1.5	2.0	1.6	2.0	2.3	2.2	1.5		0.20	Convergence Gap	

0.2 Convergence Range
0.3 Convergence Limit



Pay for regional?

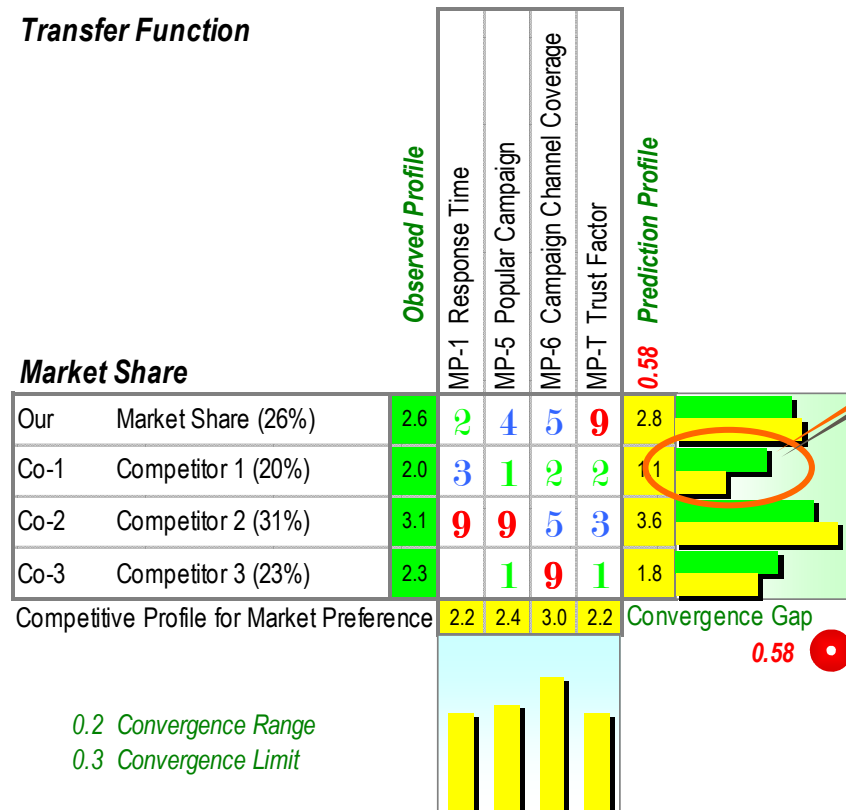
Removing Regional Links – deteriorates!

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Market Preference Transfer Function

Market Preference

Market Share



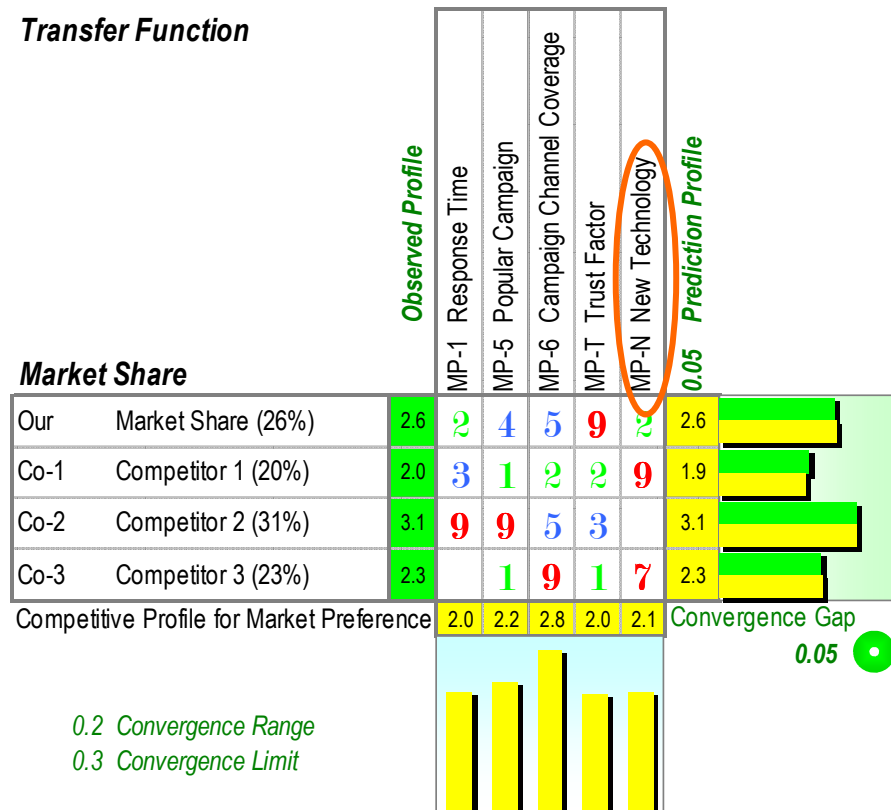
0.2 Convergence Range
0.3 Convergence Limit

Technology Factor – Best Explanation!

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Market Preference Transfer Function

Market Preference



Measurements

Success with your projects

Structured Methods

Product Development

Project Office

Proposal Management

Process Metrics

- 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	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Information Availability	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Regional Offices	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Regional Dialects	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Popular Campaign	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Campaign Channel Coverage	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

The Big Number Problem

Success with your projects

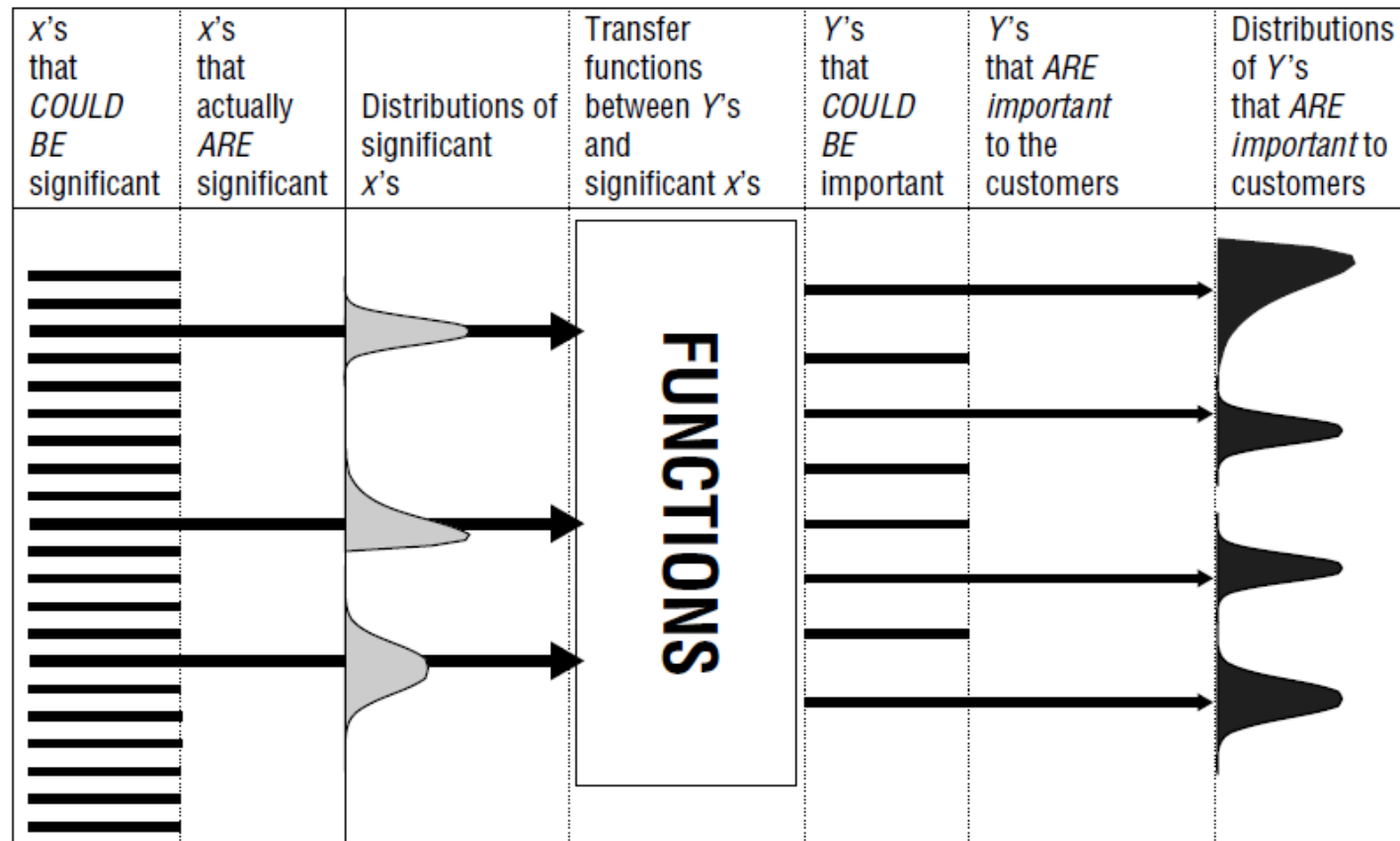
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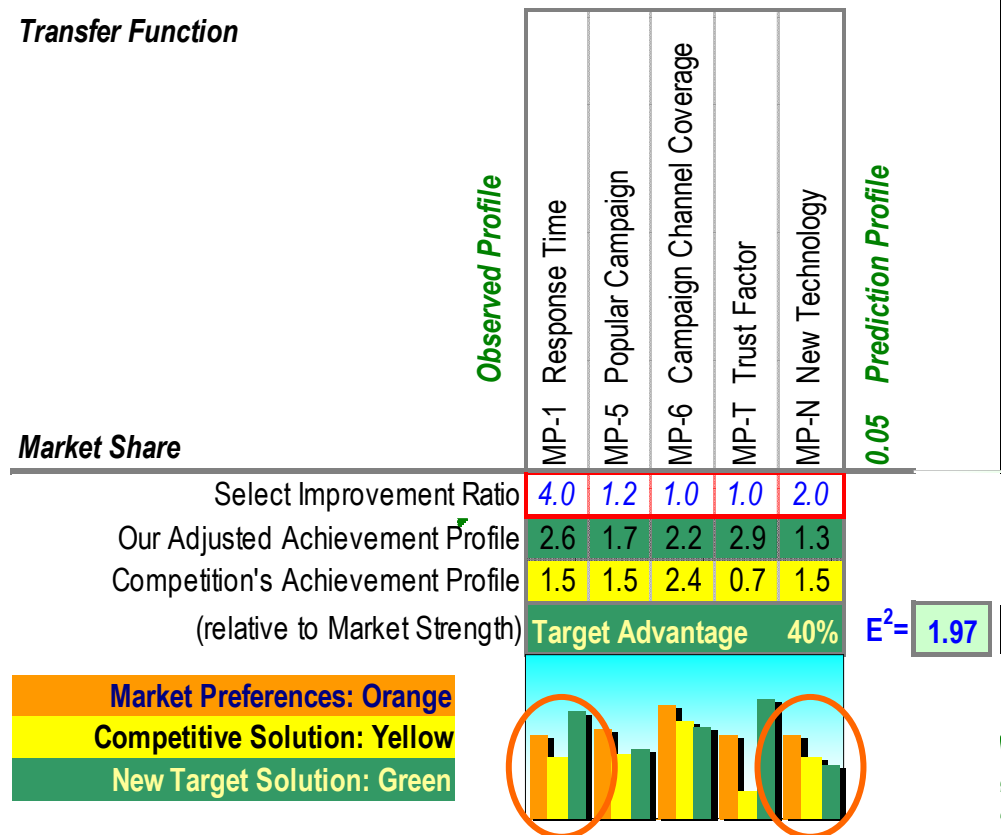
New Lanchester Theory

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- 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!

Market Preference Transfer Function

Market Preference



Questions?

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Backup

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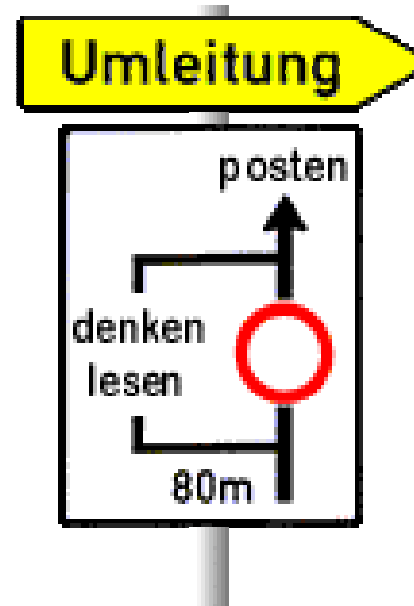
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Product
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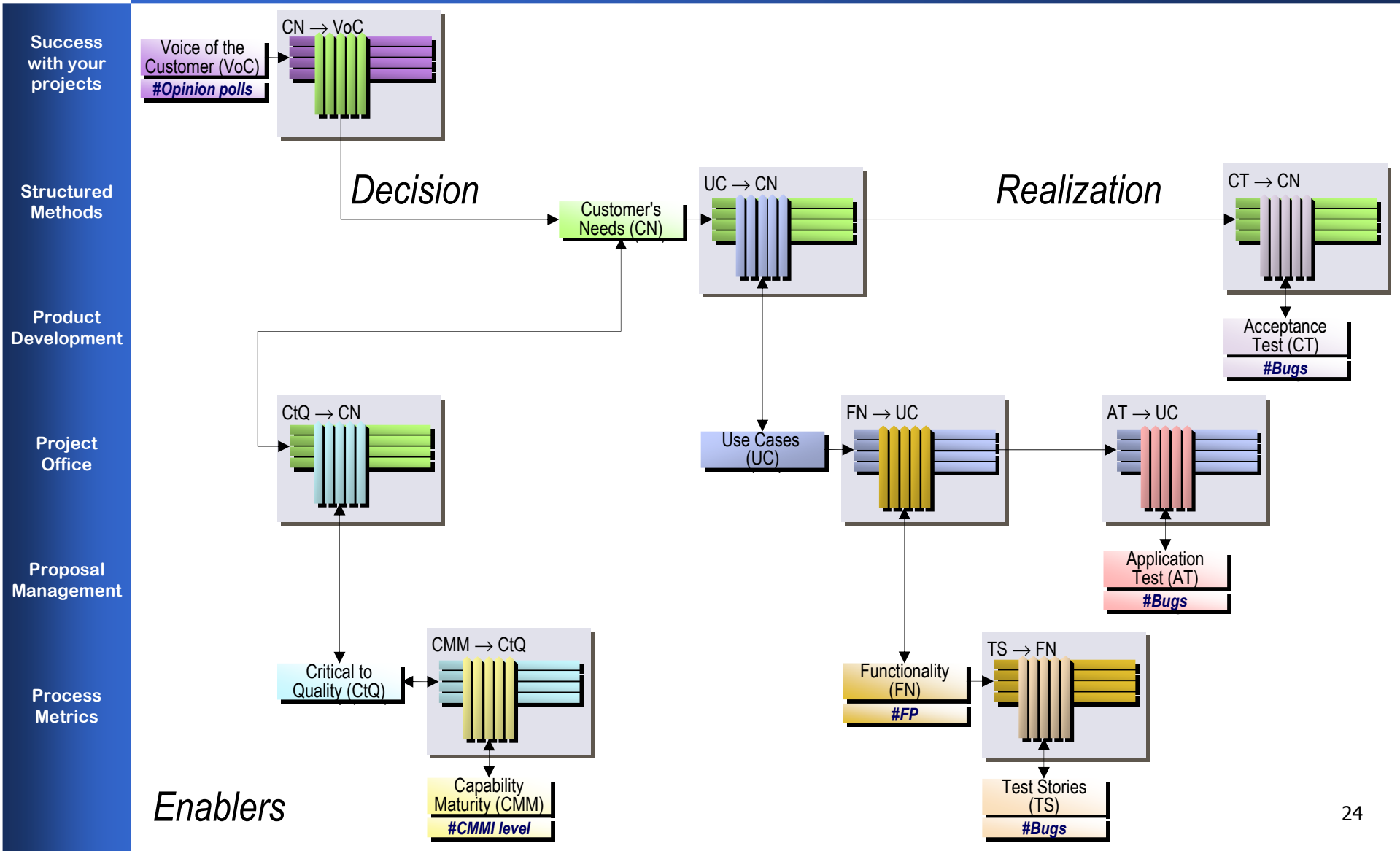
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Deming Value Chain for SW Development



Deming Value Chain for Product Development

