

The 'Daedalos Principle' of Innovation Management: The Role of Mindset, Systematic Approaches & Diffusion

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Cruise Research Society

DAEDALOS & ICARUS

The Birth of Innovations are Problems... originating from Solutions!



Source: <http://ultramagicforest.blogspot.de/2012/03/cautionary-tale.html>

The Innovative Mindset:

Money cannot buy innovation... But enables it!

► Daedalos:

- Was a skilful craftsman (Resources & Know how)
- Had always a strong motive for his inventions (Problems)
- His inventions were triggered by previous inventions (Evolution)
- He faced numerous difficulties and suffered consequences (Obstacles)

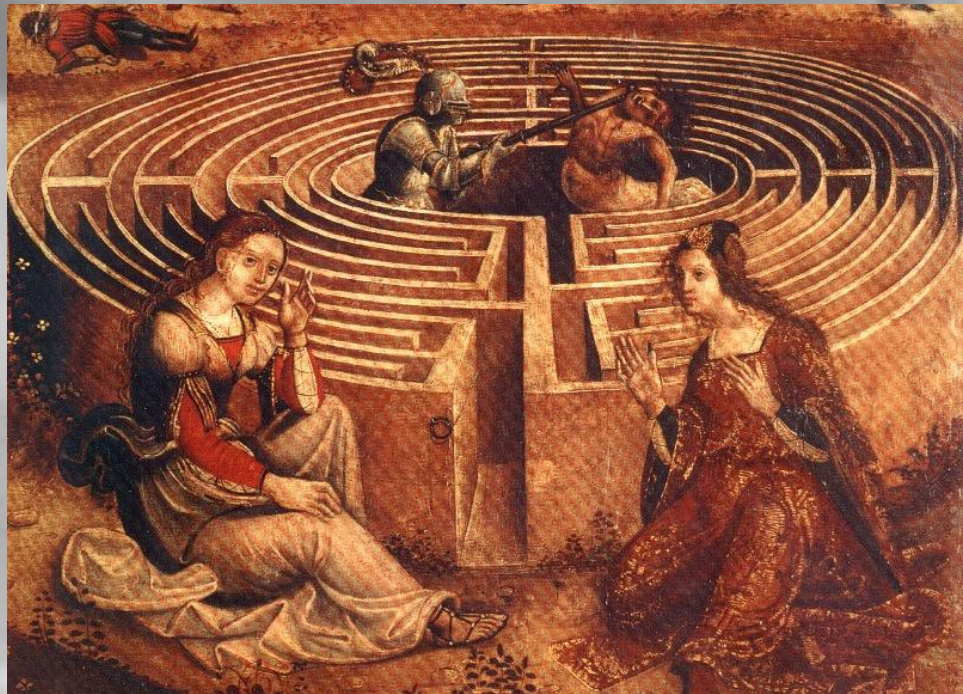
Financial Resources

Emotional Resources
(Patience,
Persistence,
Perseverance)

“Great innovators had a skill and a desire... The rest was a history of **failures**. Coming up with something new is fairly easy; **Implementing** it and making it a success is the real challenge.
Innovation is NOT just Ingenuity!”

DAEDALOS & THE LABYRINTH


Embracing and Dealing with Complexity... Systematic Approaches beyond Brainstorming



Source: <http://ovidsmetamorphoses.blogspot.de/2012/02/daedal-fates-of-icarus.html>

Systematic Approach for Identifying Innovation Possibilities

▶ Chan Kim, W. & Mauborgne, R. (2000)

- Study of approx. 100 companies, which have innovated repeatedly
 - *Database*
 - *Data collection of product and service innovations*
 - *Data collection on displaced products and services*
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▶ ***What is the likelihood that the customers will be attracted to the new idea?***

- The “Buyer Utility Map”

▶ ***What price will unlock the greatest number of customers?***

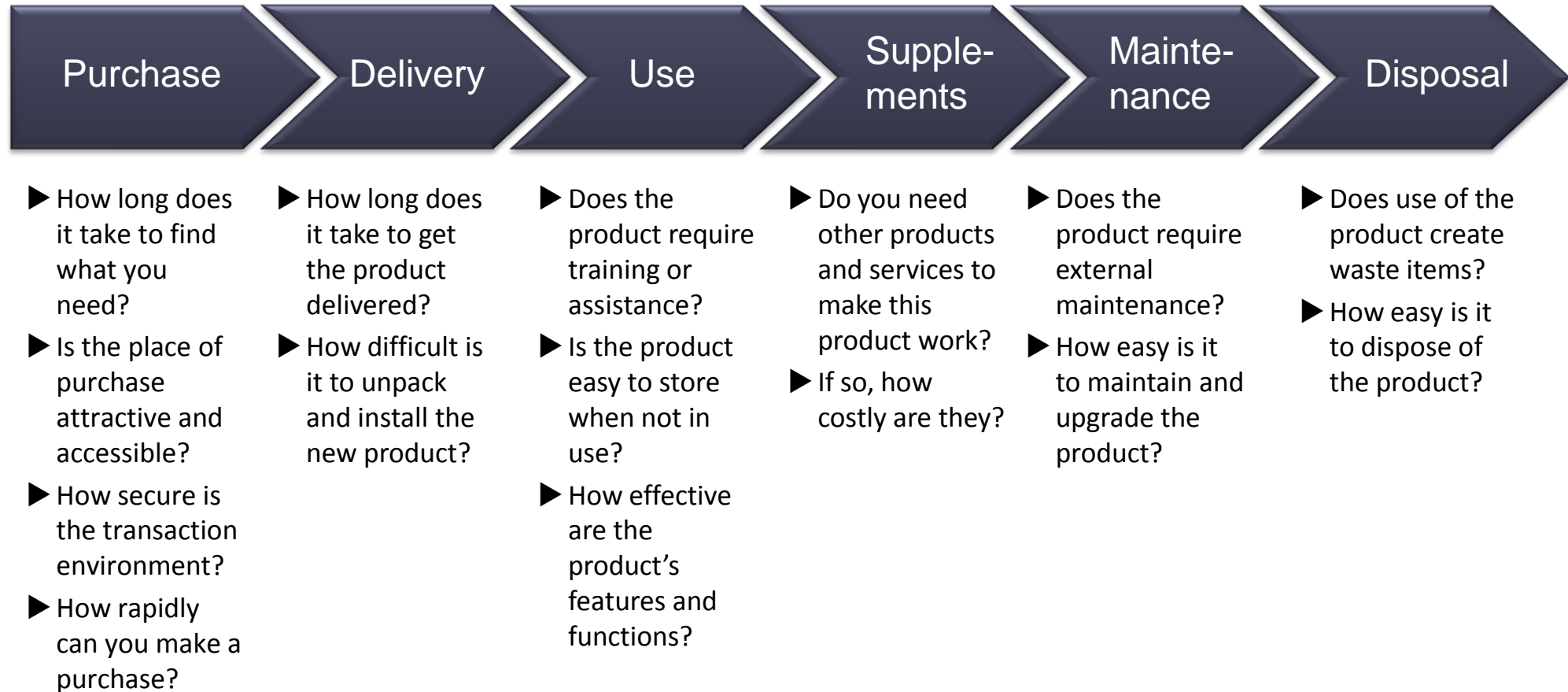
- “The Mass Price Corridor”

▶ ***How can a company profitably deliver the new idea in the market at the targeted price?***

- “Business Model Guide”

Buyer Utility Map: The Right Product...

The Buyer Experience Cycle



Buyer Utility Map: The Right Product...

Utility Levels in The Buyer Experience Cycle

Buyer Utility Levels

Buyer-Experience Cycle

	Purchase	Delivery	Use	Supplements	Maintenance	Disposal
Customer Productivity	ABC	Same Utility Lever at another stage				
Simplicity	New Utility Lever at the same stage					
Convenience			New Utility Lever at another stage			
Risk						
Fun & Image						
Environmental-Friendliness						

Buyer Utility Map: The Right Product...

Framework Evaluation



Advantages:

- It imposes a market-focus on innovation consideration (i.e. How can we improve the lives of our customers?)
- It helps differentiate between simple offering extensions and genuine innovations
- Even though even the most innovative companies occupy just a small number of spaces... There is a total of 36. This reminds people of the unexploited potential for innovation



Shortcomings:

- Does not readily apply to services (this contains the buyer's experience for products) -> Requires adaptations to become applicable for services
- Buyer utility is not easily measurable / determined PLUS it depends on the customer
- Implied assumption is that the Buyer is a constant entity... Innovation is not limited to giving the existing customer something new, but also about locating new customers and / or markets!

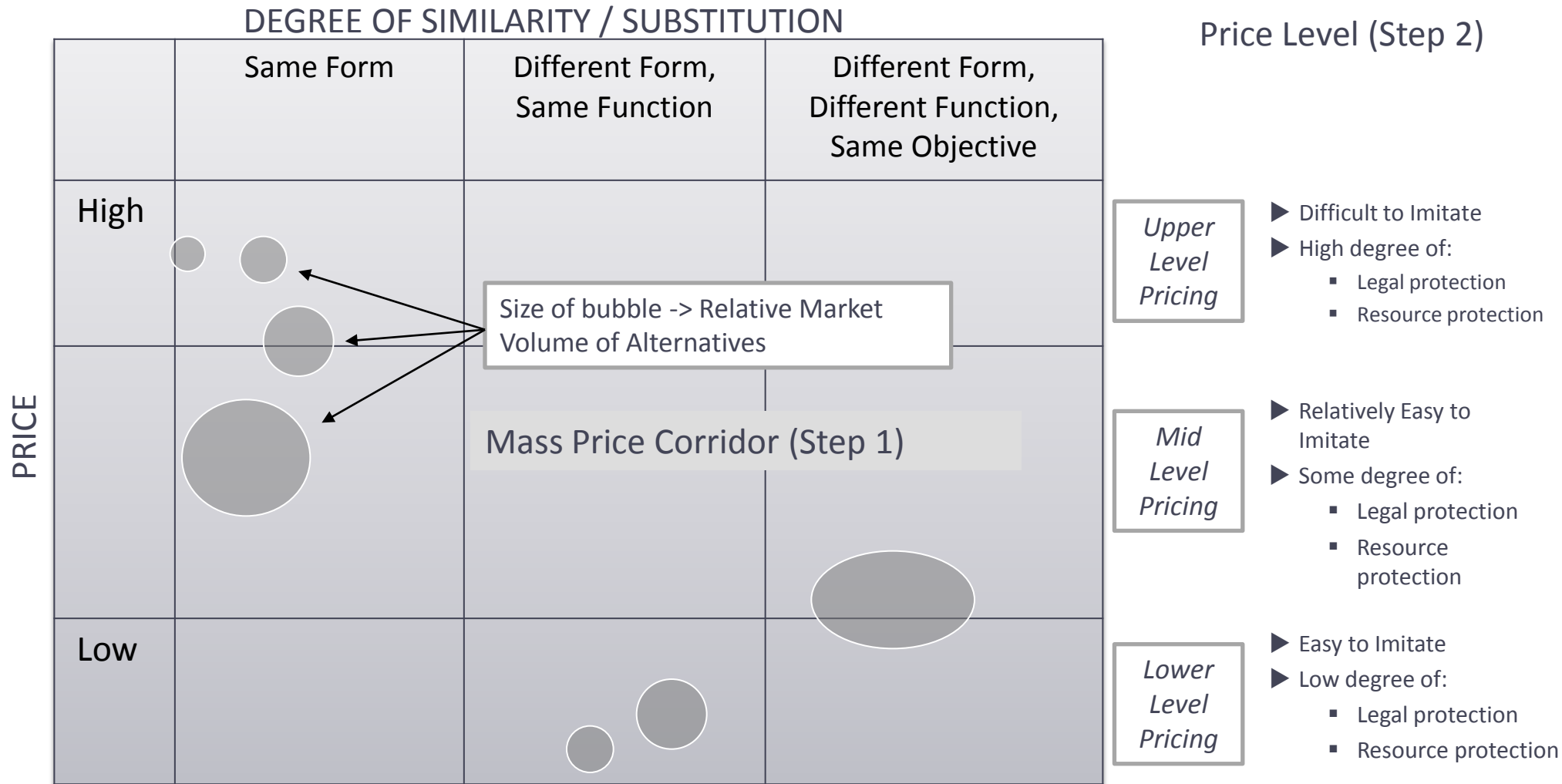
Mass Price Corridor: The Right Price...

The Need For An Early Critical Mass

- ▶ Creating exceptional utility for the customer is not a guarantee for success... The **right price** is also a key factor!
- ▶ Even though it is possible (and sometimes advisable) to test a new product / service with the novelty-seeking, price-insensitive customers, this is also not enough
- ▶ **“Early critical mass”** is necessary (esp. nowadays) because of the following reasons:
 - Economies of scale:
 - *Are necessary to cover the high-costs of innovation-development*
 - Network externalities:
 - *The value of a number of products or services depend on the total number of people using them (all-or-nothing proposition)*
 - Customer sustainability:
 - *Many innovations are relatively easy to imitate and cannot be realistically protected by patents, copyrights, etc.*
 - *This means that customers need to be convinced from the very beginning that they will not find a better value with a competitor*

Mass Price Corridor: The Right Price...

Strategic Pricing



Business Model Guide: The Right Setup...

Idea Realisation

- ▶ The right product at the right price is not necessarily sustainable competitive advantage
- ▶ A **good business model** is a powerful defence against imitation:
 - **Cost Target:**
 - *Is it set by the strategic price?*
 - *Can the product's raw materials be replaced by unconventional, less expensive ones?*
 - *Did you significantly eliminate, reduce and outsource high cost, low-value-added activities in your value chain?*
 - **Partnerships:**
 - *What capabilities do you need to achieve the value proposition, and which ones do you lack?*
 - *Which companies have the missing capabilities?*
 - *Based on cost, quality, and speed, should you acquire those companies or partner with them?*

Business Model Guide: The Right Setup...

The Need For An Early Critical Mass

■ Pricing Model:

- *Is your industry's pricing model a barrier to your business idea's success?*
- *What pricing model: direct selling, leasing, time-share, slice-share, or equity payment, would create a greater profit pool*

Evaluating Business Ideas (Summary):

The right product with the right price, from the buyer's perspective... And the right business model for: delivering it and sustaining innovative advantage.

DAEDALOS & MINOS

Dealing with Innovation Obstacles... Diffusion & Forecasting



Source: <http://monkeysinthecupboard.edublogs.org/>

Innovations of “Epidemic Proportions”

Reaching The Tipping Point

► Tipping Point (the point where a the possible become certain):

- Decisive moment / event
- Critical mass
- Threshold
- Boiling point

► **Epidemics Analogy:**

- Applied to innovations (ideas, products, concepts, etc.)
- Innovations can spread geometrically like viruses provided that the following conditions are in place:
 - *Contagiousness (Messenger Function)*
 - *Resilience (Message Property)*

► Implied message is that:

- Innovation adoption is fairly easy to initiate (tipping point) provided resources are concentrated in the right activities

Contagiousness

The “Law Of The Few”

- ▶ The most effective communication medium for starting “epidemics” is:

Word-to-mouth

- ▶ Starting an epidemic does not require many... But only a few individuals

Connectors (To Spread The Message):

- Know a lot of people (many acquaintances – not necessarily “good friends”)
- Have an extensive social network
- Charismatic at making and maintaining relationships

Mavens (To Provide The Message)

- Information specialists
- Willing to share and communicate what they perceive as a good idea
- Gain genuine satisfaction by helping others solve their problems

Salespeople (To Strengthen The Message)

- Persuasion artists
- Focus on detail
- Sophisticated communication skills (incl. use of body language)

Contagiousness & Resilience

Some Key Metrics

“Monkeysphere”:

- **Contagiousness Key Metric (150)*:**
 - After several anthropological studies, Robin Dunbar concluded the max group size for humans is **147.8**
 - This represents the maximum amount of people that we can have a real social relationship with (i.e. knowing who others are and their relationship to us)

* Dunbar, R. (1992) *Neocortex size as a constraint on group size in primates*, Journal of Human Evolution, vol. 20, pp. 469-493.

“Magical Seven”:

- **Resilience Key Metric (7)**:**
 - Psychologist Miller concluded after experiments that there are limitations on the amount of information that we are able to receive, process, and remember
 - To deal with this we organise information multi-dimensionally and successively into chunks
(max: **7±2**)

** Miller, G.A. (1956) *The Magical Number Seven, Plus or Minus Two: Some Limits on Our Capacity for Processing Information*, The Psychological Review, 1956, vol. 63, pp. 81-97

Revisiting The “Epidemic” Analogy

From “Epidemics” to “Flues”...

If we are to accept and entertain the ideas of Gladwell...

- ... If we were to innovate in today's world of:
 - Rapid technological advancement
 - Information overload
- Our innovations would have very small chances of becoming “epidemics”...
- ... In the best case, they could become a “flu”!

If trends ≈ “epidemics” and fashions ≈ “flues”, what does this mean for innovation?

Which in turn means:

- Mass-Innovation (e.g. idea factories, mass production of innovation)
- Utility-Impact (i.e. innovation must offer significant advantages to the user)
- Quick-Realisation (i.e. short development and production periods -> if duration is shorter, need to start making money earlier)
- Innovation-Repackaging (i.e. Repackaging an old idea / innovation and selling it as new -> Exploit full-potential)

It means that innovations have a shorter life-span (are displaced quicker)

Innovation Diffusion Model

Original Model (or Product Life Cycle)

■ Innovators (2.5%):

- Adventurous
- Well-educated
- Well-informed
- Well-off (usually)
- Risk-takers

■ Early Adopters (13,5%):

- Respectable
- Opinion leaders
- Popular
- Educated

■ Early majority (34%):

- Thoughtful
- Extensive social network

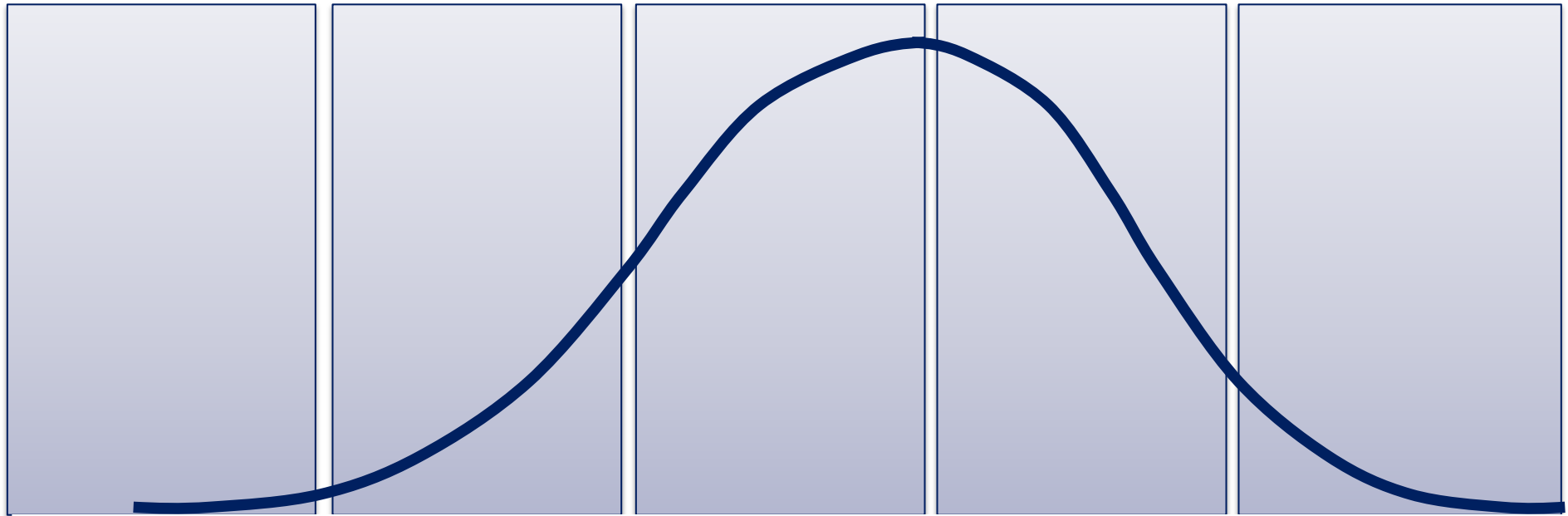
■ Late majority (34%)

- Sceptical,
- Traditional
- Lower social status

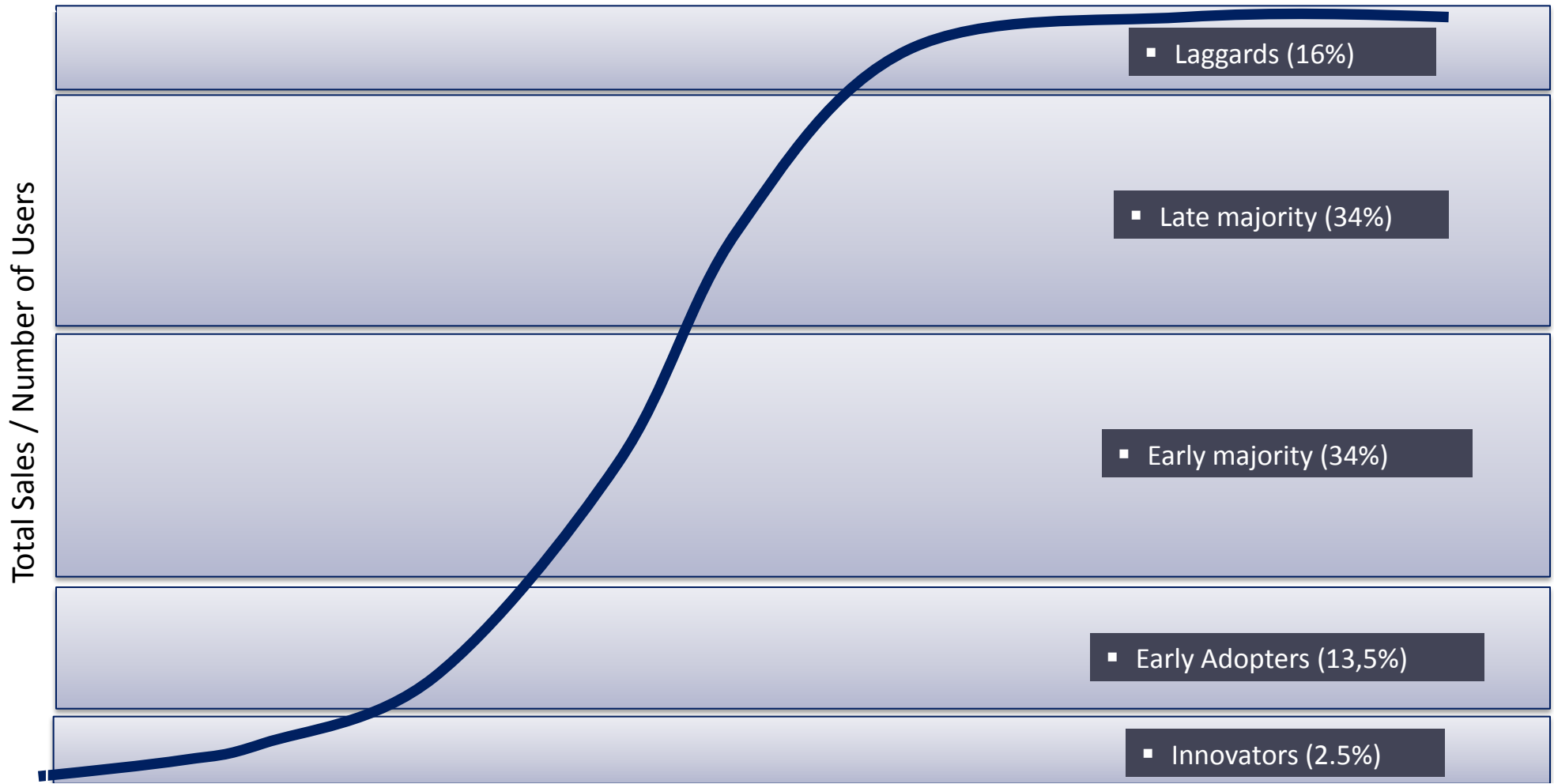
■ Laggards (16%):

- Traditionalists
- Limited info sources and network
- Risk-averse
- Lower economic status

Sales / Time Period

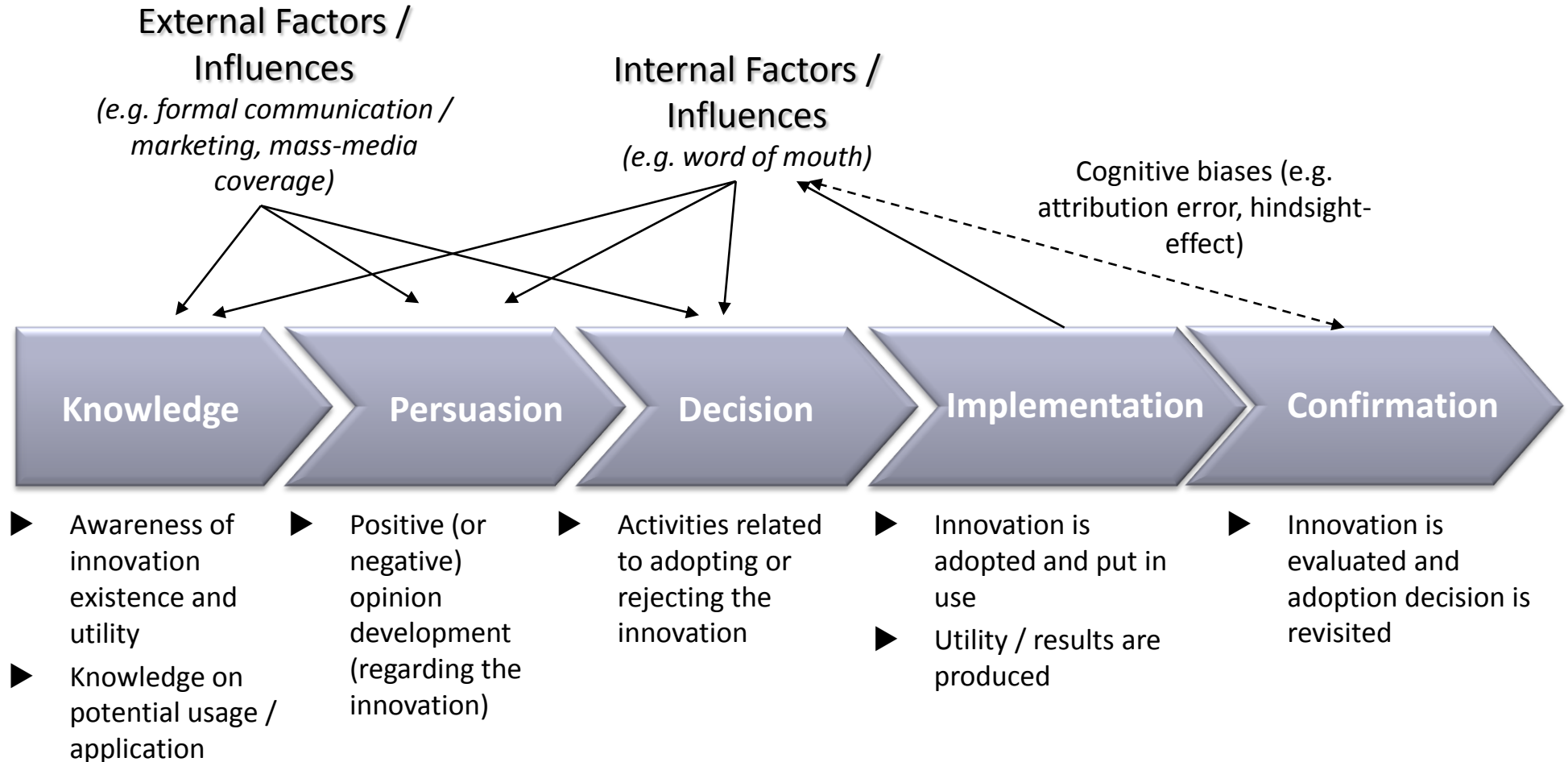


Innovation Diffusion Model Cumulative Version (S-Curve)



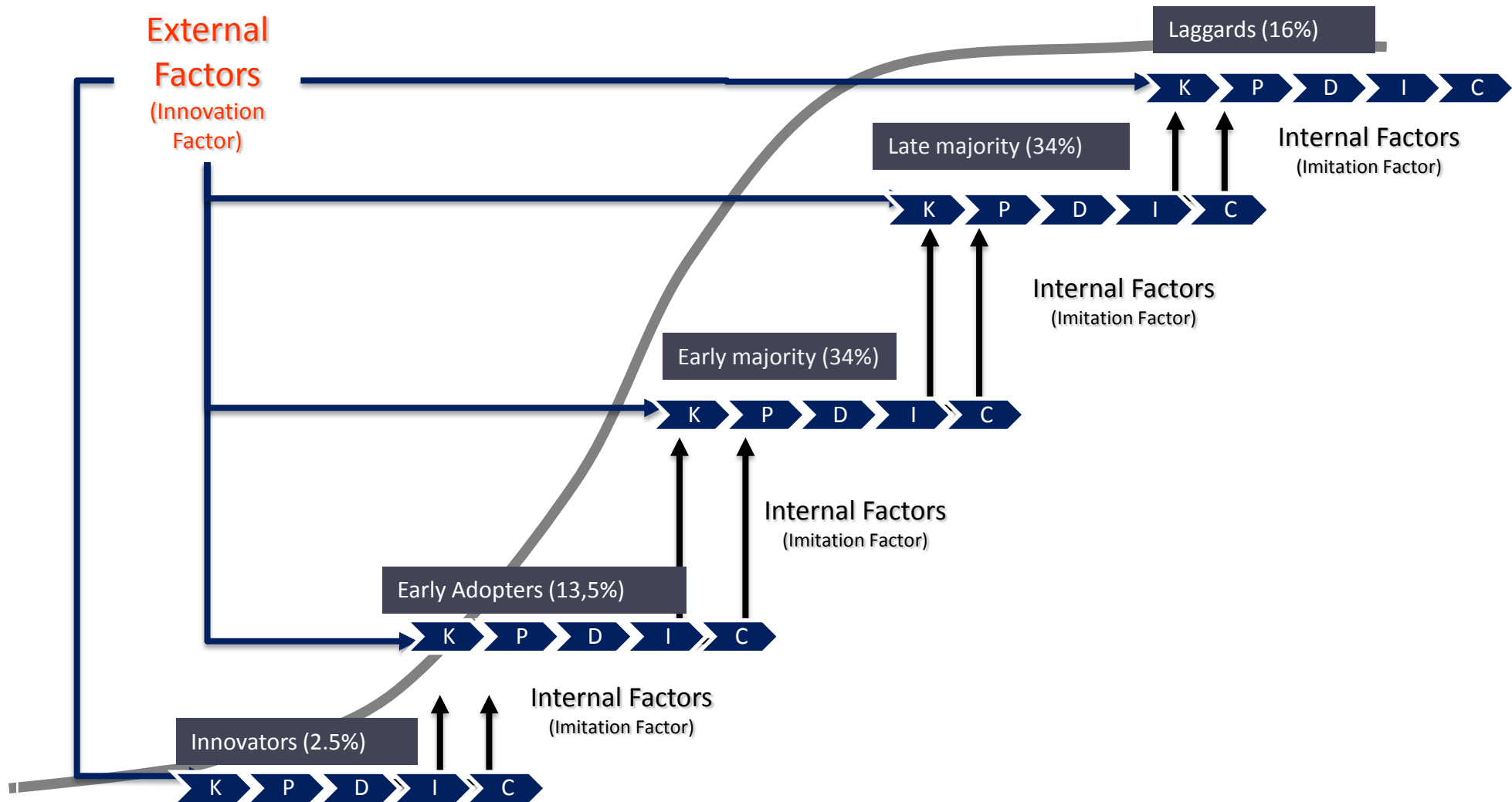
Innovation Diffusion Model

Individual Adoption Process



Innovation Diffusion Model

Innovation & Imitation Factor



Innovation Diffusion Model

Bass' Innovation Diffusion Formula

Innovation Factor /
External Influences



High Value = 0.38
Low Value = 0.03



Imitation Factor / Internal
Influences

$$N_t = N_{t-1} + p(m - N_{t-1}) + q \frac{N_{t-1}}{m} (m - N_{t-1})$$

Number of adopters
at time t (e.g. 2006)

Number of adopters
at time t -1 (e.g.
2005)

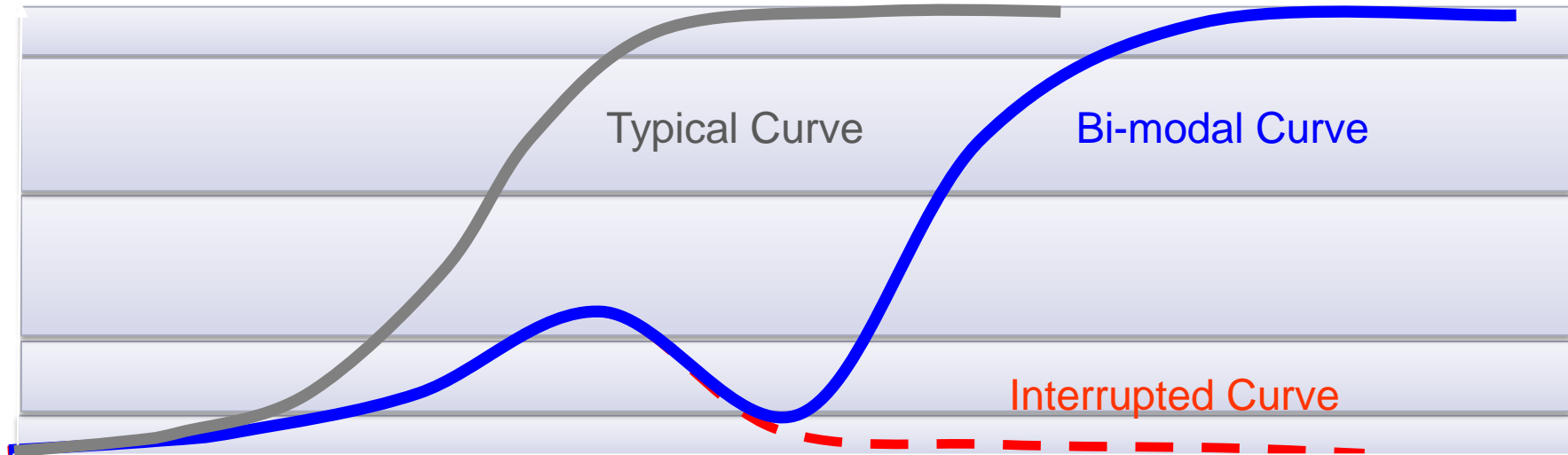
Market potential (total
size of target group)

**A “Bass-formula calculator” is available:
<http://andorraweb.com/bass/index.php>**

Diffusion Model: Points of Caution

► In practice, there are too many exceptions to the classical diffusion S-curve:

- Diffusion Interruption:
 - Due to another related disruptive innovation (which in turn starts its own diffusion curve)
 - It simply does not take off (user resistance, company / industry inertia, practicality / feasibility issues)
- Bi-Modal Diffusion:
 - Often it is observed that the first “version” of the innovation is not adopted, requiring a second “version” at a later point in time to make it successful
 - Timing issues
 - Follower advantage - Learning from the mistakes of the first mover



TEACHING INNOVATION

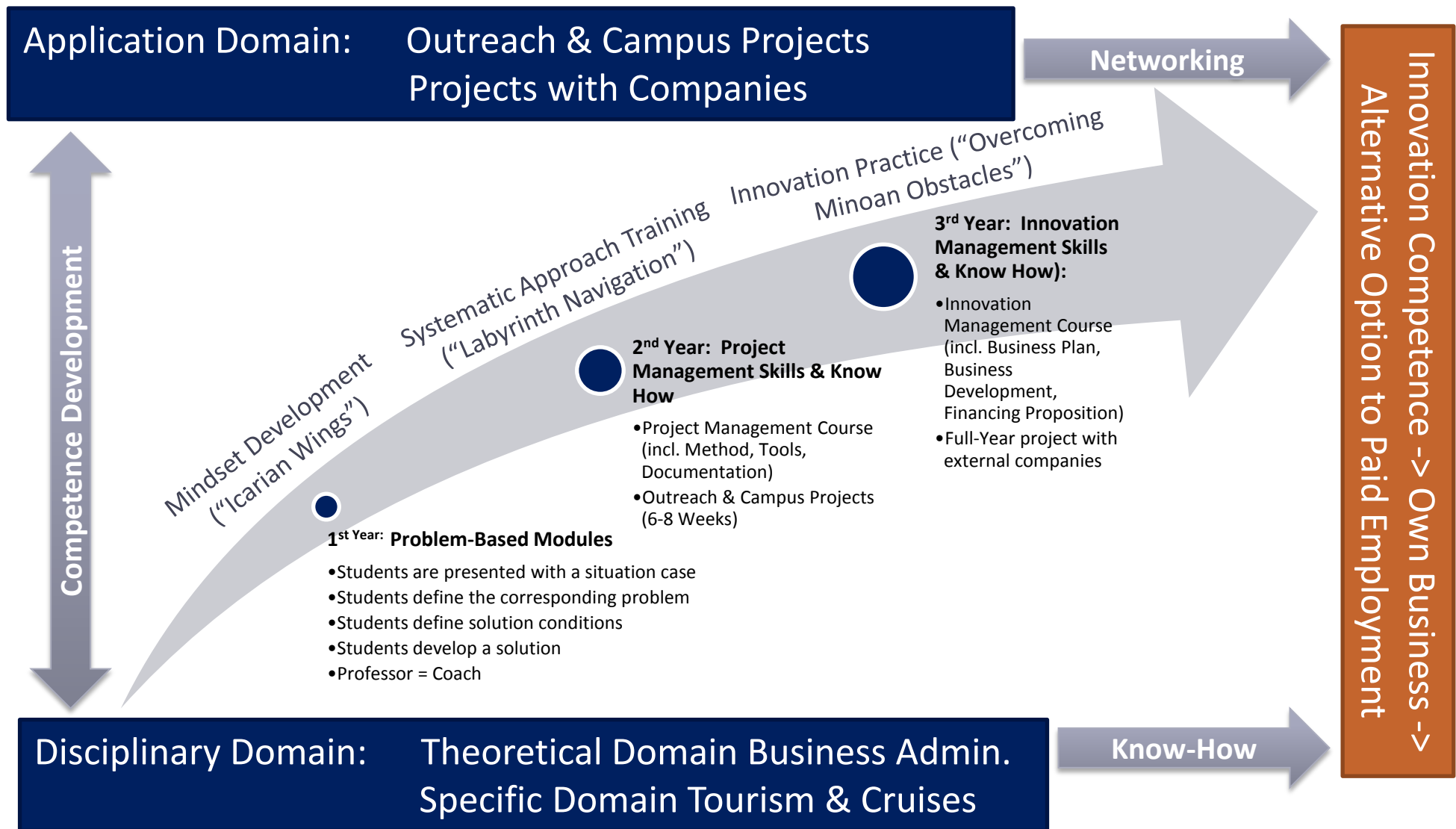
Problem-Based Learning & Project Management at the Bremerhaven University of Applied Sciences

Preisauflschlag als Spende

Hochschulstudentinnen sind sich sicher: Bremerhaven ist bereit für eine neue Spendenmethode



Educating for Innovation: From a Course in Entrepreneurship to Innovation Competence Development



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