



Integrated Innovation and Technology Management Portfolio Management

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**To explore
basic
knowledge
and
capabilities
on TIM**

**To present
approaches,
tools,
methods and
concepts
useful for
TIM**

**IITM: Integrated Innovation
and Technology
Management**

**Goals
of the
lecture**

Lecture Content

Theory

- Basic definitions
- Innovation management
- Technology management

Hands-on activities

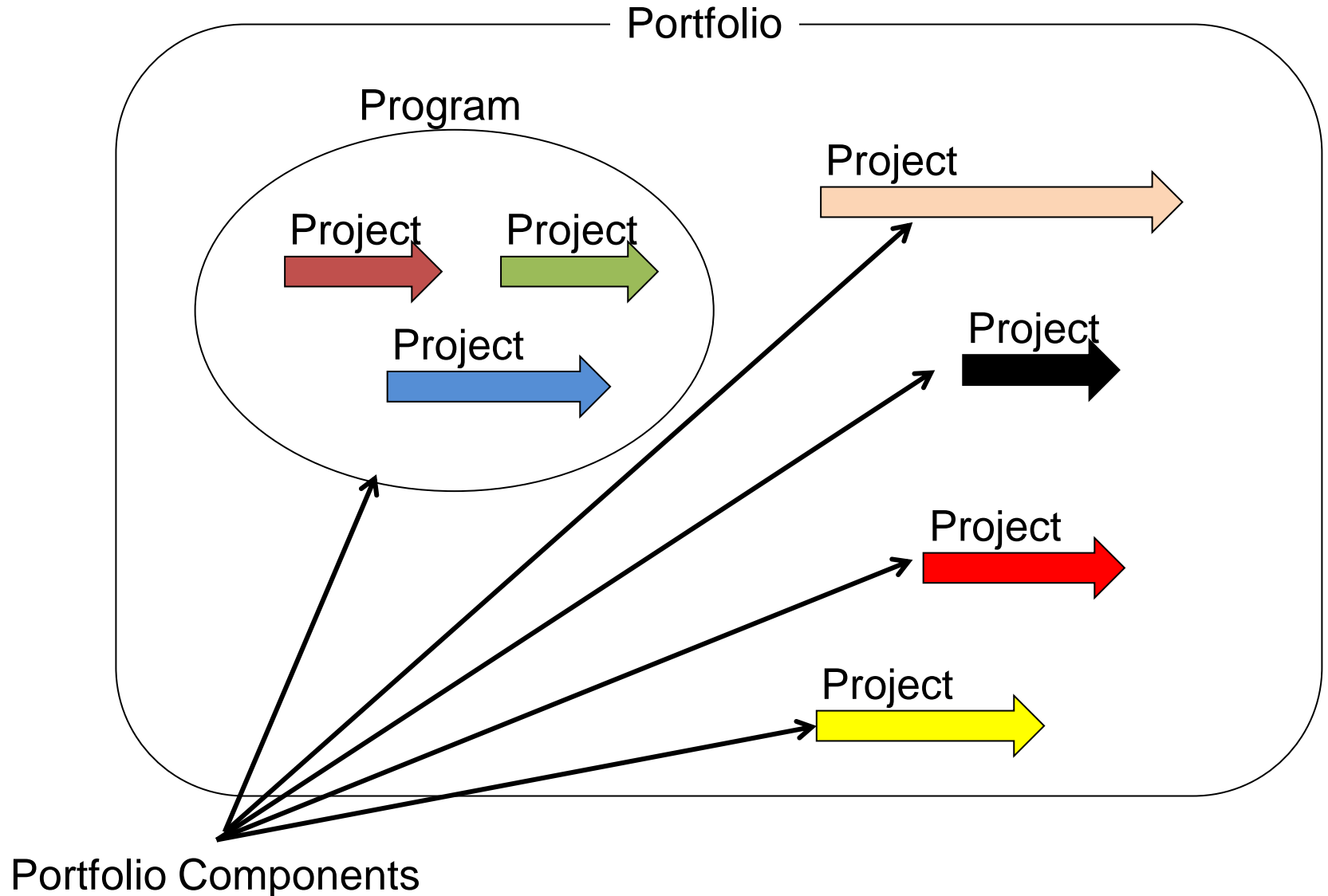
- Roadmapping
- Design thinking (value proposition)
- Portfolio management
- Business Model Innovation

Integrated technology and innovation management (TIM)

What is a portfolio of
(innovation) projects?



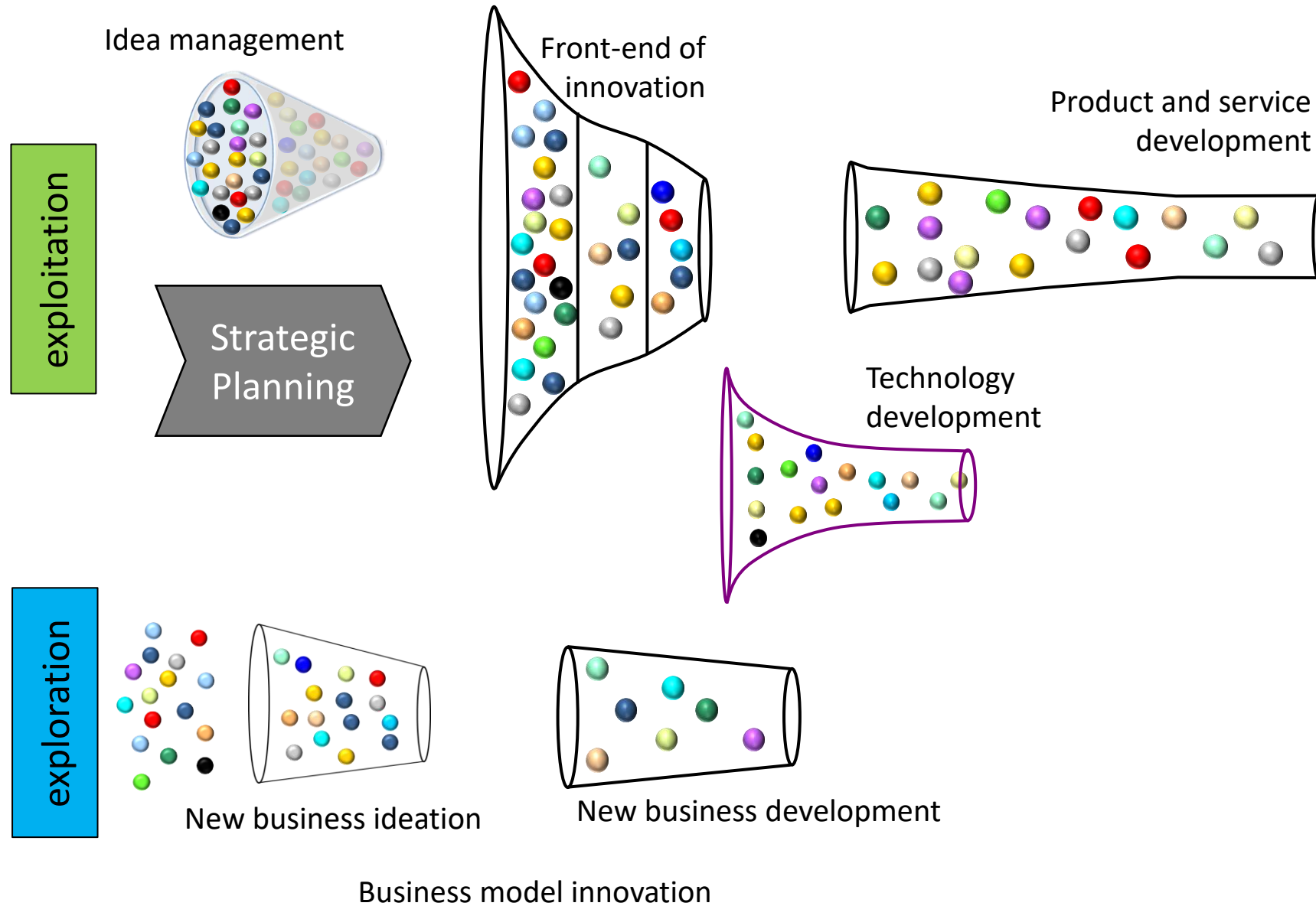
Definition of portfolio of projects and/or programs



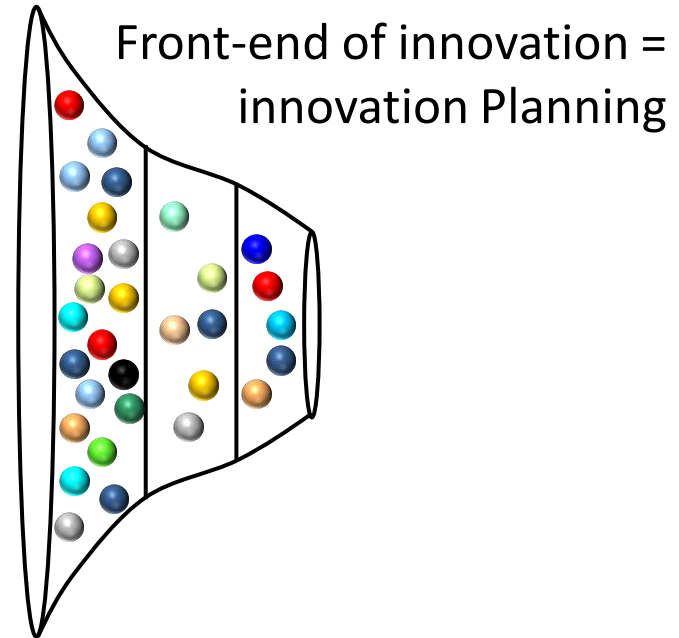
Where is the innovation planning? (not portfolio planning)



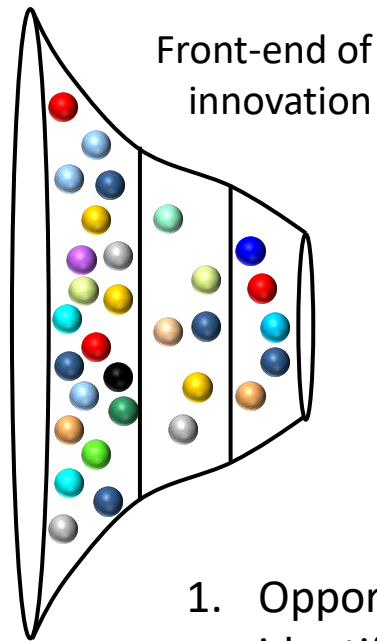
Main innovation processes



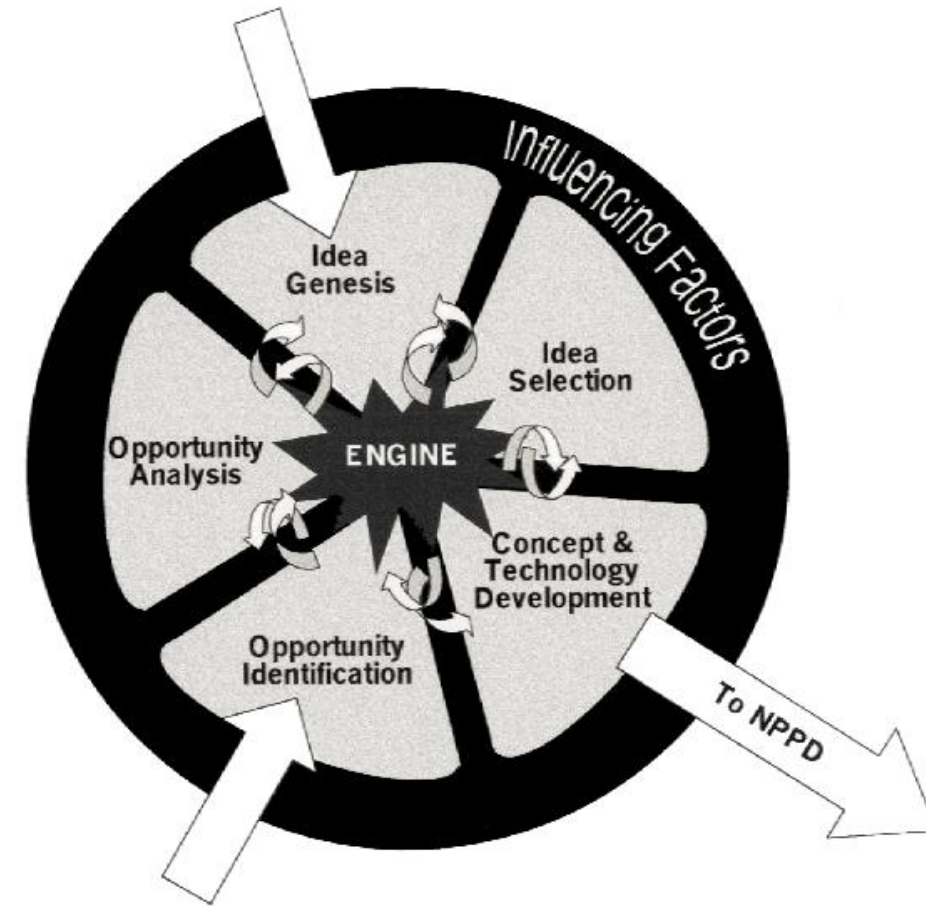
Main innovation processes



Example of fuzzy front-end model

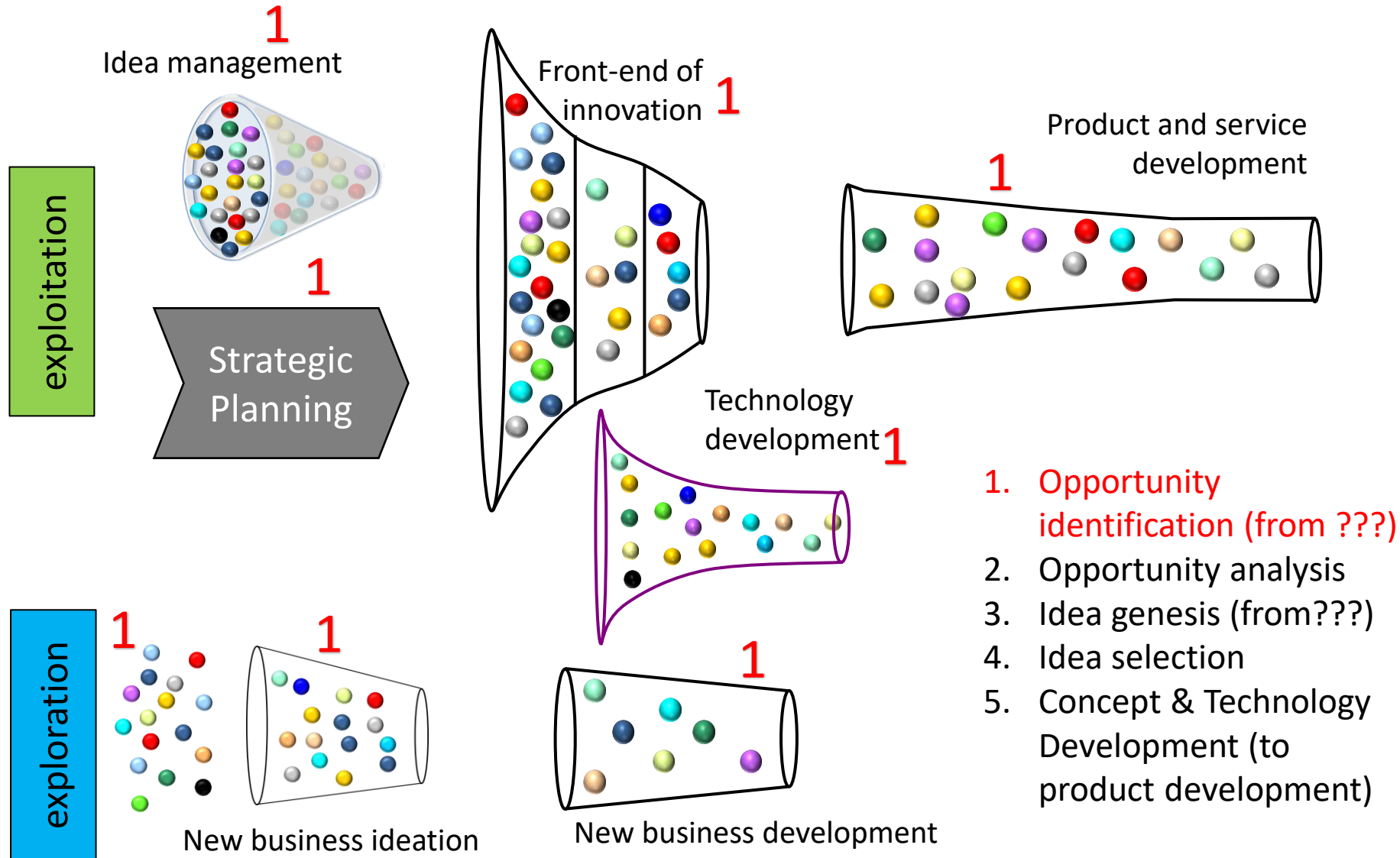


1. Opportunity identification (from ???)
2. Opportunity analysis
3. Idea genesis (from???)
4. Idea selection
5. Concept & Technology Development (to product development)



NPPD: New Product and Process Development

Main innovation processes

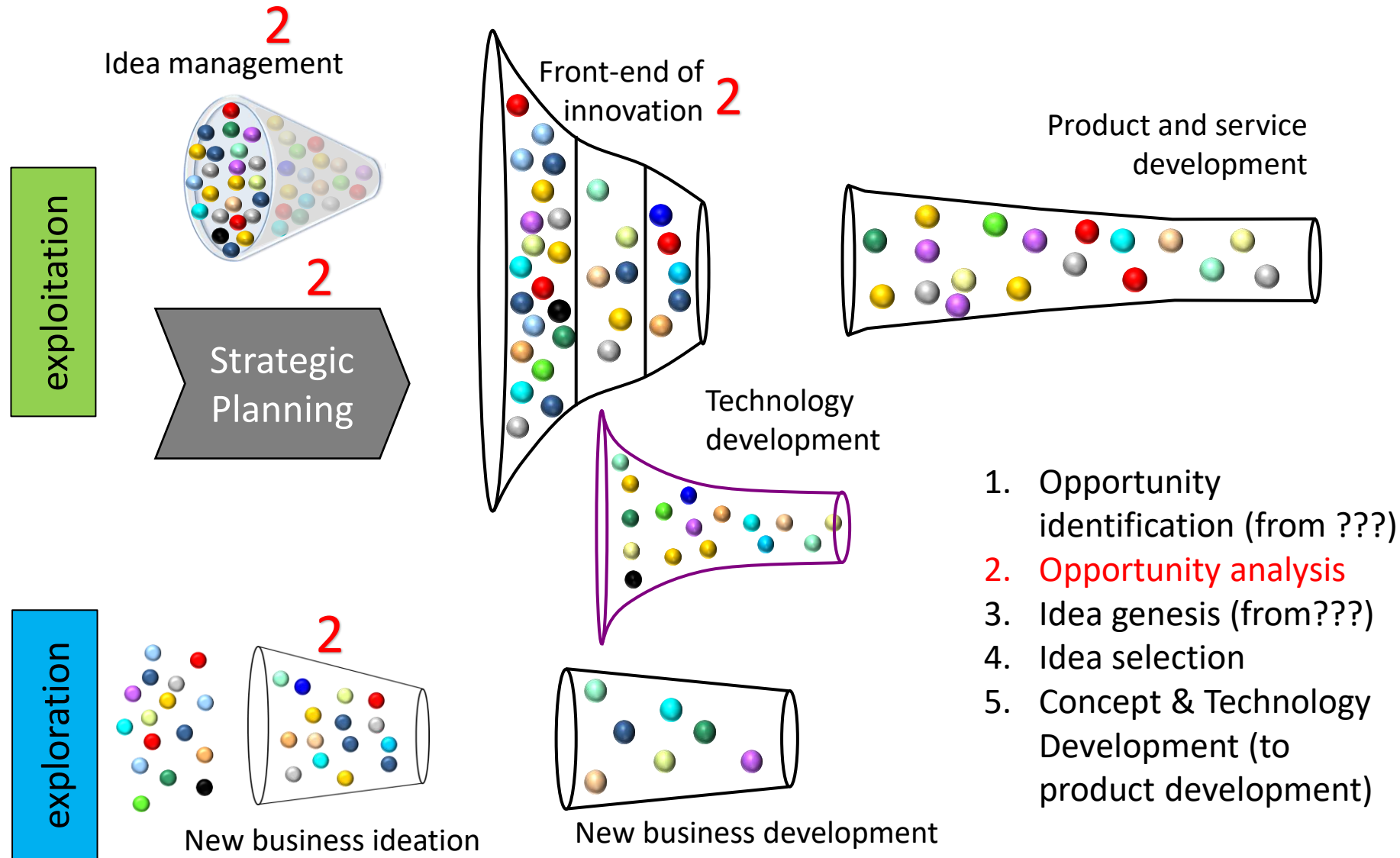


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Business model innovation



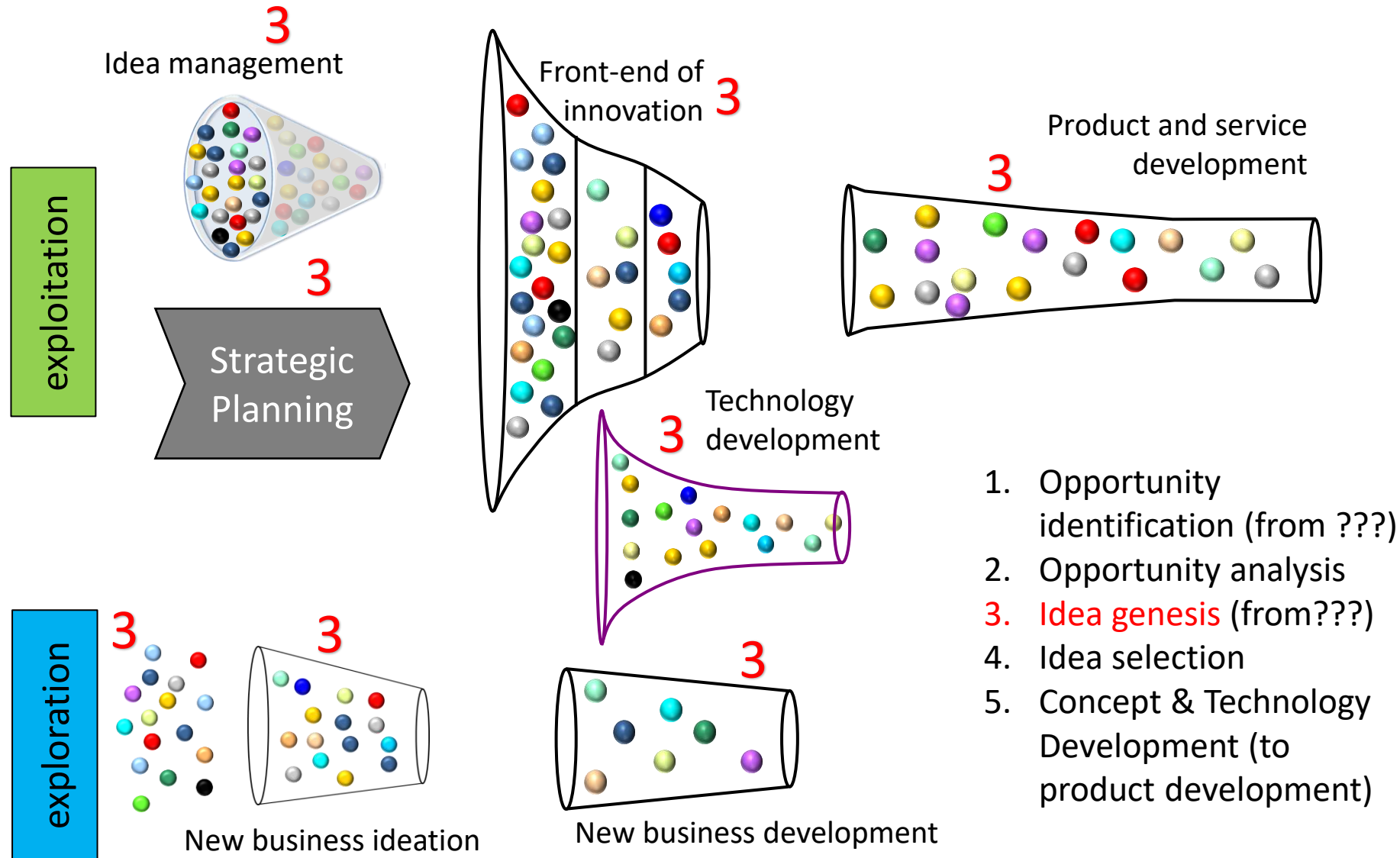
Main innovation processes



1. Opportunity identification (from ???)
2. **Opportunity analysis**
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Business model innovation

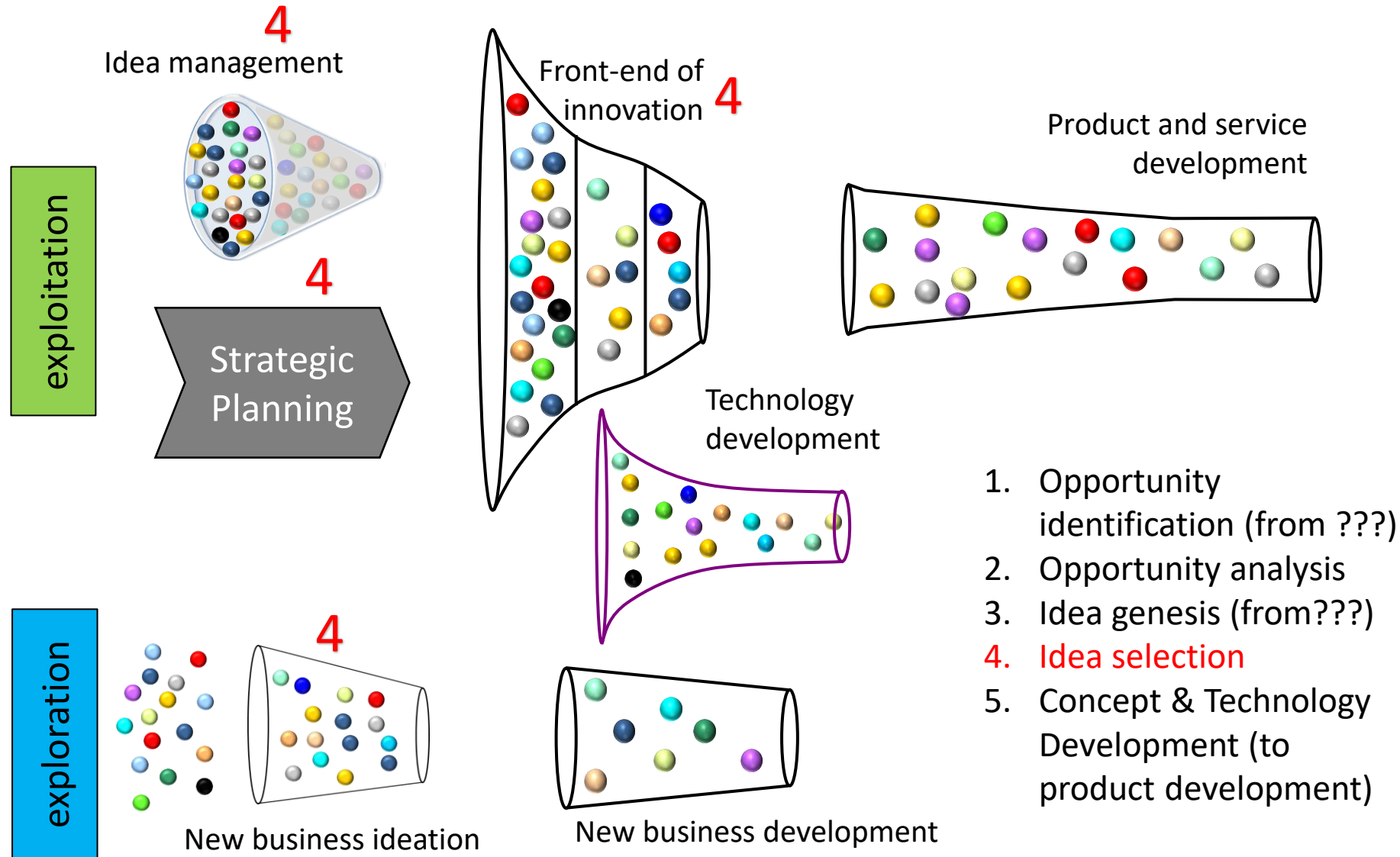
Main innovation processes



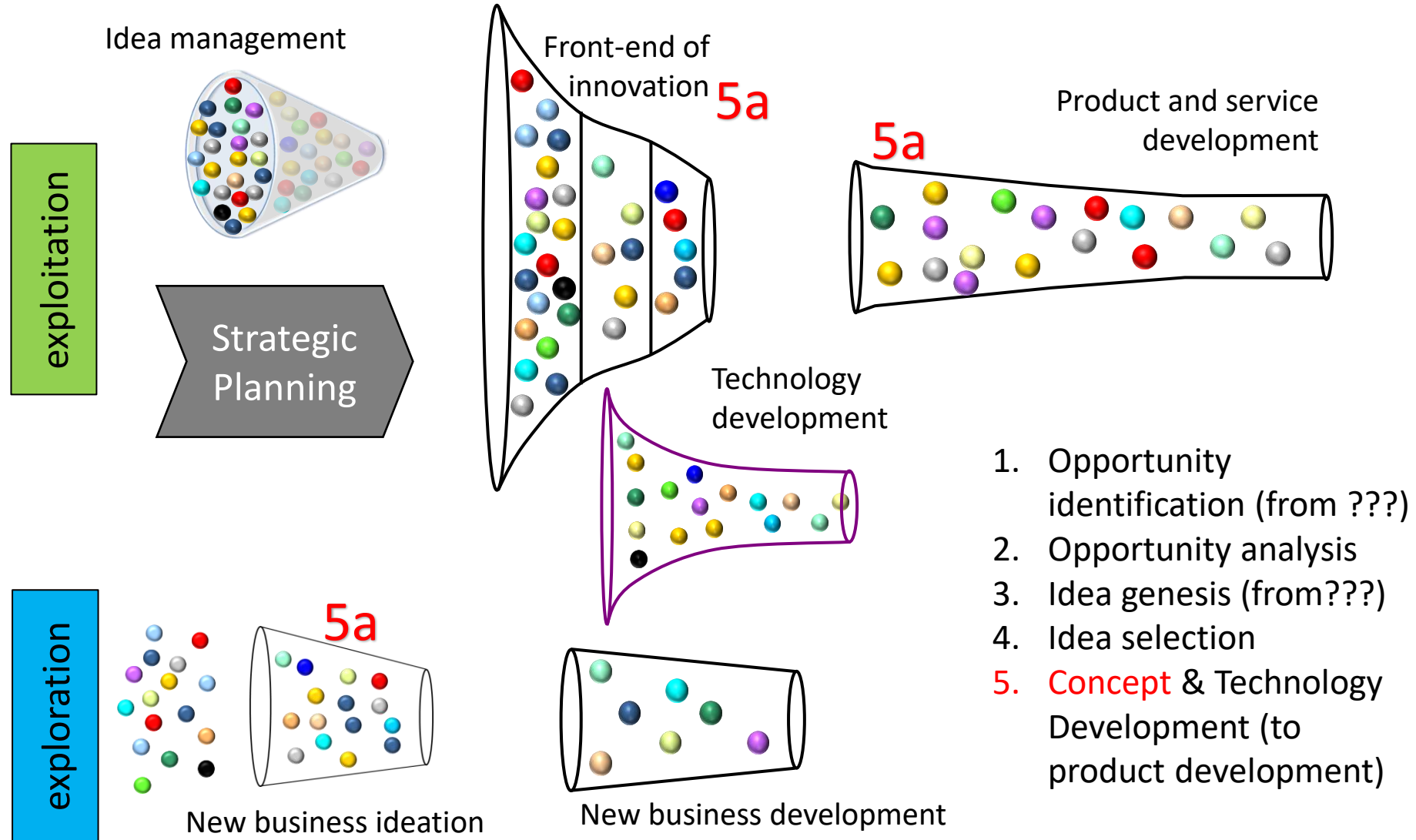
Business model innovation



Main innovation processes

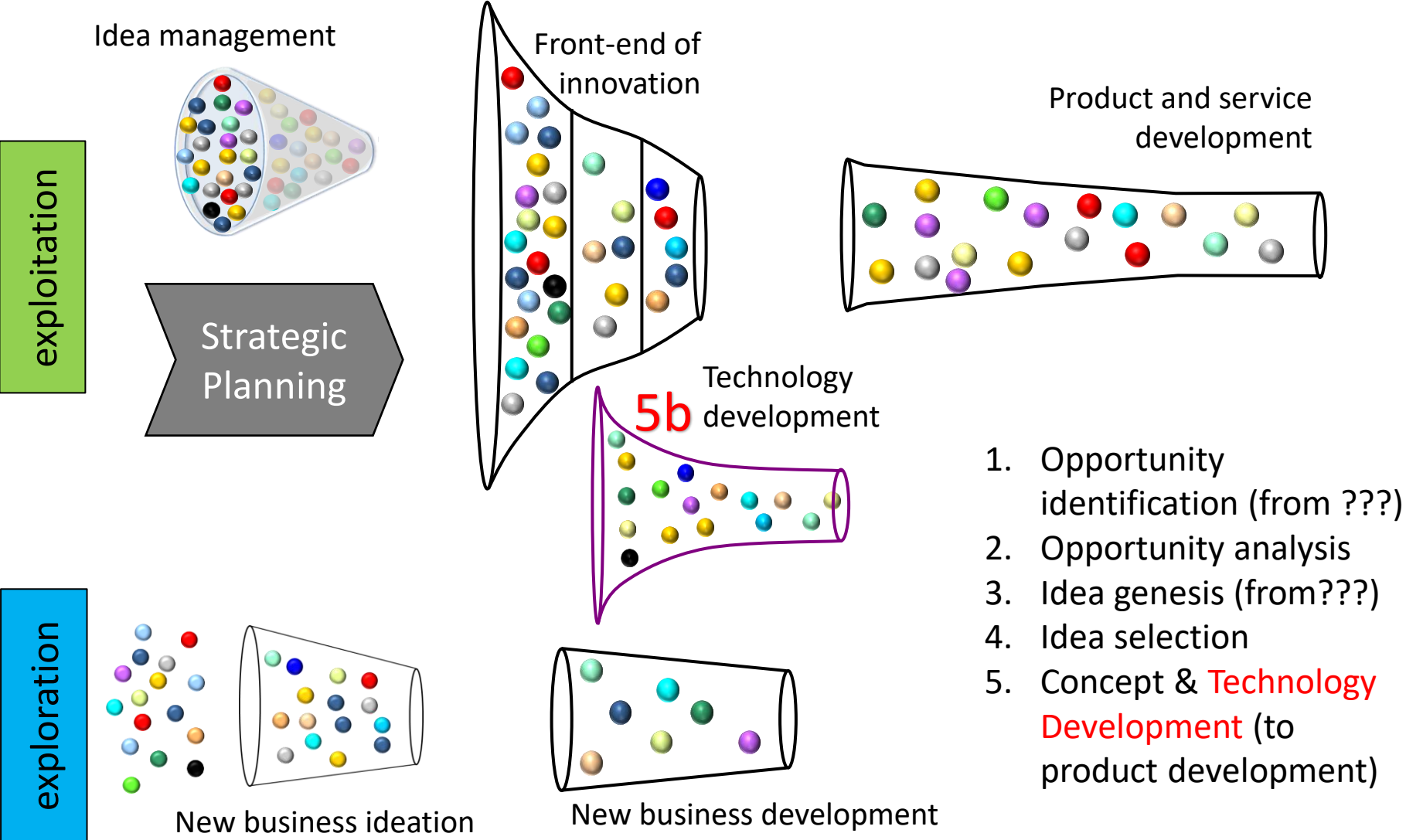


Main innovation processes



Business model innovation

Main innovation processes

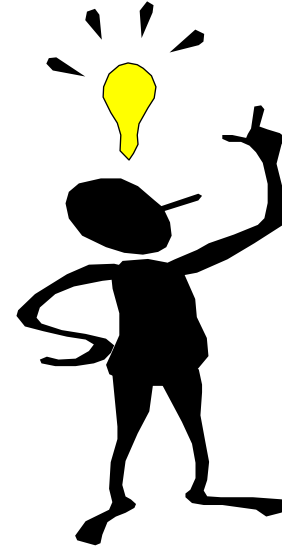


Business model innovation

What is an idea?

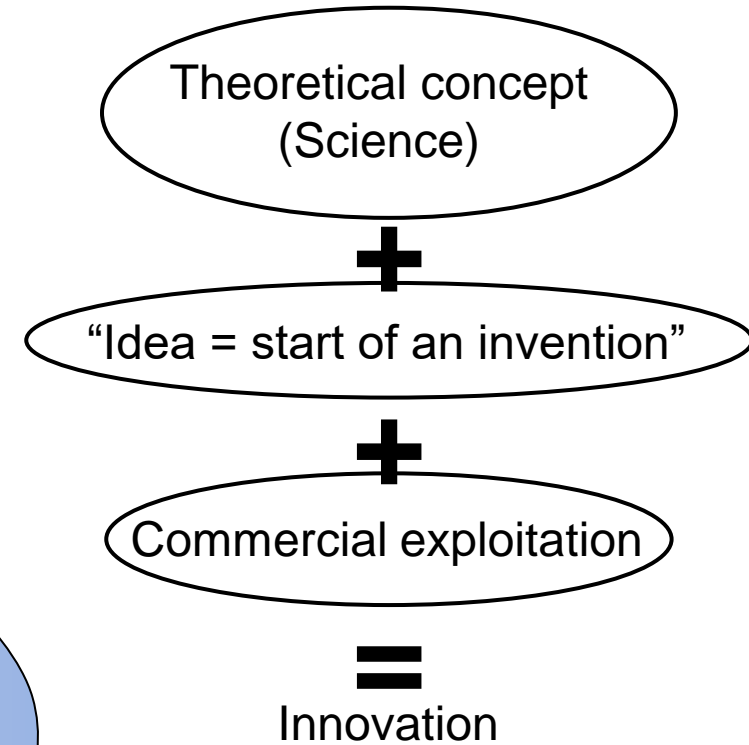
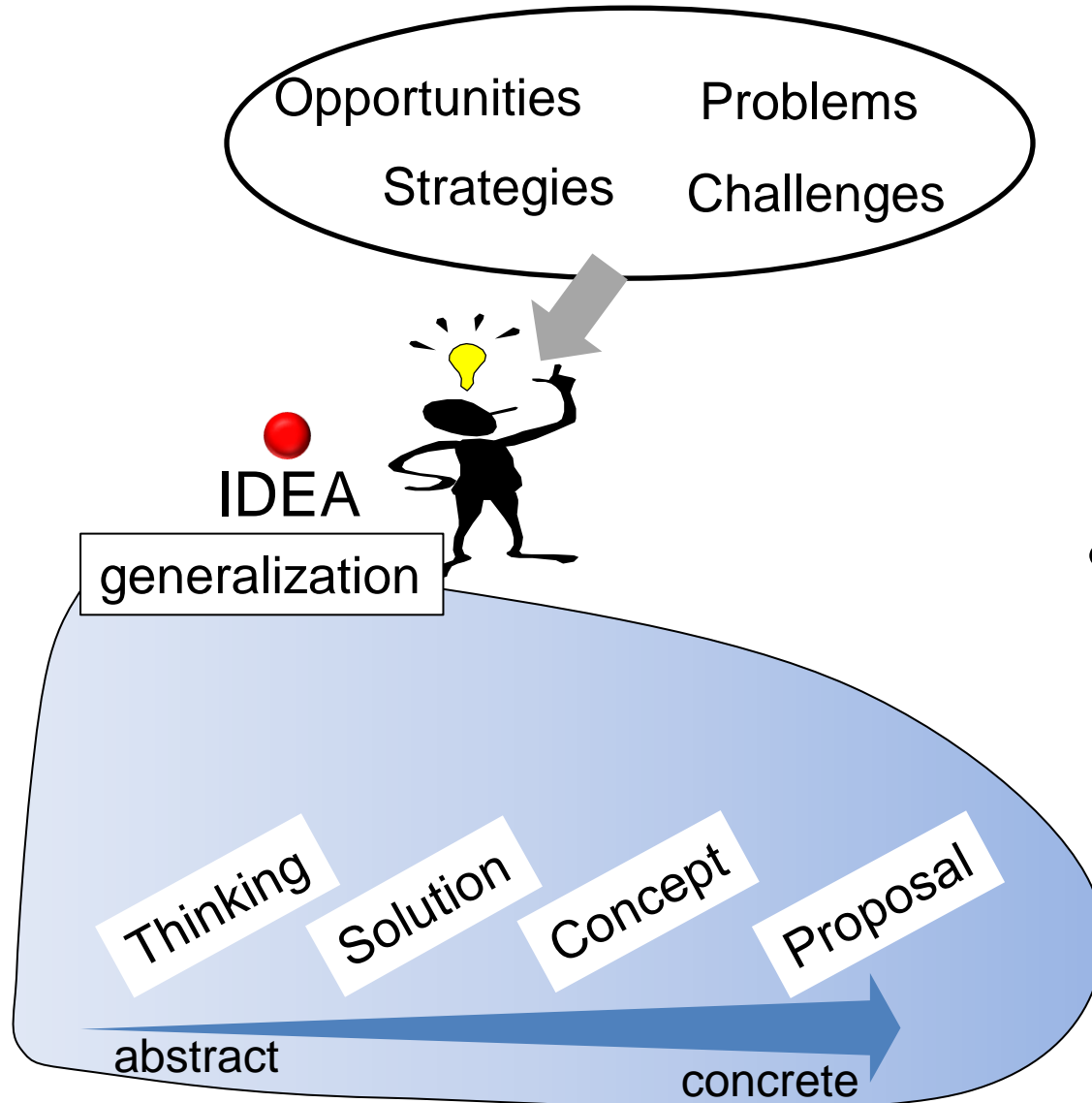
Definition of idea

Simplified form of a product or service

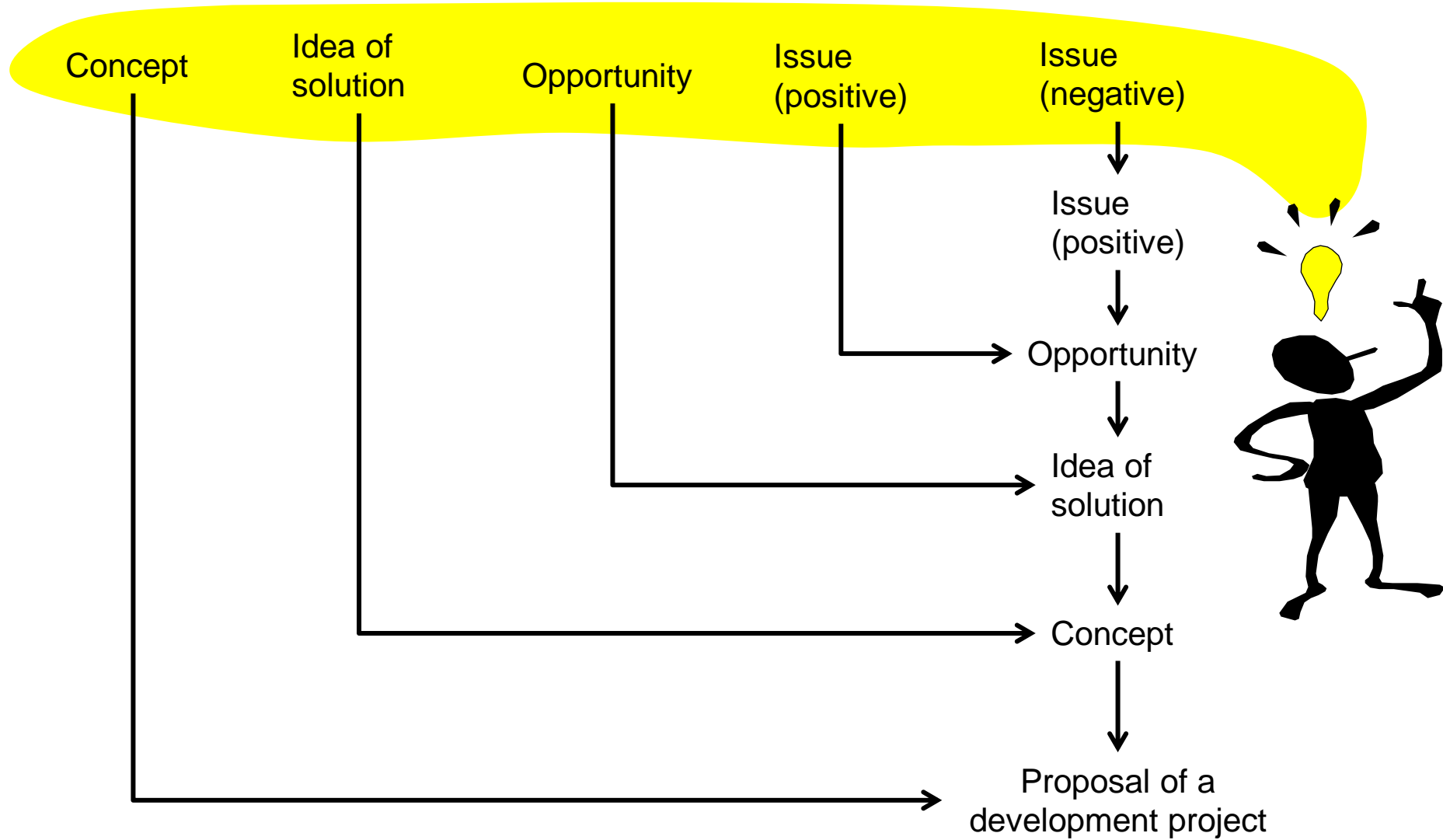


The most embryonic form of a new product or service.
It often consists of a high-level view of the solution
envisioned for the problem identified by the opportunity

Definition of idea



Evolution from ideas



Issue (negative)= problems, pains, risks, challenges

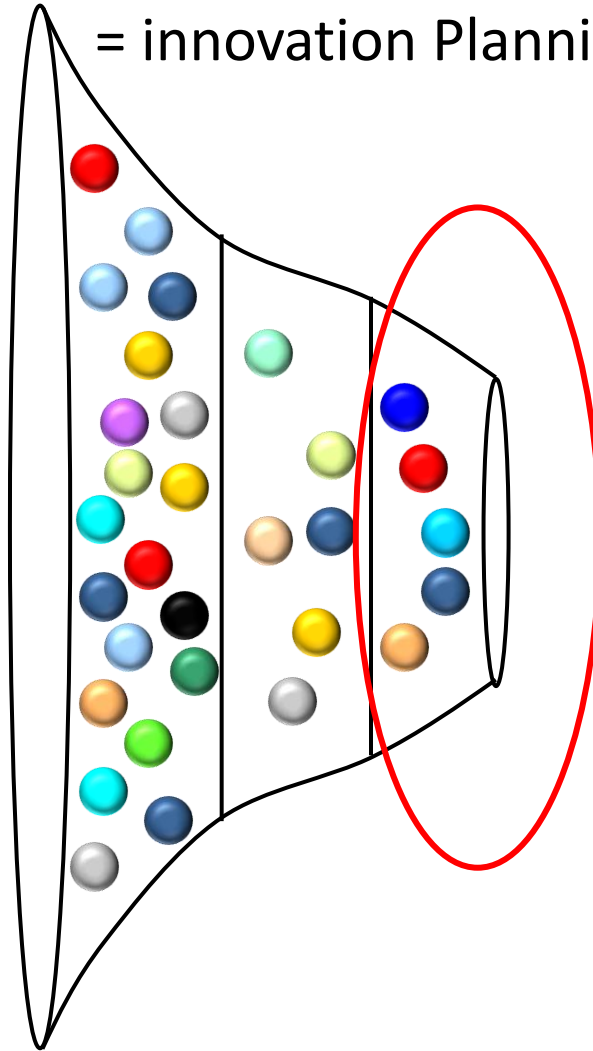
Issue (positive)= gains, opportunities, needs, requirements



Where is located the
portfolio planning?

Location of the portfolio planning

Front-end of innovation
= innovation Planning



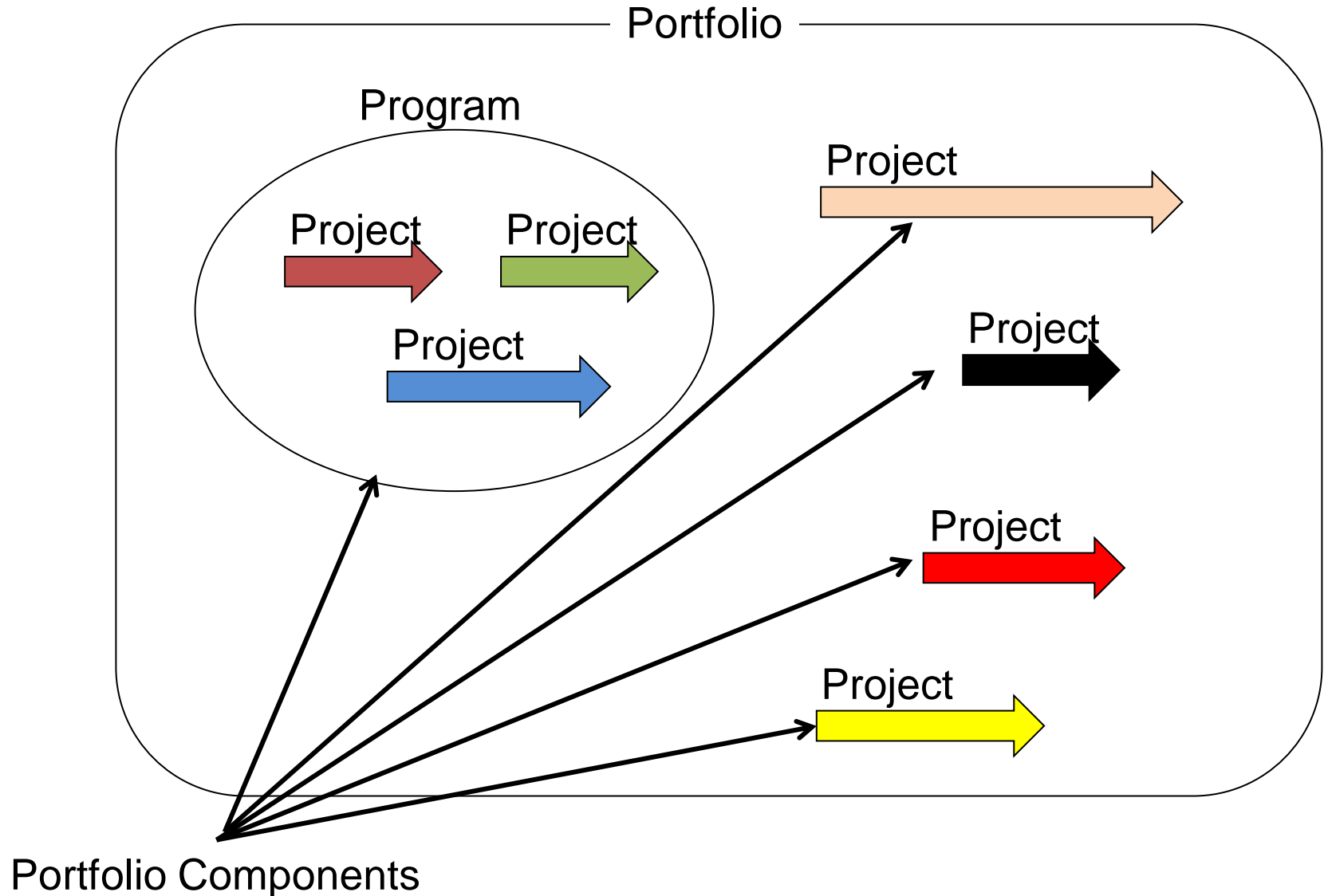
Selection of development proposals of:

- Product
- Service
- Product-service system (PSS)
- Technology
- New business model

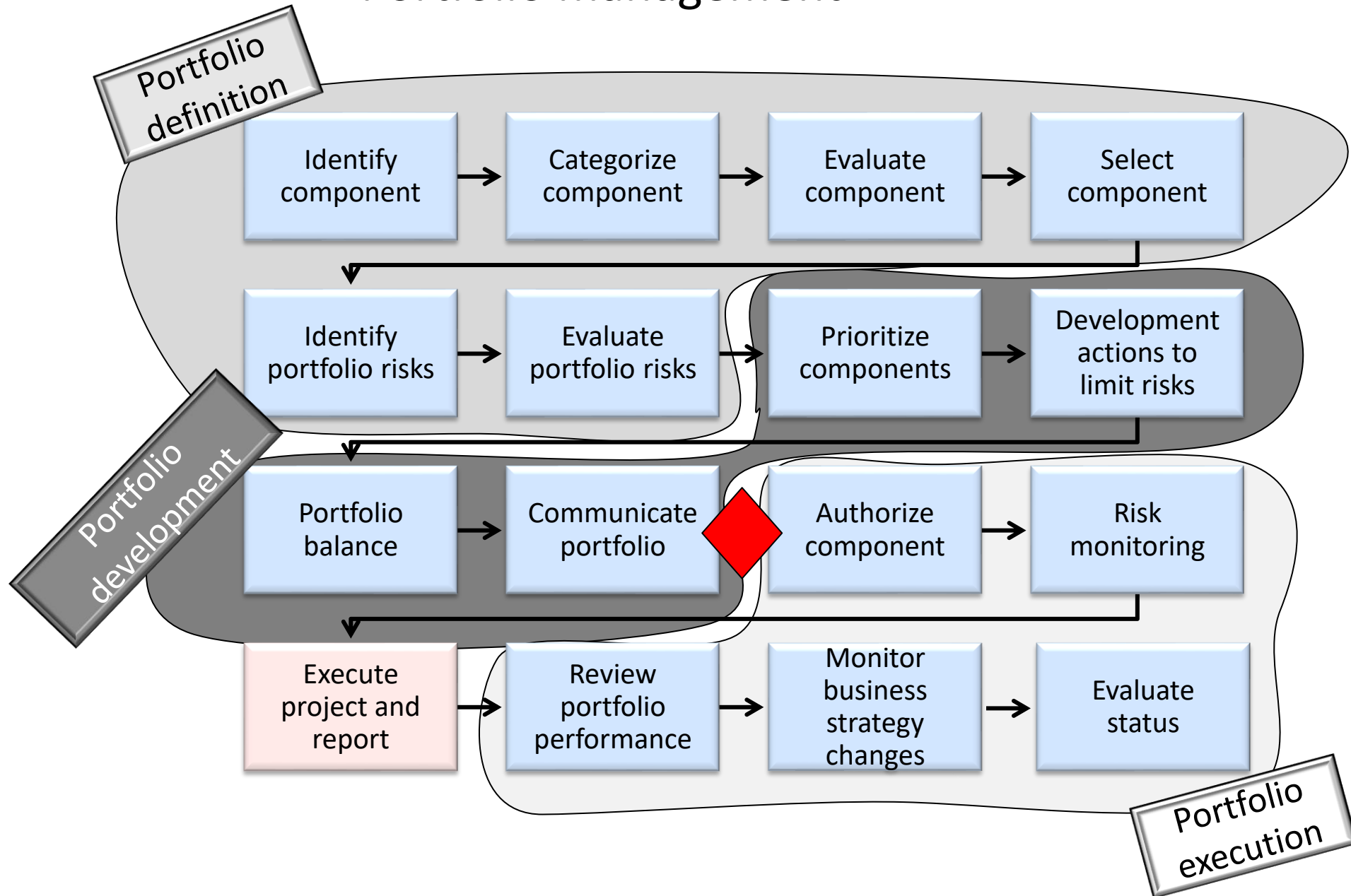
Portfolio planning



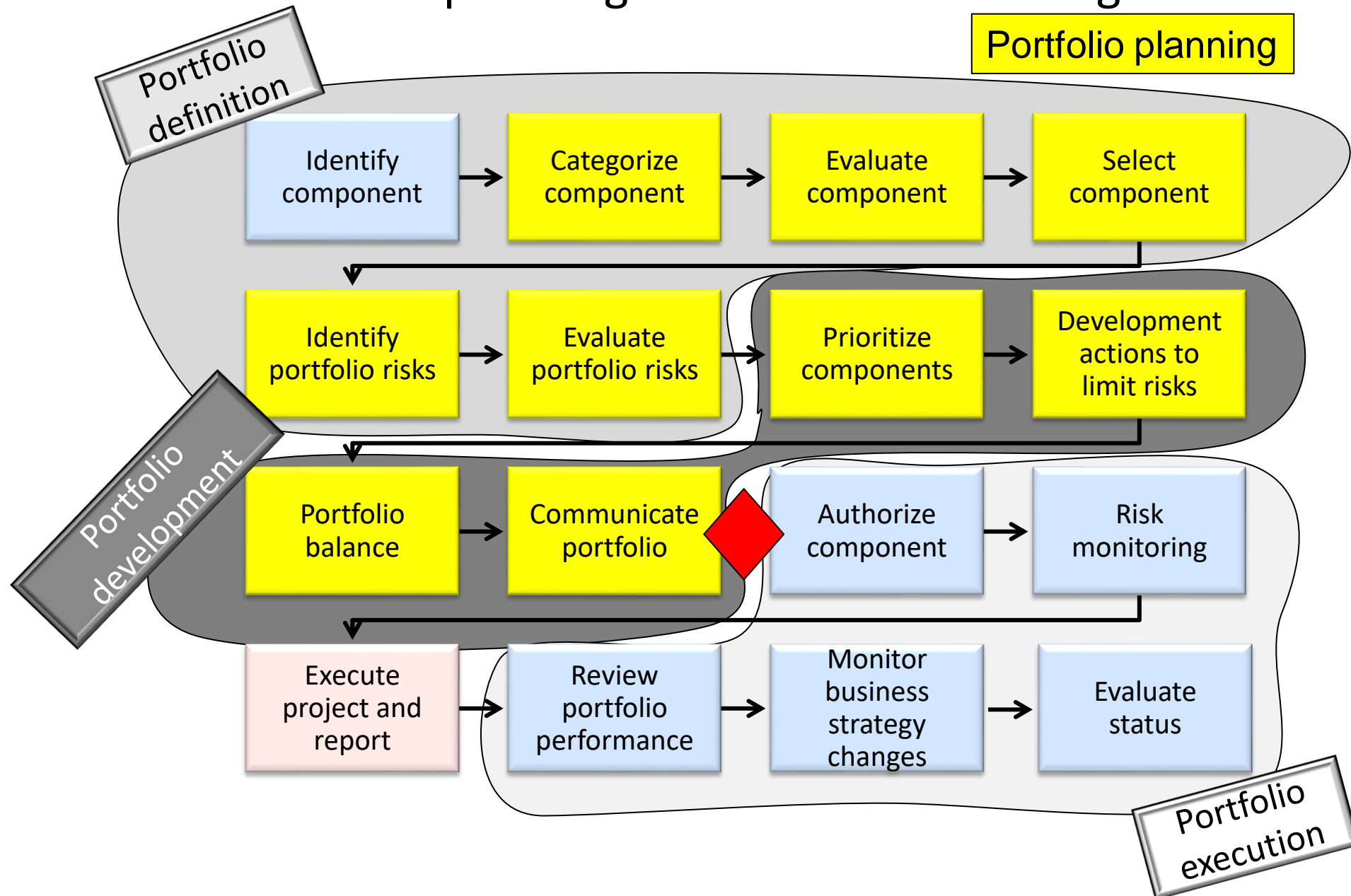
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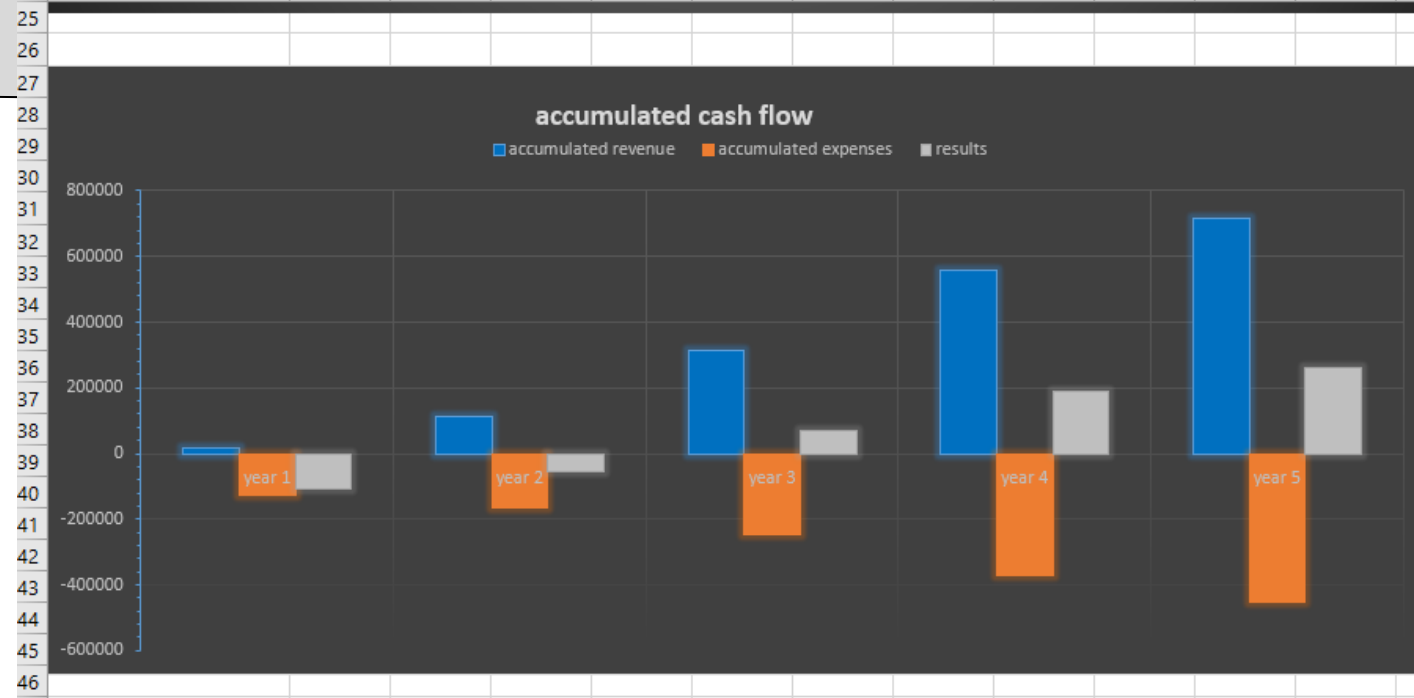
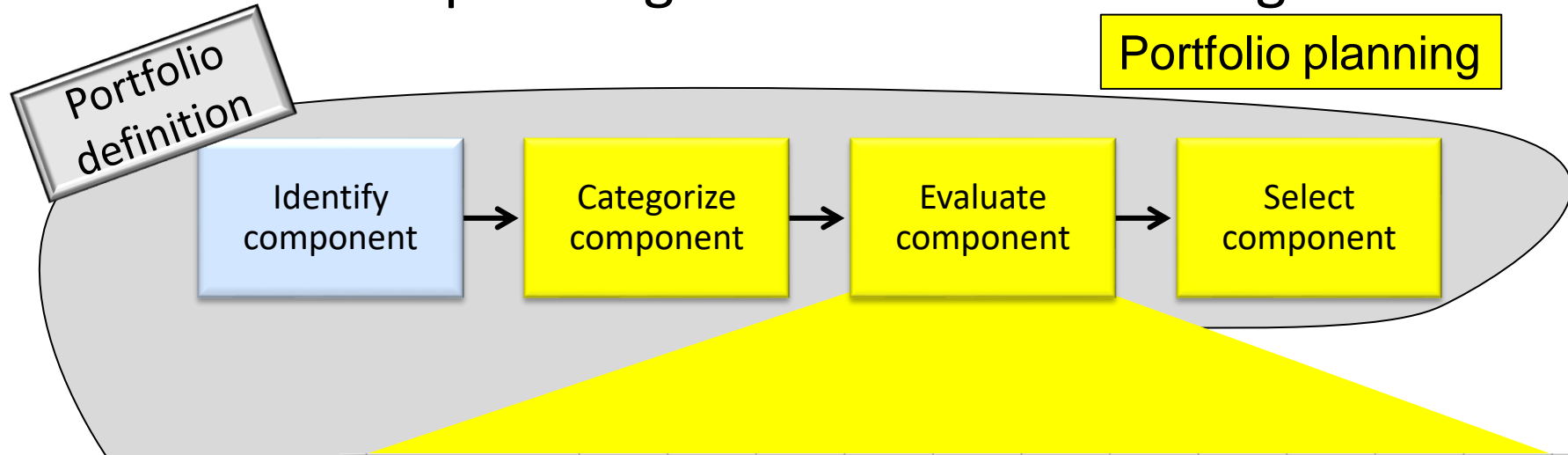
Portfolio management



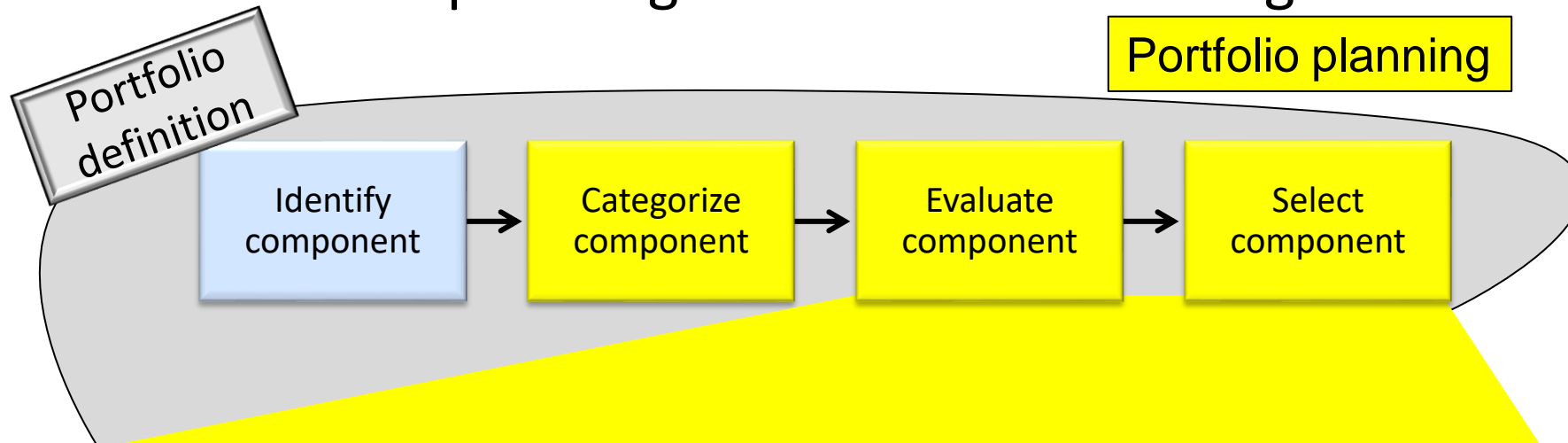
Portfolio planning inside Portfolio management



Portfolio planning inside Portfolio management



Portfolio planning inside Portfolio management



A	B	C	D
criteria	unit	value	explanation
market attractiveness	1 - 5	4	does this project has the potential of marketing success?
commercial feasibility (risk)	%	70,0%	would our market assumptions (volume and price) be accomplished?
alignment to strategy	1 - 5	5	is this project aligned with the company's strategy?
competitive advantage	1 - 5	4	would this project give us an advantage over our competitors?
technical feasibility (risk)	%	82,0%	is it possible to develop this offer with our knowledge and with the existing /
technological readiness level	%	100%	which is the TRL of the technologies applied in the product / service?
leverage of core competence	1 - 5	4	could this project increase our knowledge / capability?
capacity needed (effort / work)	man month	20	capacity to develop the project
investment	\$	\$ 120.000,00	total investment
NPV: net present value	\$	\$ 561.161,65	
payback	months	32,6	
ROI: return of investment	times	283%	
time-to-market	months	9	
lifecycle	months	60	

Portfolio planning inside Portfolio management

Portfolio planning

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	
1			see description of status						total \$	NPV	payback	payback	ROI	ECV					
2																risk		cl	
3	proj ID	project short title	status	decided	priority	alignment to strategy	qualitative criteria summary	ranking	SUM					Prior-F #	responsible	commercial feasibility (risk) %	technical feasibility (risk) %	category	
4	1	project Bk 1	budget			4	2,46	16						6	roz	60,0%	70,0%	increment	
5	2	project Bk 2	hedge			5	3,10	14	69	7	15	9	11	13	14	roz	30,0%	70,0%	innovative
6	3	project Bk 3	budget			5	2,81	21	87	12	11	13	19	16	16	roz	70,0%	70,0%	platform
7	4	project Bk 4	waiting			4	2,22	11	66	14	9	20	14	9	bad	roz	70,0%	60,0%	innovative
8	5	project Bk 5	budget			5	2,70	3	43	16	6	6	3	5	7	roz	80,0%	70,0%	increment
9	6	project Bk 6	waiting			3	2,94	4	45	4	20	6	13	2	bad	roz	57,0%	70,0%	innovative
10	7	project Bk 7	funnel-active			3	4,35	5	47	5	16	2	3	8	13	roz	65,0%	90,0%	increment
11	8	project Bk 8	funnel-active			2	3,78	14	69	3	18	13	14	10	11	roz	79,0%	90,0%	increment
12	9	project Bk 9	hedge			5	3,39	8	52	9	13	6	8	1	15	roz	43,0%	90,0%	platform
13	10	project Bk 10	hedge			4	2,74	10	64	1	21	13	8	12	9	roz	91,0%	80,0%	increment
14	11	project Bk 11	hedge			5	4,48	19	78	13	10	20	14	11	10	roz	93,0%	85,0%	increment
15	12	project Bk 12	budget			3	3,54	6	49	19	8	4	3	7	8	roz	70,0%	60,0%	innovative
16	13	project Bk 13	waiting			2	3,00	8	52	2	17	9	6	18	bad	roz	50,0%	75,0%	innovative
17	14	project Bk 14	waiting			1	2,49	17	71	8	11	20	1	19	12	roz	35,0%	95,0%	platform
18	15	project Bk 15	waiting			3	2,58	11	66	11	19	9	11	16	bad	roz	50,0%	30,0%	innovative
19	16	project Bk 16	waiting			5	3,09	6	49	10	14	2	8	15	bad	roz	69,0%	75,0%	increment
20	17	project Bk 17	waiting			4	3,71	18	75	6	22	13	14	20	bad	roz	87,0%	40,0%	innovative
21	18	Wind power	budget			4	3,59	22	90	21	3	19	21	22	4	roz	70,0%	70,0%	innovative
22	19	Batteria Chang.Station	budget			4	4,06	1	35	20	5	1	1	3	5	roz	80,0%	60,0%	innovative
23	21	solar bike	budget			4	3,78	2	37	17	2	4	7	4	3	roz	50,0%	70,0%	increment
24	22	bike sharing platform	budget			3	4,45	13	68	18	4	12	18	14	2	roz	80,0%	95,0%	platform
25	23	my proposal HR				5	3,96	20	85	22	1	18	22	21	1	roz	70,0%	82,0%	innovative
26							0,00	no	no	no	no	no	no	no	roz				
27															roz				

Prioritize components

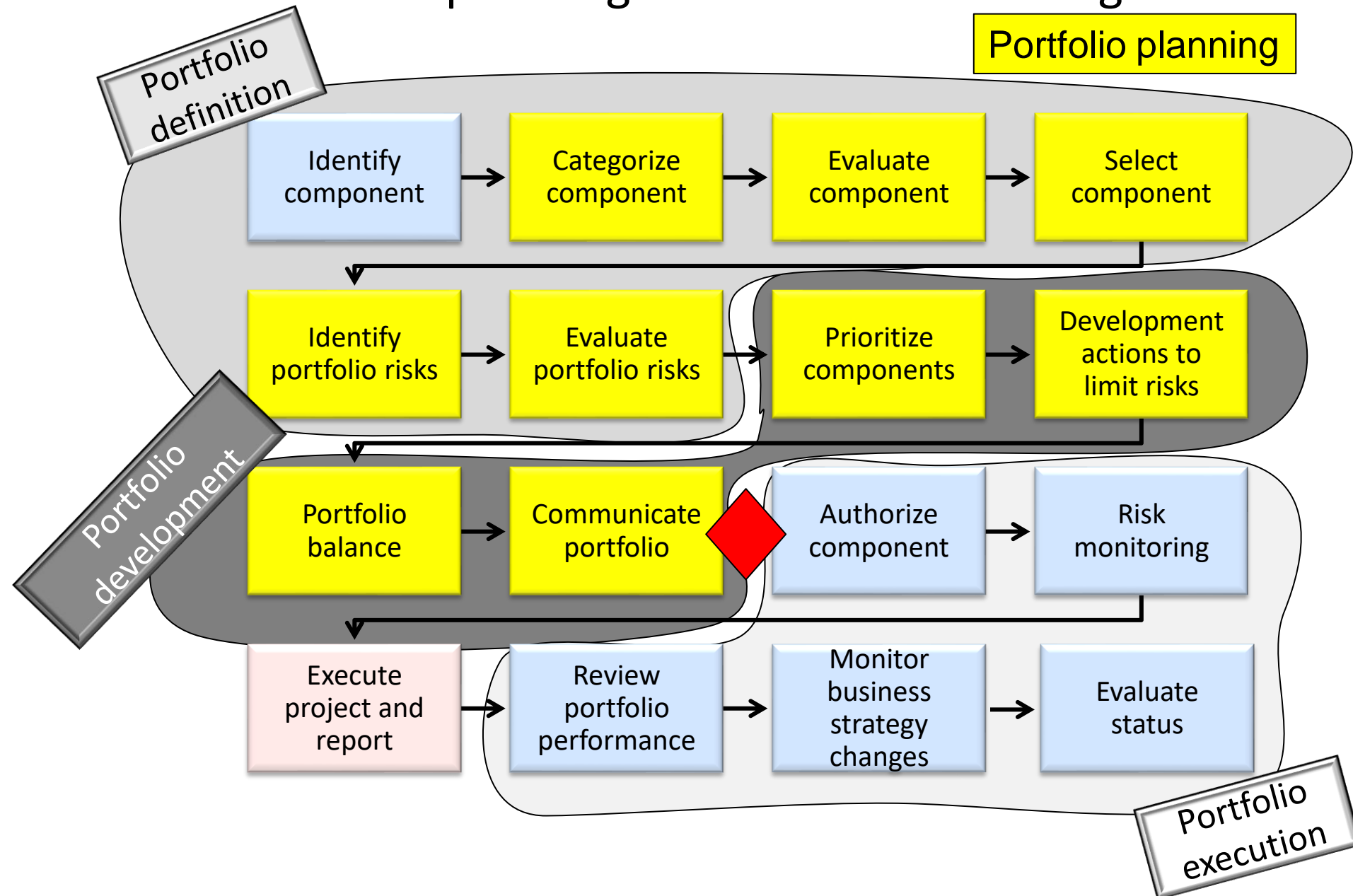


Goals of the portfolio management

- *Aligns* execution with strategy. Each selected project must play a role in carrying out the strategy of the organization. No more pet projects!
- *Maximizes* the value of the entire portfolio of projects to get the “most bang for the buck.” Taken together, the projects must have a high return on the organization’s investment. This may be in terms of dollars or other measures that are important to the organization.
- *Balances* the portfolio. Makes sure that it is not lopsided---for example, by being too risky or too focused on short-term results.



Portfolio planning inside Portfolio management



Connection between portfolio planning and project management



Portfolio planning inside Portfolio management

