

Value chain management – Reviews from business practice and theoretical modeling

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1. Introduction
2. Co-operation differentiators
3. Field research
4. VCM co-operation model
5. Conclusions

1. Introduction

- Co-operation within value chain management
 - SCM, ECR and VMS differ in co-operation intensity
 - Optimal co-operation intensity maximizes total value chain profit (EBIT)

- Research set-up
 - Literature review
Introducing co-operation differentiators
 - Field research
Benchmarking vertical co-operation intensity
 - Modeling
Optimizing co-operation intensity to maximize total value chain profit

“Integrating existing concepts into one holistic approach“

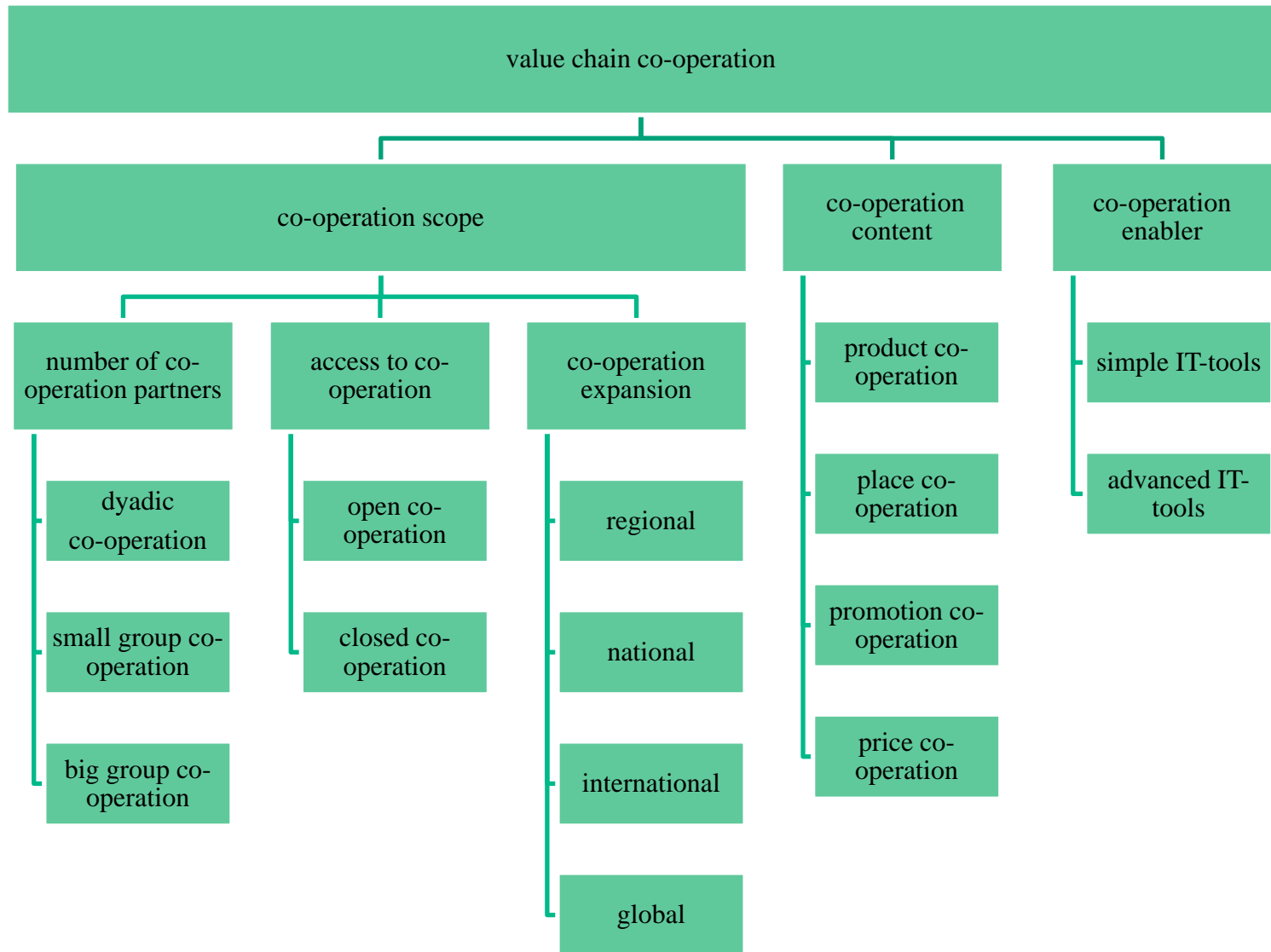
“Overcoming limitations of existing concepts“

2. Co-operation differentiators

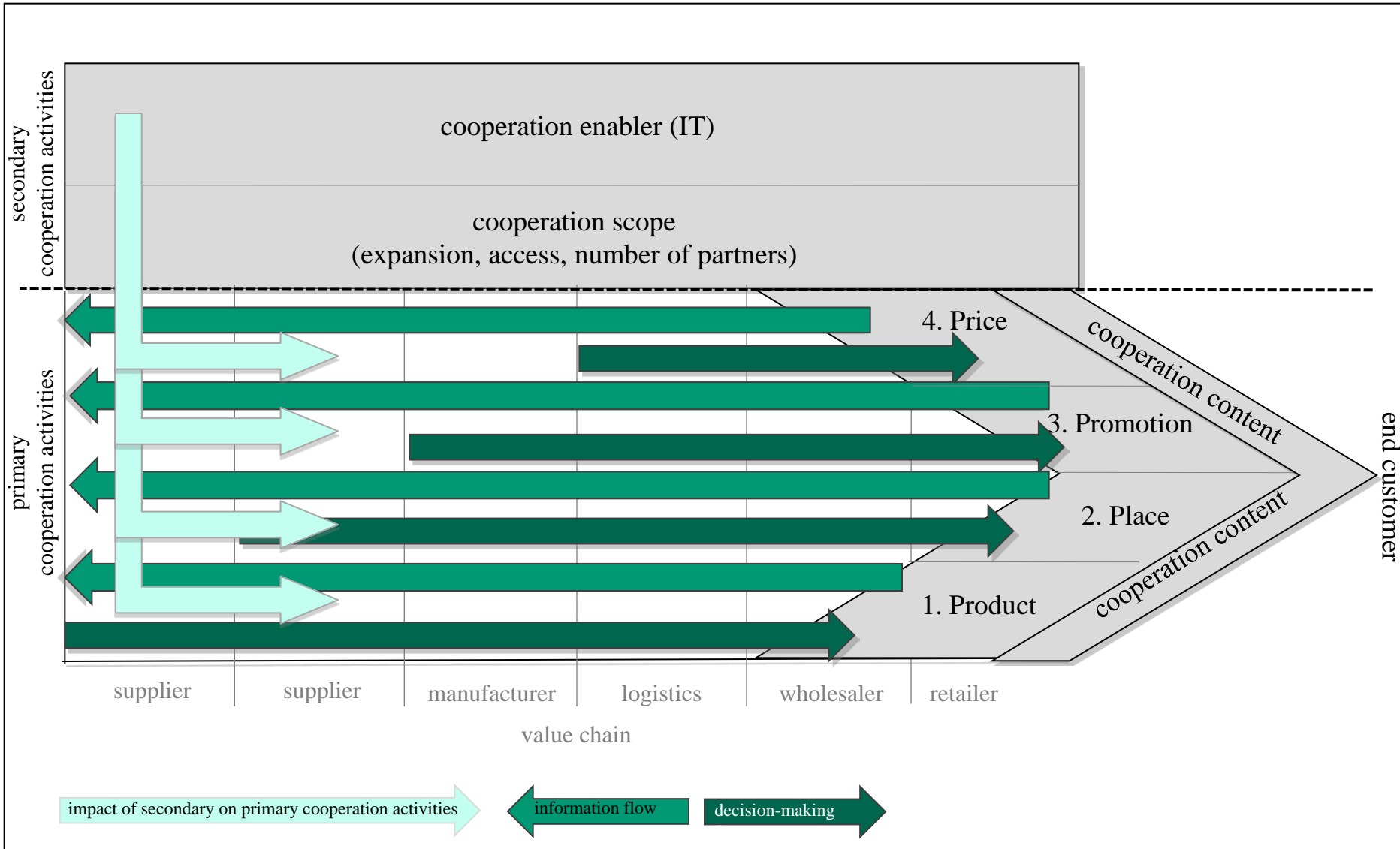
- Discussion of SCM, ECR and VMS is conducted separately
- No common structure
- Introduction of co-operation differentiators
 - “Artificial” structure
 - Reflect „common denominator“
 - Allow comparison

	Supply Chain Management	Vertical Marketing Systems	Efficient Consumer Response
<i>I. Cooperation Scope</i>			
Number of cooperation partners	Small group to big group cooperation depending on the number of firms in the supply chain	Dyadic cooperation	Small group to big group cooperation depending on the number of firms in the supply chain
Cooperation expansion	Local to global	Local to international	Local to international
(c) Cooperation access	Open	Open or closed cooperation possible	Open
<i>II. Cooperation Content</i>			
'Product' cooperation	-	Product Development, Product Design, Product Quality	Product introduction, Product development, private label product development
'Price' cooperation	-	Cooperative price recommendations, terms of conditions and delivery	-
'Promotion' cooperation	-	product promotion, product advertisement	Efficient promotion
Value chain design	Direct or indirect distribution	Indirect distribution	Direct or indirect distribution
Value chain planning	Collaborative Planning, Forecasting and Replenishment, Supply Chain Risk Management, Supply Chain Event Management	Order assistance, Inventory optimisation, production planning optimisation	Efficient assortment, category management, efficient controlling
Value Chain Operation	Interface optimisation	-	Efficient Replenishment, Efficient Administration, Efficient Sourcing, Vendor Managed Inventory, Cross Docking, Computer Assisted Ordering
<i>III. Cooperation Enabler</i>			
Information Technology	Electronic Data Exchange	-	Electronic Data Exchange, Enterprise Resource Planning System

2. Co-operation differentiators



2. Co-operation differentiators

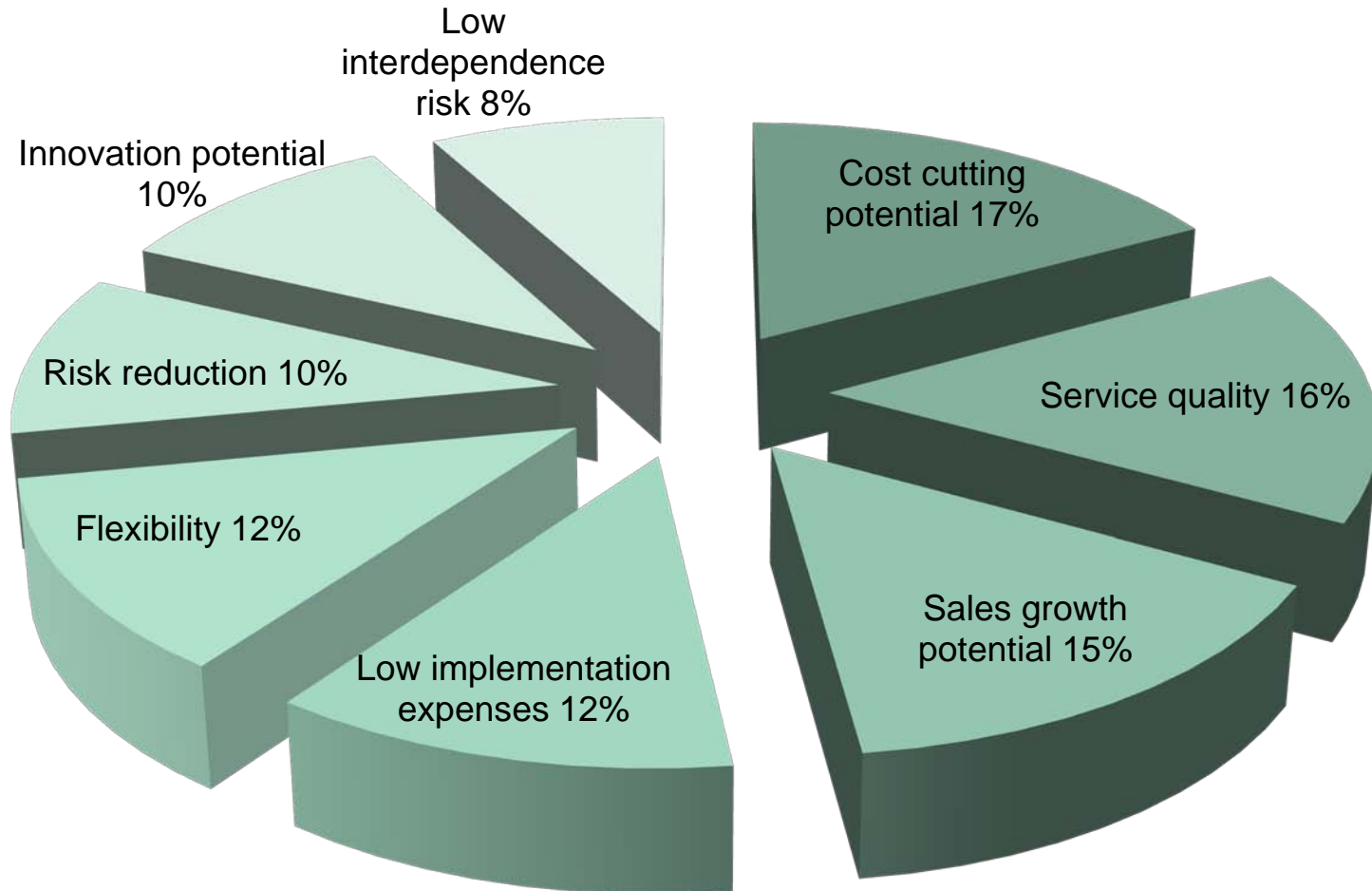


3. Field research

	supply chain management	low intensity concept	vertical marketing systems	medium intensity concept	efficient consumer response	maximum intensity concept
implementation expenses						
cost cutting potential						
sales growth potential	<p>Lower scores indicate better evaluation results</p>					
risk reduction						
interdependence risk						
flexibility						
innovation potential						
service quality						

- Set-up
 - 34 experts from 16 industries
 - March 2010
 - Interview with questionnaire
 - Importance of evaluation criteria
 - Evaluation of six concepts

3. Field research



- Winning concept
 - Benchmark: medium intensity concept
 - Scope
 - Four partners
 - International co-operation
 - Open co-operation
 - Content
 - Product
 - Promotion
 - Place
 - Enabler
 - Simple IT-tools
- Maximum intensity concept is second best concept
 - Expansion of co-operation content differentiator “price“

4. VCM co-operation model

Initial situation

- VCM co-operation in place
 - Scope: small group co-operation, international, closed
 - Content: product, place, promotion
 - Enablers: simple IT-tools

Decision problem:

Shall the existing co-operation be expanded from simple IT-tools to advanced IT-tools?

- VCM co-operation evaluation criteria
 - Cost cutting potential (variable costs)
 - Implementation cost (fixed costs)
 - Sales growth potential

4. VCM co-operation model

Function

$$f = e * 100,000$$

$f =$ Total fixed costs
 $e =$ Enabler co-operation (1)
 or
 non-co-operation (0)

Example

$$f = 1 * 100,000 \text{ EUR}$$

$$f = 100,000 \text{ EUR}$$

$e =$ Enabler co-operation (1)

4. VCM co-operation model

Function

$$o = 0.95 + \left(0.05 * \left(1 - \frac{e}{1} \right) \right)$$

$e =$ Enabler co-operation

$o =$ Co-operation multiplicator
total variable value chain cost

Example

$$o = 0.95 + \left(0.05 * \left(1 - \frac{1}{1} \right) \right)$$

$$o = 0.95$$

$e =$ Enabler co-operation (1)

4. VCM co-operation model

Function

$$v = \left(\sum_{i=1}^I \sum_{j=1}^J c_{j,i} * d \right) * o$$

- $v =$ Total variable costs
- $i =$ Number of companies in the value chain
- $j =$ Cost centers per company
- $d =$ Total value chain sales volume (units)
- $o =$ Cost saving percentage

Example

$$v = (1.200.000 \text{ EUR}) * 0.95$$

$$v = 1.140.000 \text{ EUR}$$

- $i =$ 3 companies in the value chain
- $j =$ 4 cost centers per company
- $d =$ 100,000 units
- $o =$ 0.95

4. VCM co-operation model

Function

$$q = 1.05 - \left(0.05 * \left(1 - \frac{e}{1} \right) \right)$$

$e =$ Enabler co-operation

$q =$ Co-operation multiplier
earnings

Example

$$q = 1.05 - \left(0.05 * \left(1 - \frac{1}{1} \right) \right)$$

$$q = 1.05$$

$$e = 1$$

4. VCM co-operation model

Function

$$m = p * d * q * -v - f$$

- $p =$ End-product price
- $d =$ Total value chain sales volume (units)
- $q =$ Co-operation multiplier earnings
- $v =$ Total variable costs
- $f =$ Total fixed costs

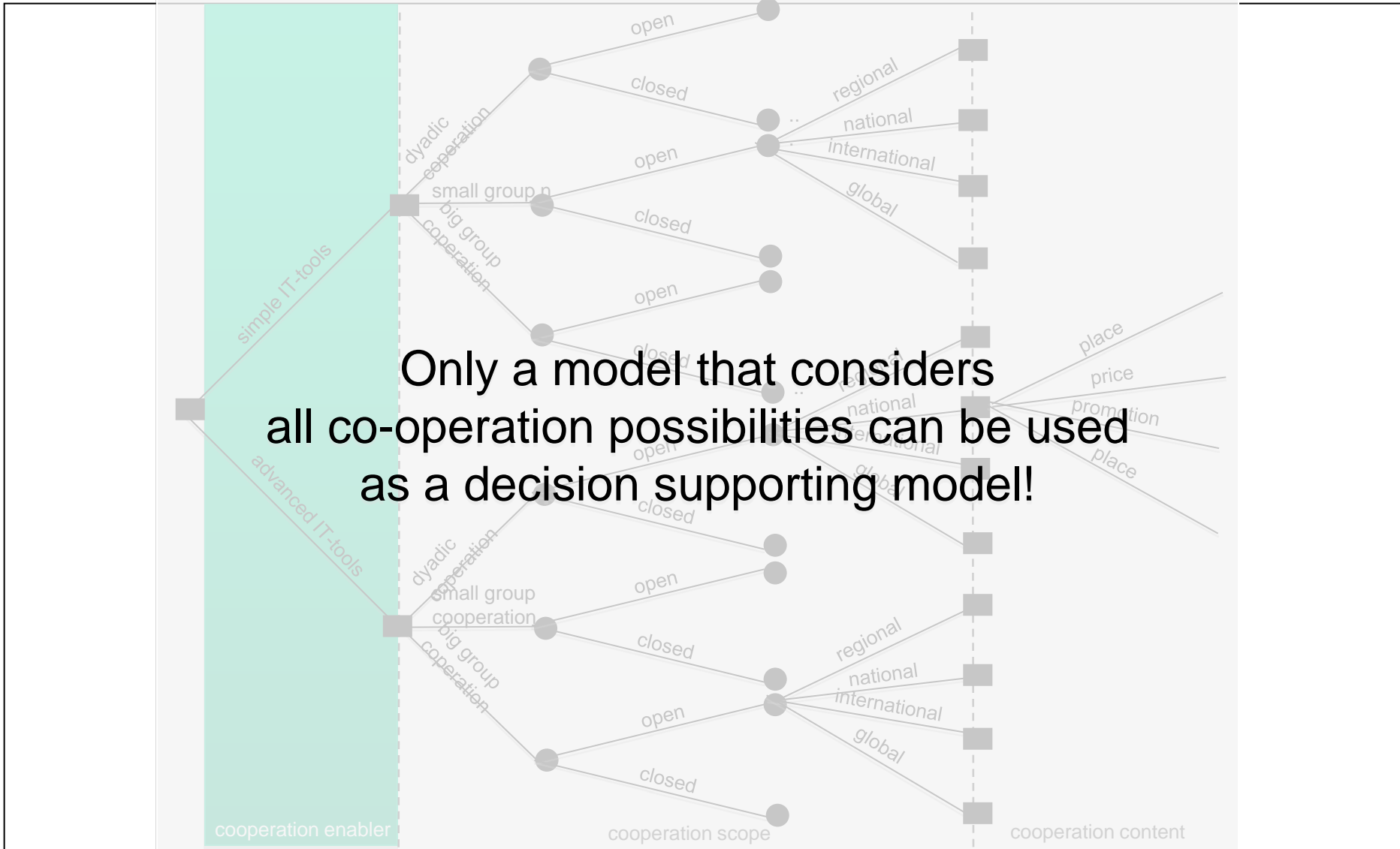
Example

$$m = p * d * q * -v - f$$

$$m = 125.000 \text{ EUR}$$

- $p =$ 13 EUR
- $d =$ 100.000 units
- $q =$ 1.05
- $v =$ 1.140.000 EUR
- $f =$ 100,000 EUR

- Field research
 - VCM needs to go beyond existing co-operation concepts
 - Co-operation content “price“ to be included
- Modeling
 - Innovative model linking co-operation intensity to total value chain profit
 - Basic structure to be extended in future research
 - Restrictions to be resolved
 - Nonlinear algorithm
 - Dynamic time frame



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Thank you for your attention.

