FOCUS -- Focus ☆1

CONCEPTS ------------ Major Factors ☆2   Method and System ☆3   Structure and Management ☆4

METHOD ----------------------------------- Method (Analysis) ☆5 ☆6 ☆7

PRACTICE ---------------------------- Improvements ☆8   Stability ☆9

LEARNING -------------------------------- Knowledge ☆10
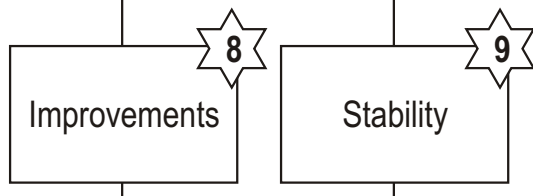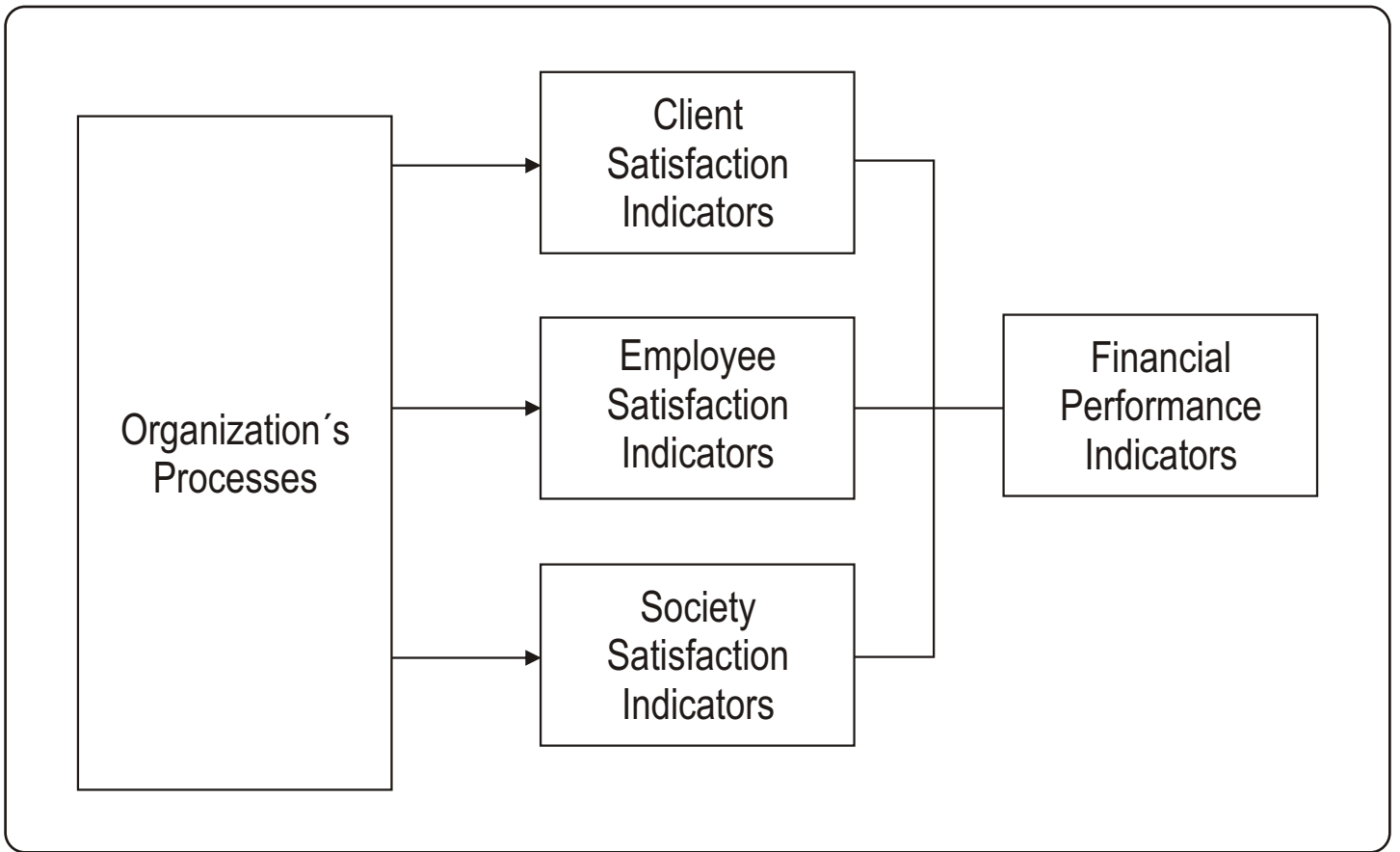
Figure 1.1: Model of an organization's key performance indicators.

Table 1.1. Example of free cash flow (Budget).

(Figures in thousands of Reais)	2008	Jan	Feb	Mar	Apr	⋯	Oct	Nov	Dec	2009
Net receipts	**1,309,799**	**87,214**	**88,506**	**90,806**	**88,879**	⋯	**106,943**	**105,651**	**102,217**	**1,152,788**
EBITDA	**273,086**	**9,373**	**14,836**	**13,281**	**18,497**	⋯	**25,273**	**24,286**	**22,909**	**240,806**
(+/-) Working capital		**17,416**	**985**	**- 18,520**	**1,872**	⋯	**178**	**- 4,668**	**11,337**	**7,511**
Current assets		**24,401**	**- 466**	**- 6,202**	**- 1,665**	⋯	**- 1,840**	**- 6,744**	**10,302**	**- 4,756**
Accounts receivable (Clients)		27,346	- 2,604	- 9,983	- 8,487	⋯	- 6,760	- 6,239	3,844	- 32,409
Inventory		- 4,890	1,887	3,754	7,036	⋯	4,942	- 401	6,488	25,903
Tax credit		1,944	252	27	- 215	⋯	- 22	- 105	- 30	1,750
Current liabilities		**- 6,985**	**1,451**	**- 12,318**	**3,538**	⋯	**2,017**	**2,076**	**1,035**	**12,267**
Accounts payable (Suppliers)		- 8,075	- 575	2,849	4,099	⋯	- 482	1,493	- 653	9,448
Taxes		- 386	275	1,235	- 1,328	⋯	165	156	- 757	3,581
Social security contributions		1,477	1,750	- 16,402	- 1,899	⋯	2,334	427	2,445	- 762
Client advances										
(-) Capital expenditures (Capex)		**- 1,171**	**- 2,732**	**- 1,102**	**- 1,199**	⋯	**- 3,233**	**- 2,290**	**- 2,931**	**- 29,735**
(+/-) Other		**- 5,908**	**- 2,091**	**1,597**	**- 6,021**	⋯	**- 464**	**- 357**	**- 338**	**- 16,532**
(-) Profit tax and social contributions		**- 196**	**- 17**	**2,568**	**674**	⋯	**- 265**	**688**	**- 2,230**	**- 5,163**
(=) Operating cash flow		**19,513**	**10,981**	**- 2,177**	**13,824**	⋯	**21,489**	**17,660**	**28,747**	**196,887**
(-) Net interest expenditure		**- 1,335**	**1,599**	**- 51,479**	**- 10,179**	⋯	**1,458**	**- 21,240**	**1,662**	**- 83,844**
(-) Net loan increase/reduction		**- 7,945**	**274**	**1,058**	**- 14,729**	⋯	**126**	**124**	**- 1,531**	**- 16,821**
Loans		82	353	21,350	1,621	⋯	190	60,190	2,535	94,250
Loan payments		- 8,026	- 79	- 20,291	- 16,350	⋯	- 64	- 60,065	- 4,066	- 111,071
(=) Cash flow financing		**- 6,610**	**1,873**	**- 50,421**	**- 24,909**	⋯	**1,584**	**- 21,116**	**131**	**- 100,666**
(=) Dividends										**- 14,634**
(=) Free cash flow	**440,615**	**12,904**	**12,854**	**- 52,598**	**- 11,085**	⋯	**23,073**	**- 3,456**	**28,878**	**81,587**
Cash	**185,801**	**198,705**	**211,559**	**158,962**	**147,876**	⋯	**241,967**	**238,511**	**267,389**	**267,389**
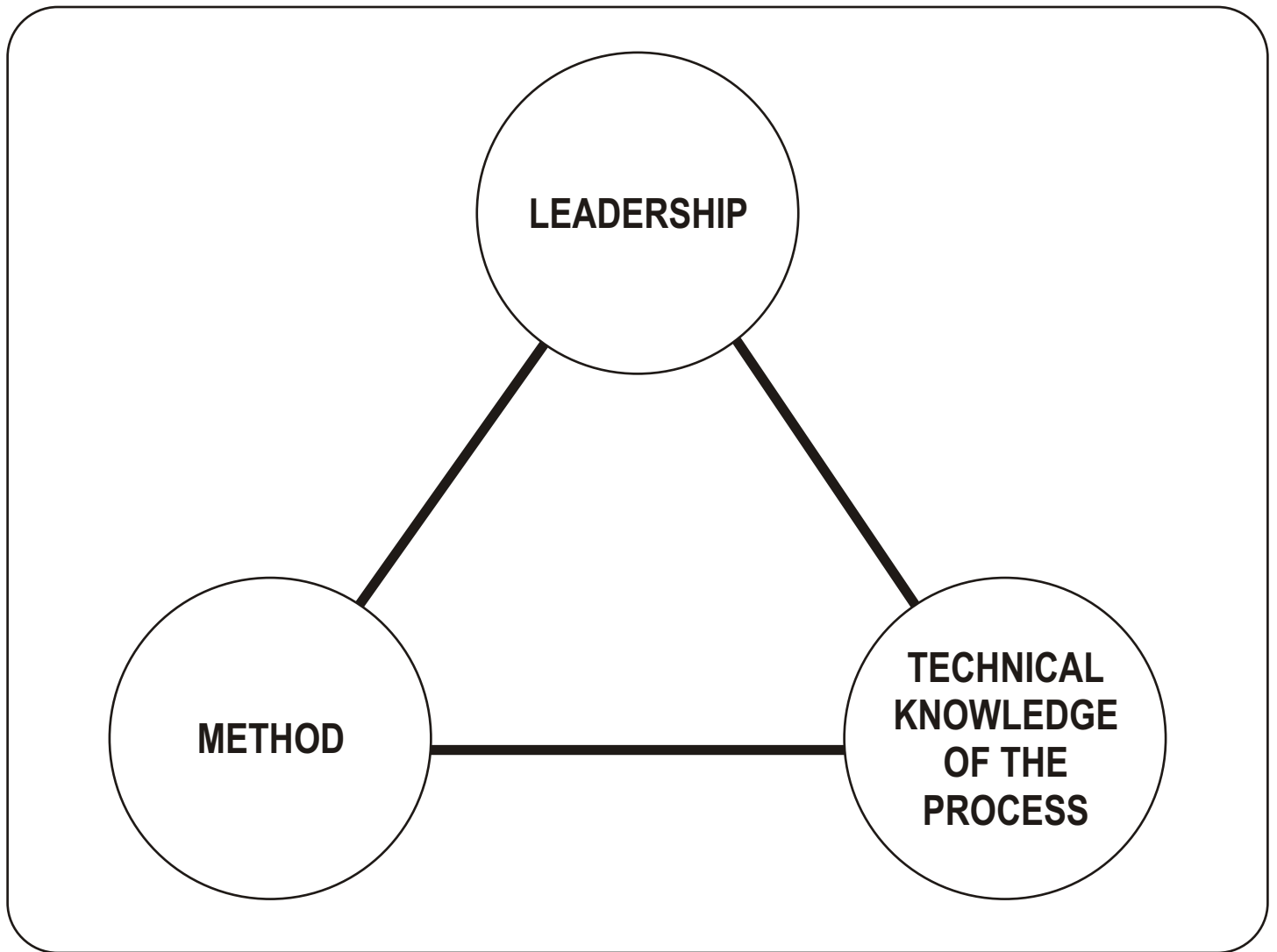
Figure 2.1: Model of the factors that guarantee results.

LEADER´S AGENDA

1. Set goals based on gaps
2. Promote the team´s mastery of the method
3. Promote the team´s acquisition of technical knowledge about the process

1. Recruit
2. Train
3. Inspire
4. Coach
5. Promote meritocracy
6. Budge people out of the comfort zone so that they can develop
7. Make an honest, constructive performance evaluation
8. Dismiss when necessary
9. Have a system of incentives aligned with the goals

1. Promote a unified culture
2. High-performance culture
3. Facts-and-data culture
4. Intellectual honesty culture
5. Facing facts culture
6. Alignment with the company´s values

Leadership

Reach goals

With the team

Doing things right

Figure 2.2: Model of the leader's agenda (leadership content) based on the definition of leadership.
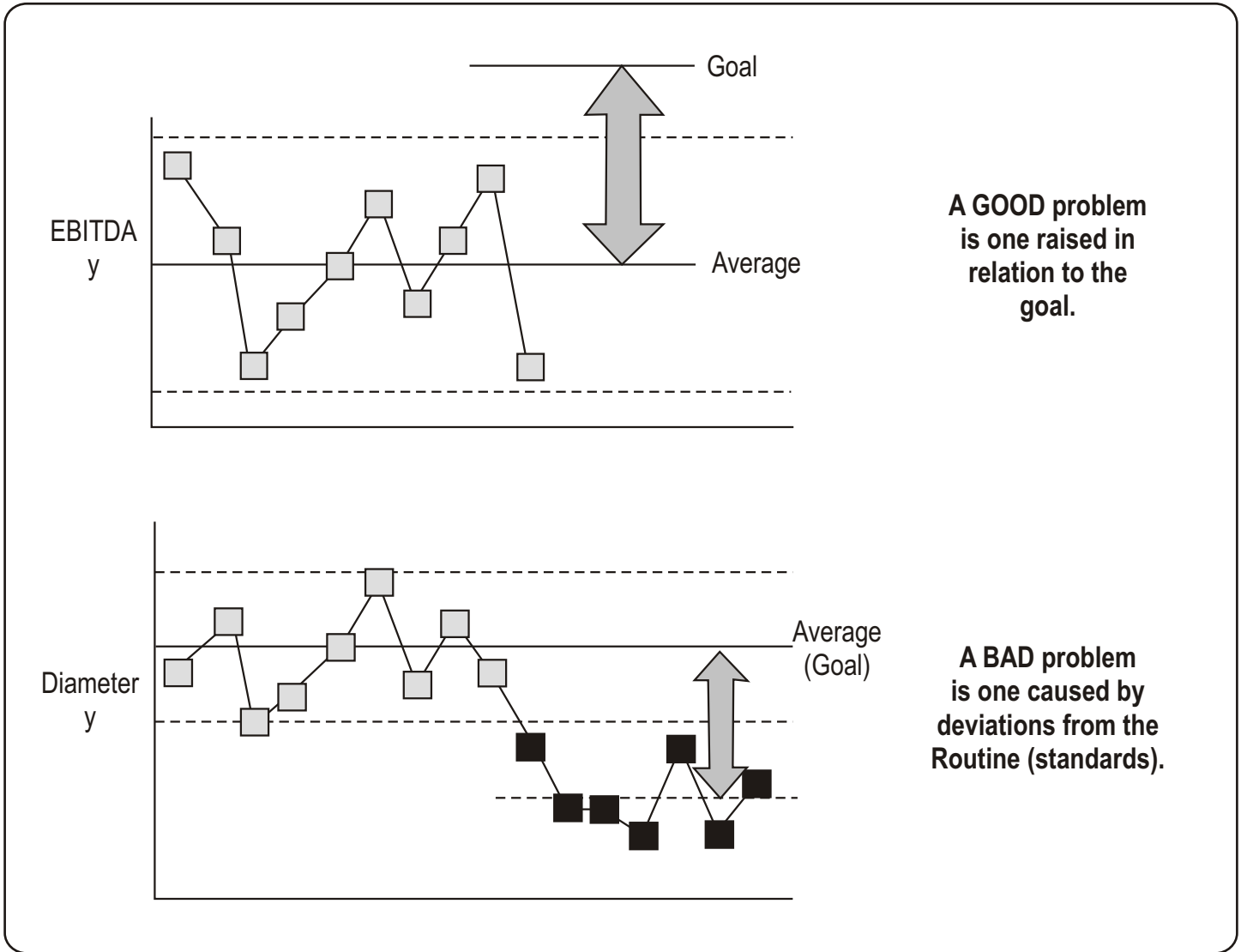
Figure 3.1: Model of the two types of problems.
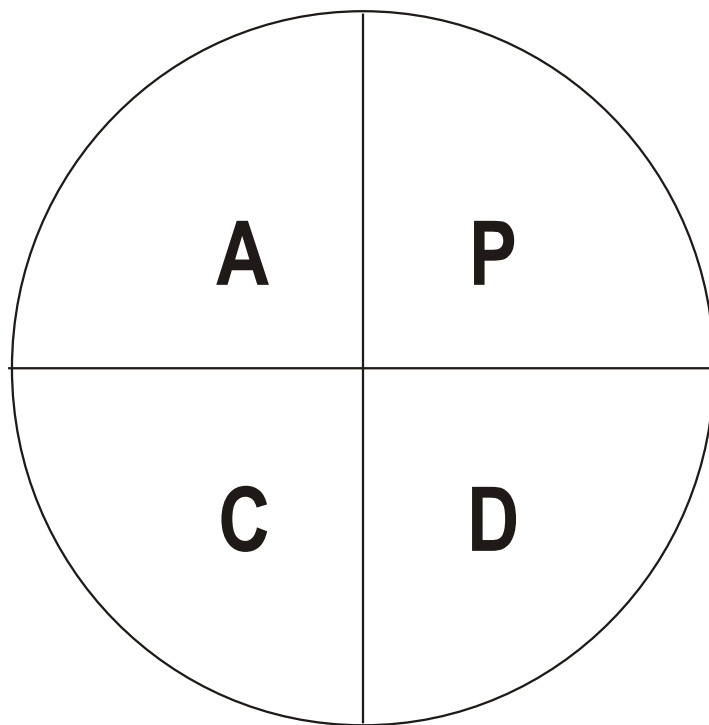
Figure 3.2: PDCA Method Model.
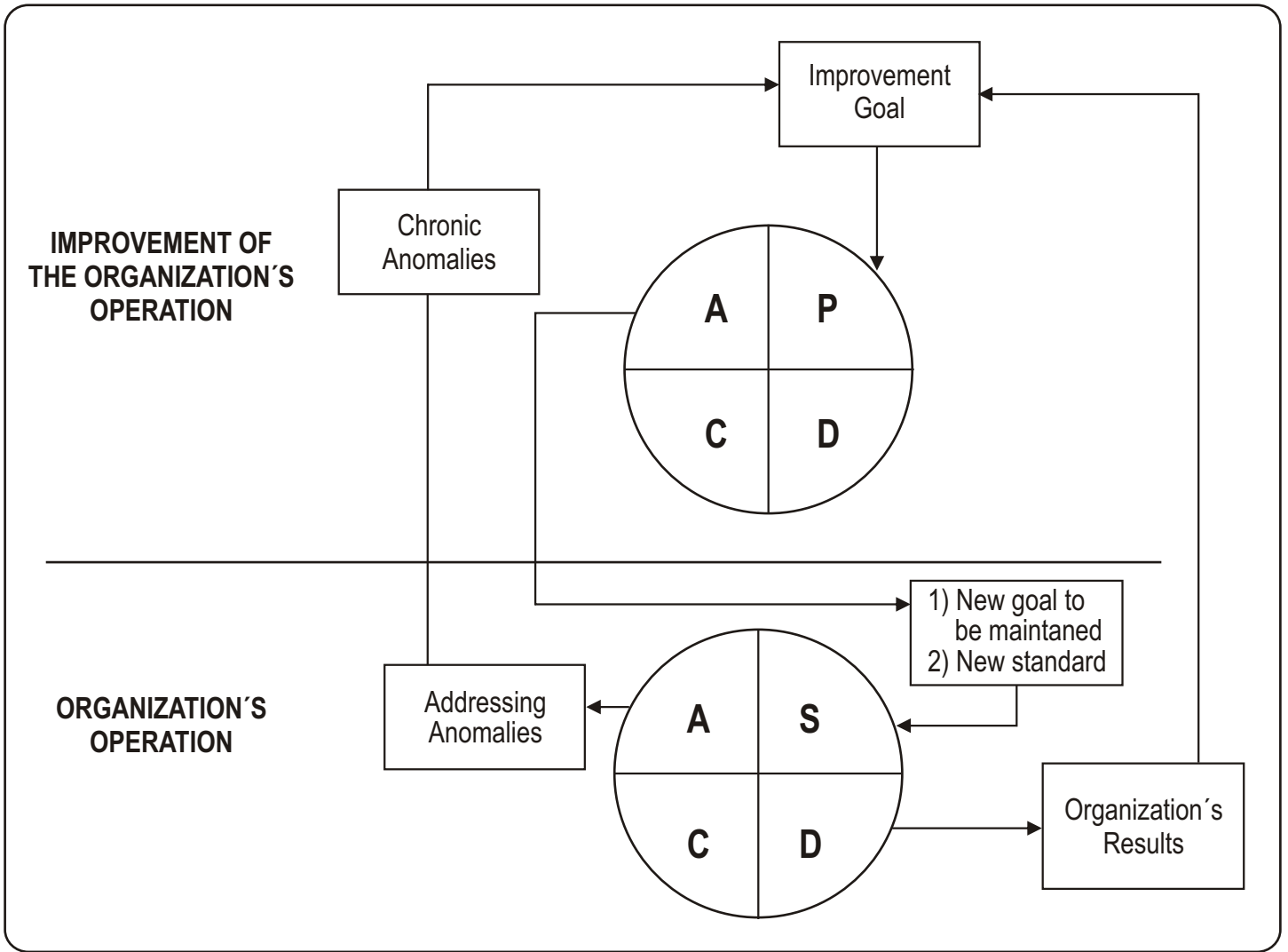
Figure 3.3: Model of the PDCA Method used for ensuring consistency in an organization's operation and improvement.
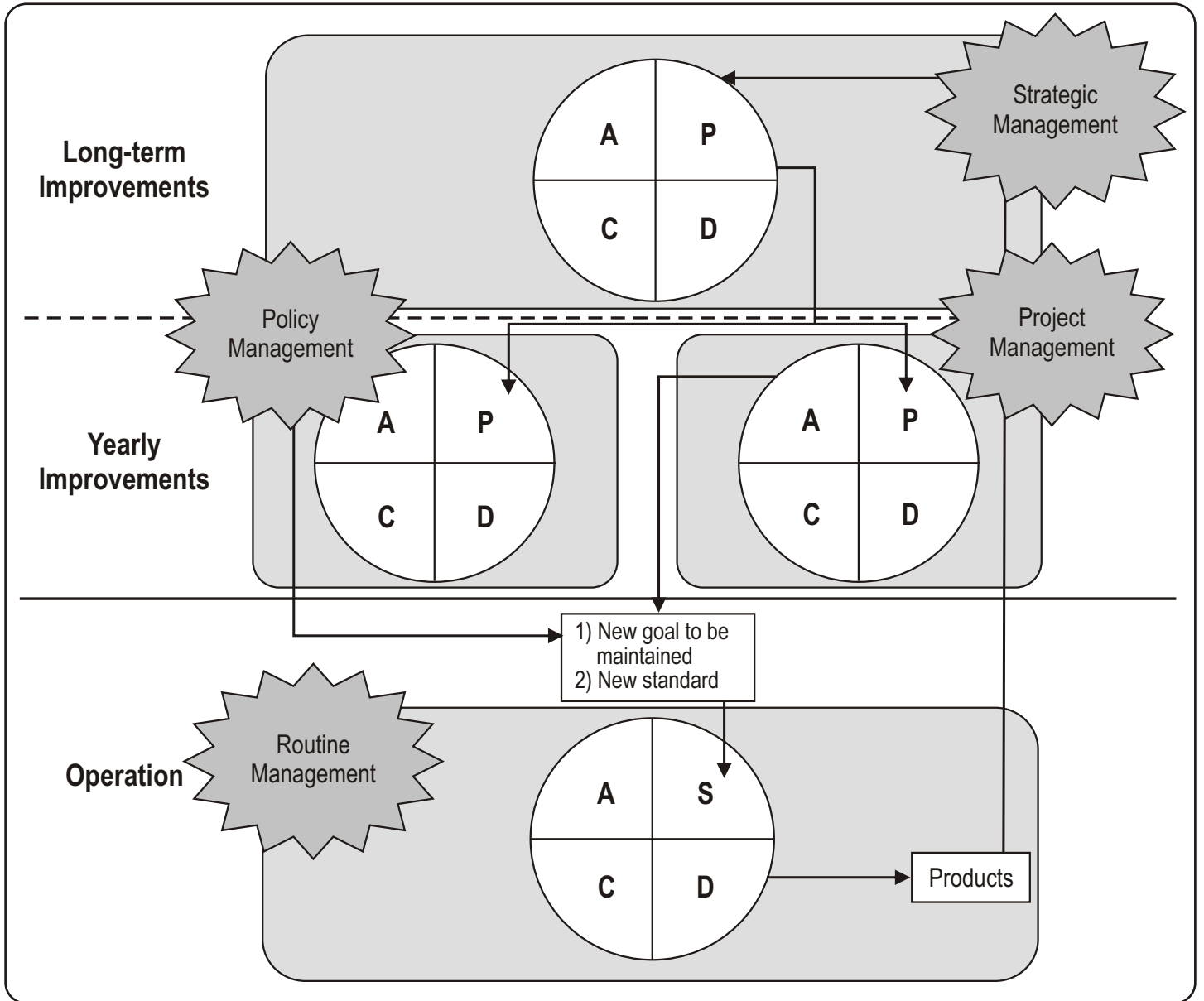
Figure 3.4: Model of the PDCA method used for operating an organization and for improving its operation (including long-term and yearly improvements).
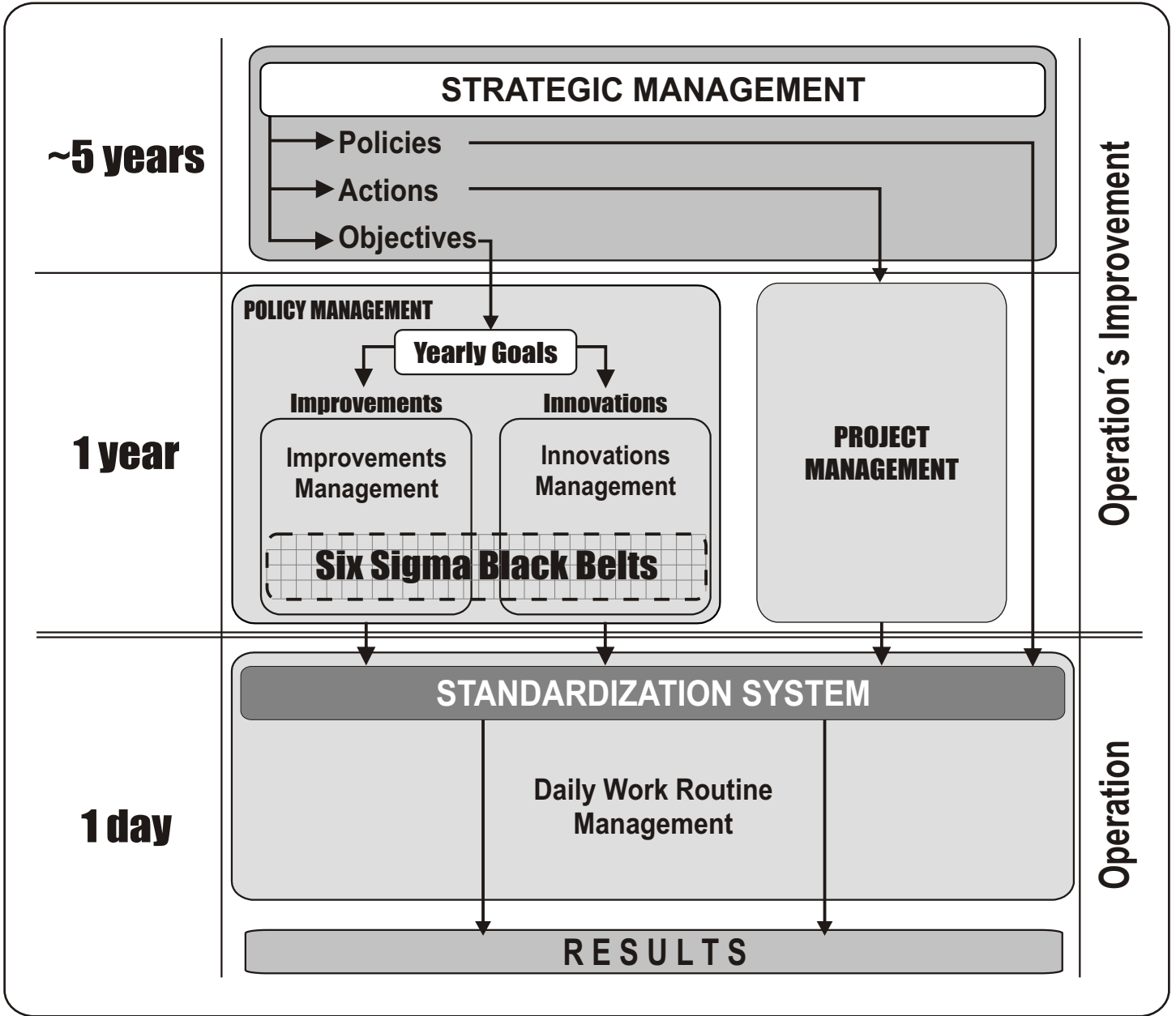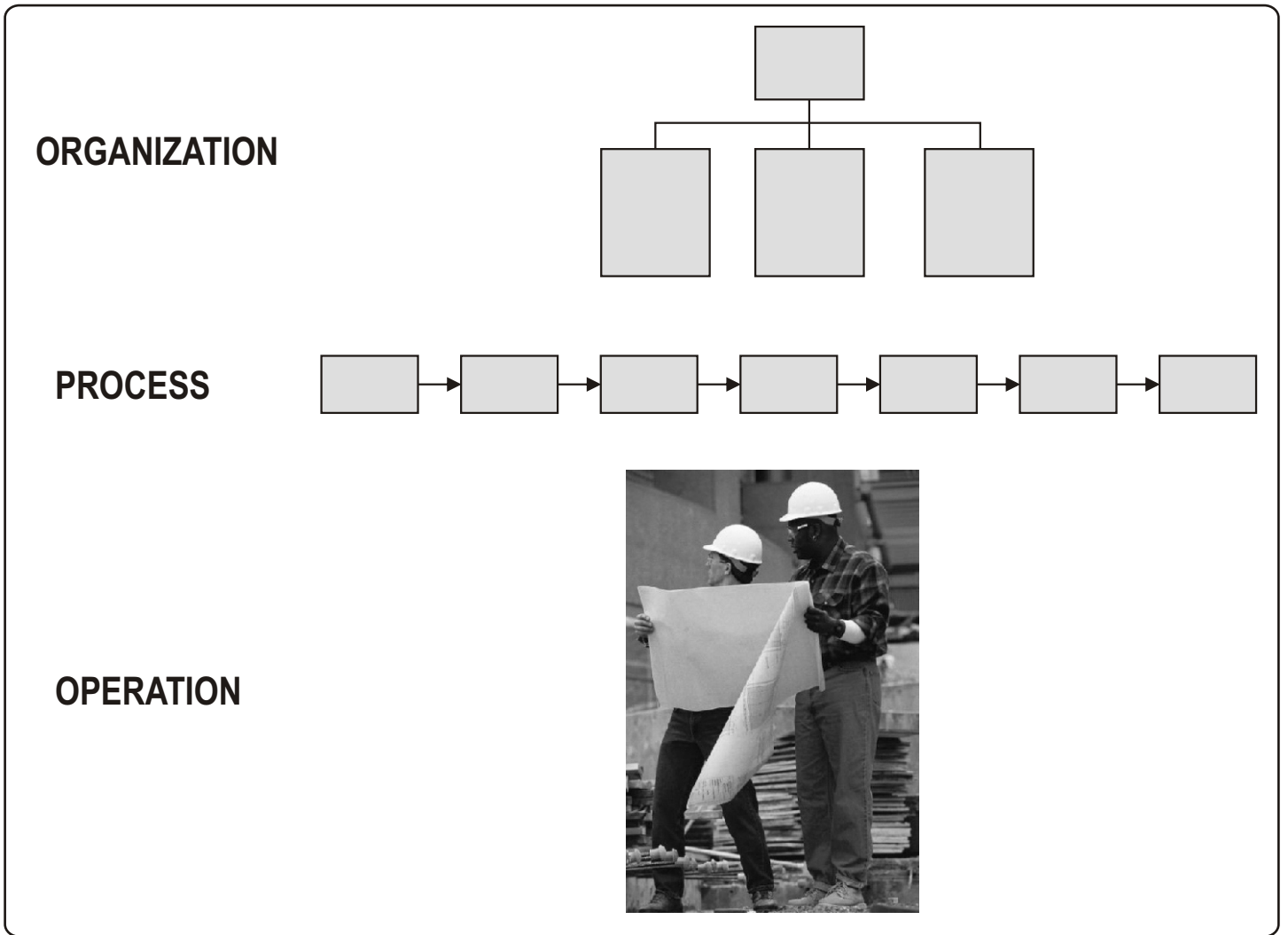
Figure 3.5: Management System Model.

ORGANIZATION

PROCESS

OPERATION
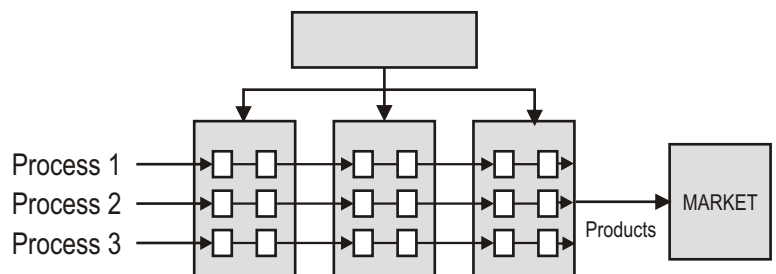
Figure 4.1: Rummler's[25] three performance levels.
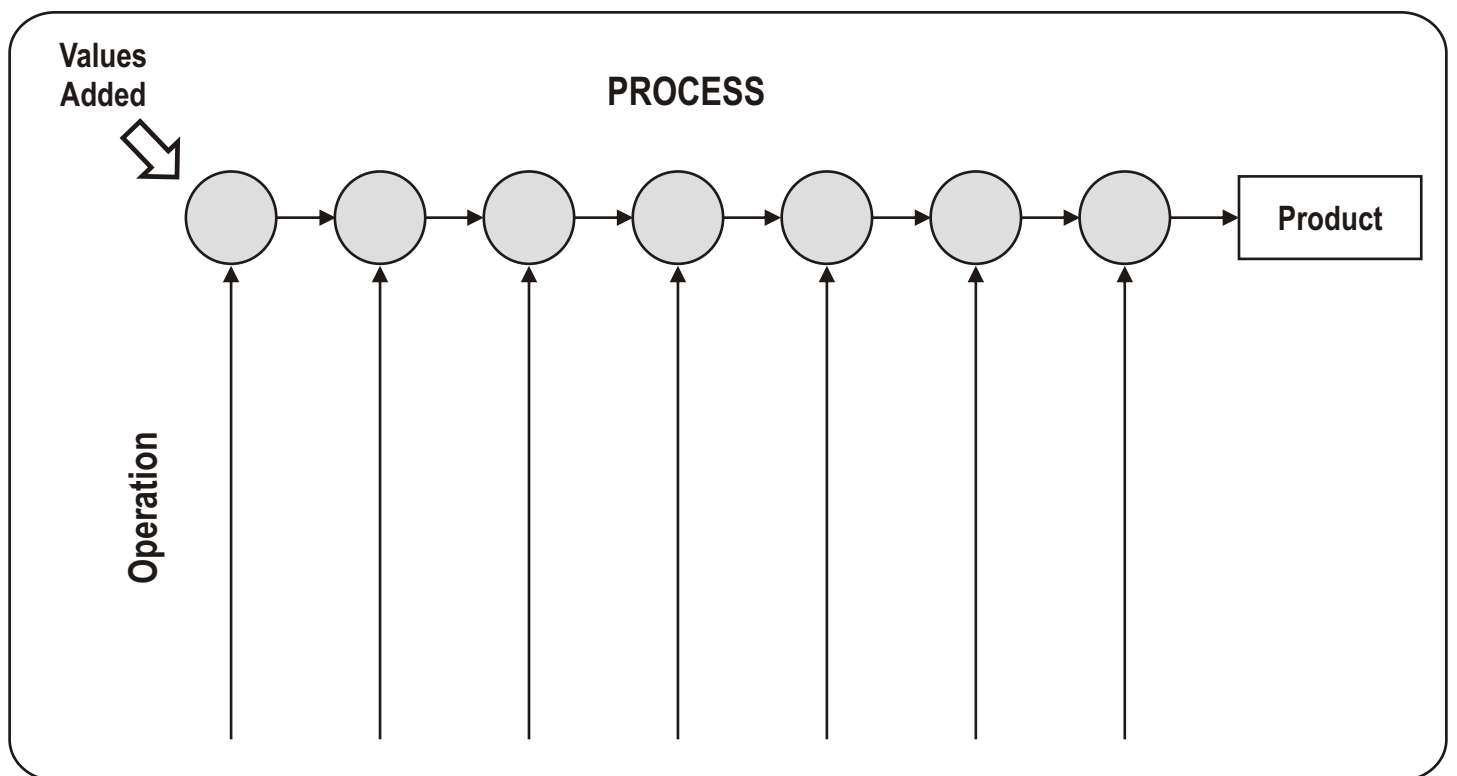
Figure 4.2: Models of the "Operation" and "Process" concepts.

1. GOALS - Each organizational level needs to establish goals that address the organization´s needs.
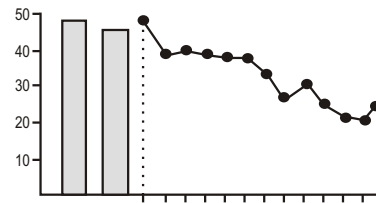
2. DESIGN - The organizational structure, processes, and operations need to include components that are necessary and configured to ensure that the goals will be achieved.

Process 1
Process 2
Process 3

Products

MARKET

3. MANAGEMENT - Each of the three levels requires methods to ensure that goals are kept current and are being achieved.

A   P

C   D
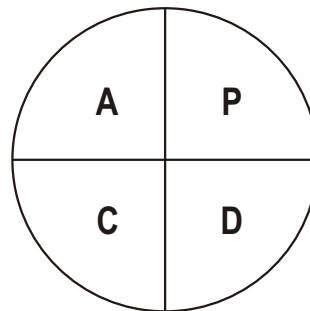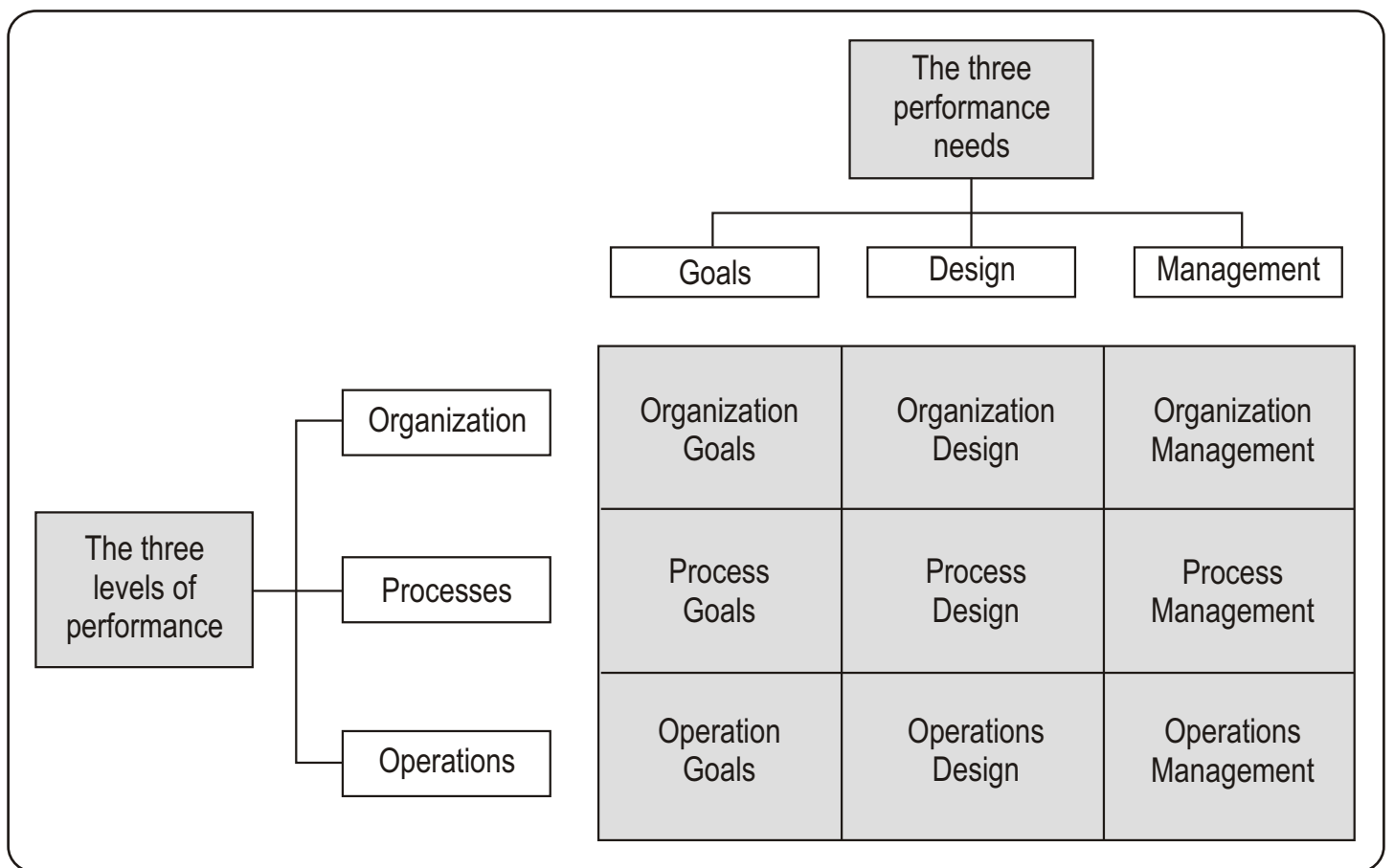
Figure 4.3: Rummler[25] three performance needs.

Figure 4.4: Rummler[25] nine performance variables.

GOAL

Increase EBITDA by 15% a year

Increase the production line´s OVERALL EFFICIENCY from 68% in January to 74% by December

Reduce IDLE HOURS for lack of raw material from 32h/month in January to 16h/month by December

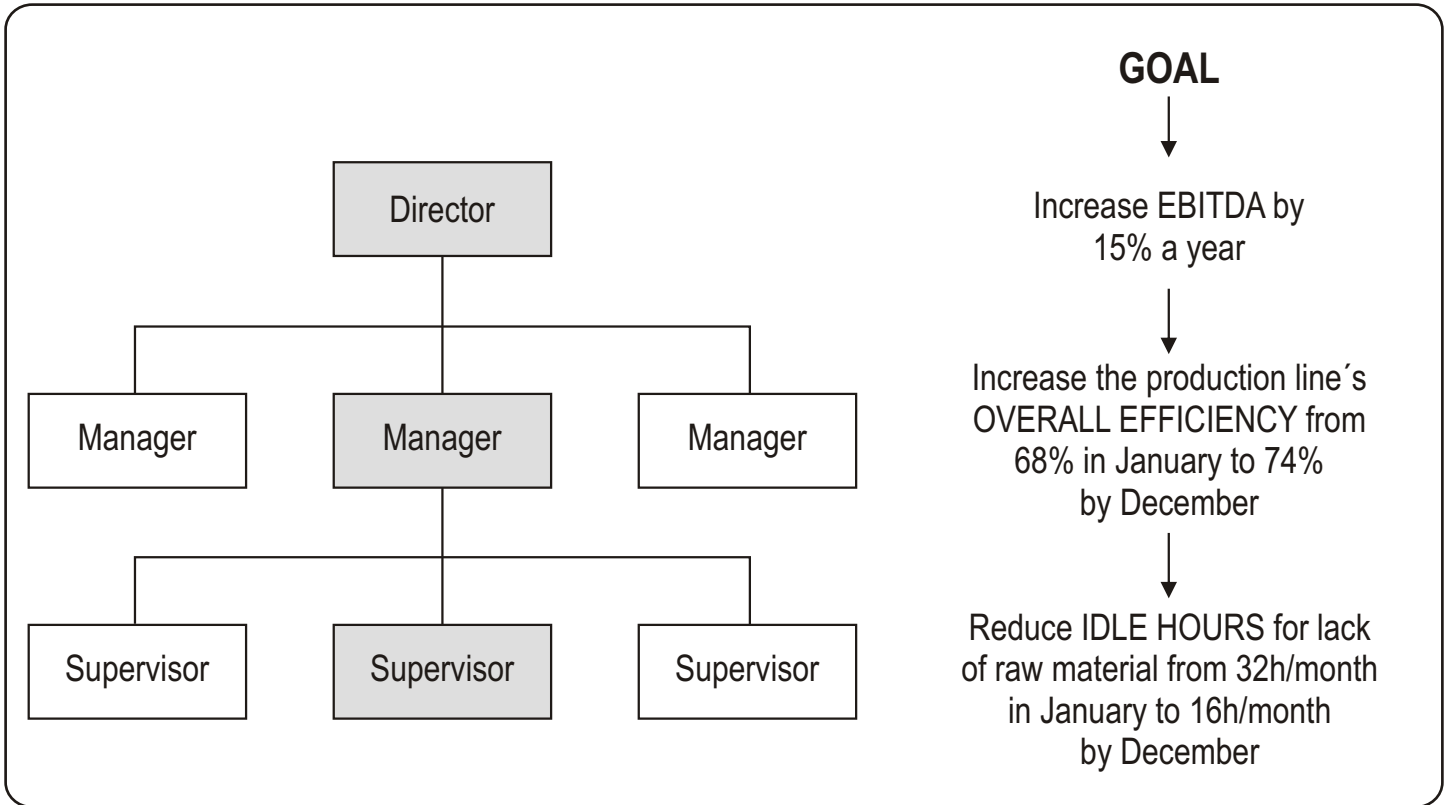Director

Manager | Manager | Manager

Supervisor | Supervisor | Supervisor

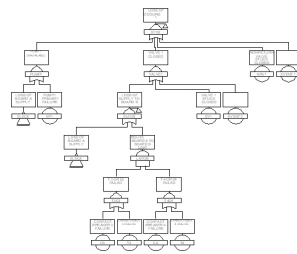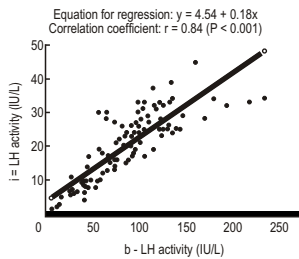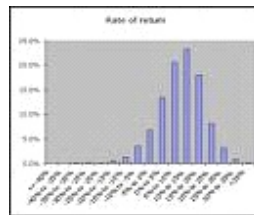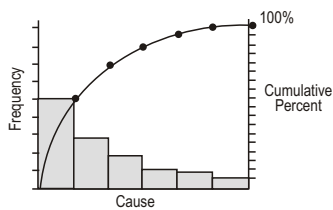Figure 4.5: Structural model showing the deployment of a goal.
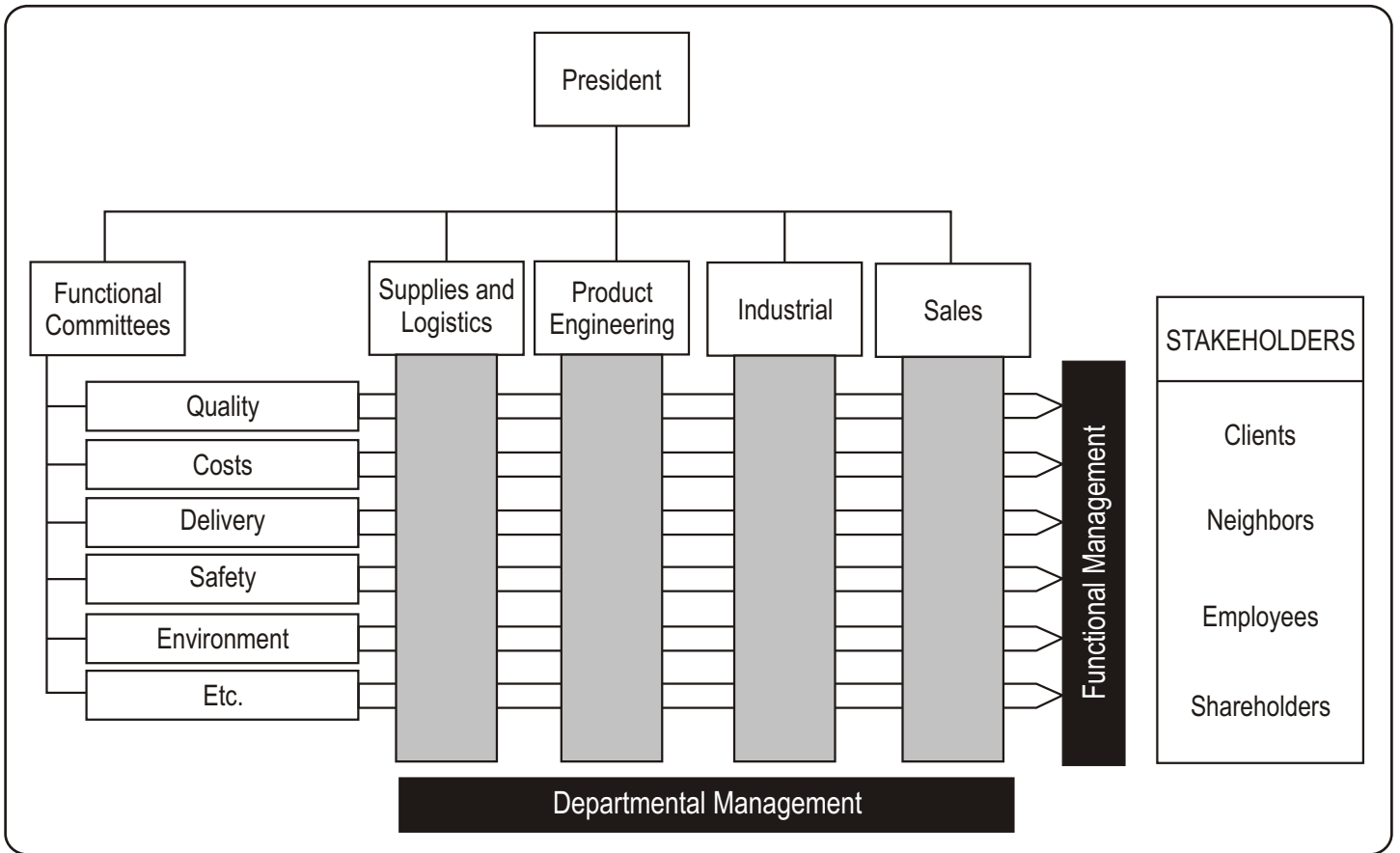
Figure 4.6: Organizational chart showing the relationship between Functional and Departmental Management.

24.100	25.570	24.000	25.210	2,348,918*
19.080	20.080	18.970	20.010	1,336,356
18.660	19.370	18.400	19.215	847,931
18.490	18.760	18.120	18.750	343,975
18.300	18.740	18.250	18.600	435,189
18.200	18.430	18.100	18.370	181,809
18.310	18.310	18.120	18.210	127,152
18.340	18.480	17.950	18.240	116,229
18.000	18.430	17.840	18.360	176,585
17.660	18.080	17.450	18.000	234,498
17.060	17.570	17.050	17.530	372,021
18.110	18.110	17.070	17.350	785,046
17.970	18.210	17.750	18.000	374,349
18.520	18.600	17.960	18.250	310,891
18.400	18.900	18.400	18.610	296,899
18.960	18.960	18.250	18.570	106,788
18.820	19.110	18.720	19.050	496,431
18.930	19.040	18.620	18.900	108,157
18.740	19.160	18.600	18.910	235,627
19.050	19.300	18.850	18.850	211,874
19.550	19.880	18.870	19.020	450,850
19.500	20.000	19.310	19.450	484,598
19.000	19.430	19.000	19.430	472,095
19.050	19.250	18.930	19.150	559,386
18.900	19.420	18.690	19.210	1,446,999

INFORMATION

Equation for regression: y = 4.54 + 0.18x
Correlation coefficient: r = 0.84 (P < 0.001)

**INFORMATION
ANALYSIS**

Analysis Conclusion

Maximum yield is obtained if temperature
is kept between 80ºC and 90ºC, and
agitation at 500 rpm!

KNOWLEDGE

Figure 5.1: Knowledge extraction from information and attendant new
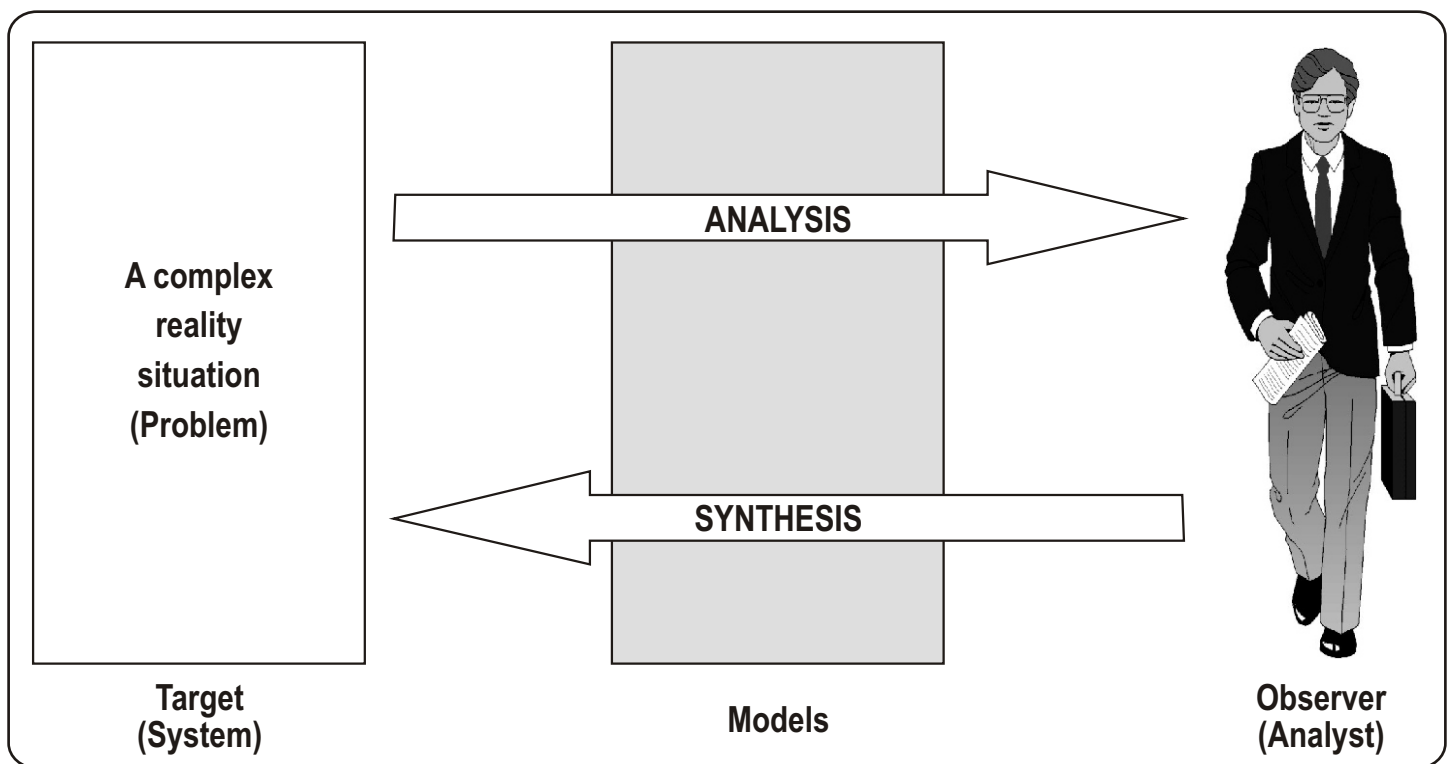results (part of the Cartesian method).

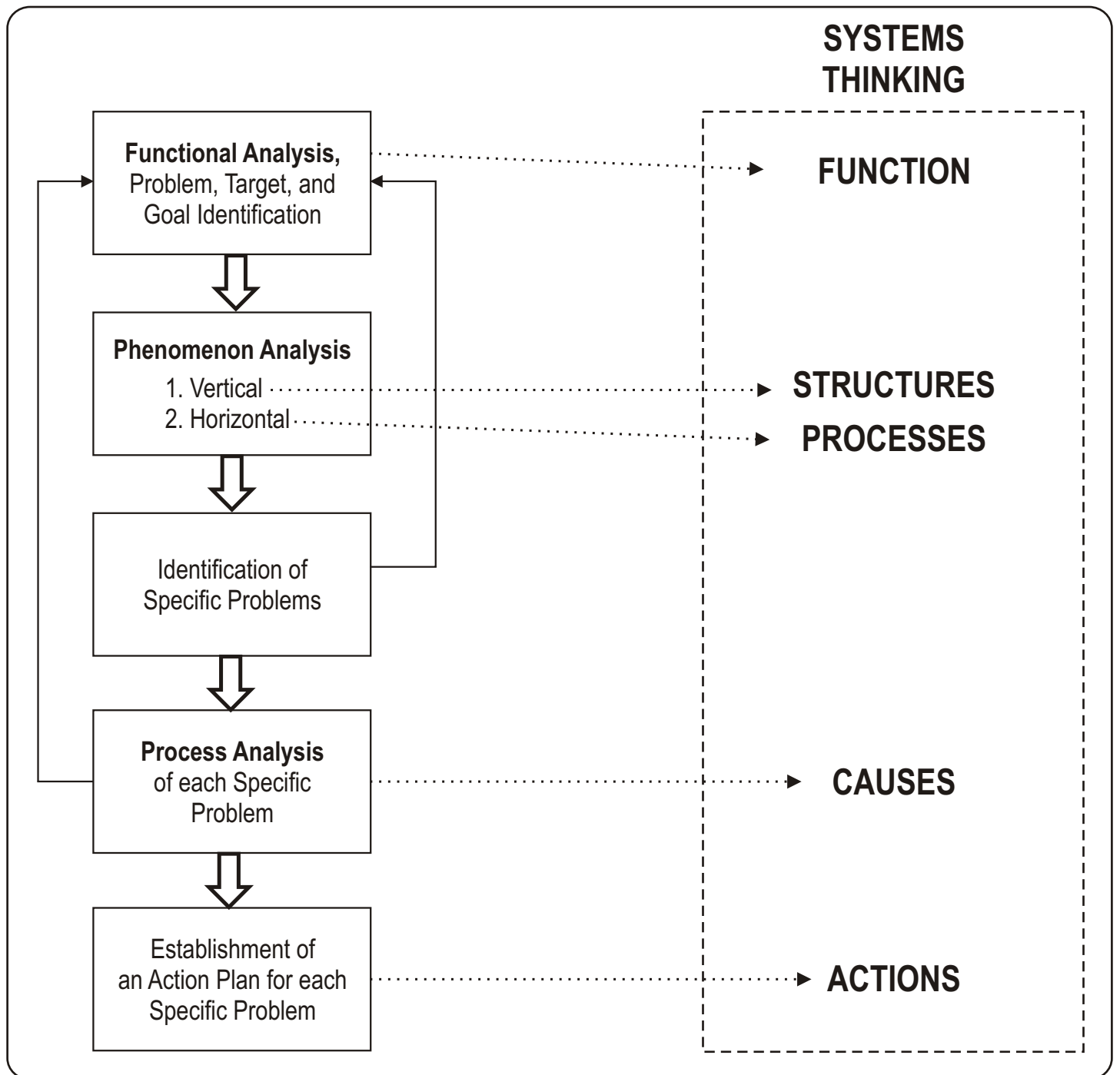Figure 5.2: Use of models for understanding complex systems.

Figure 5.3: Model of the Simplified Process of Planning.

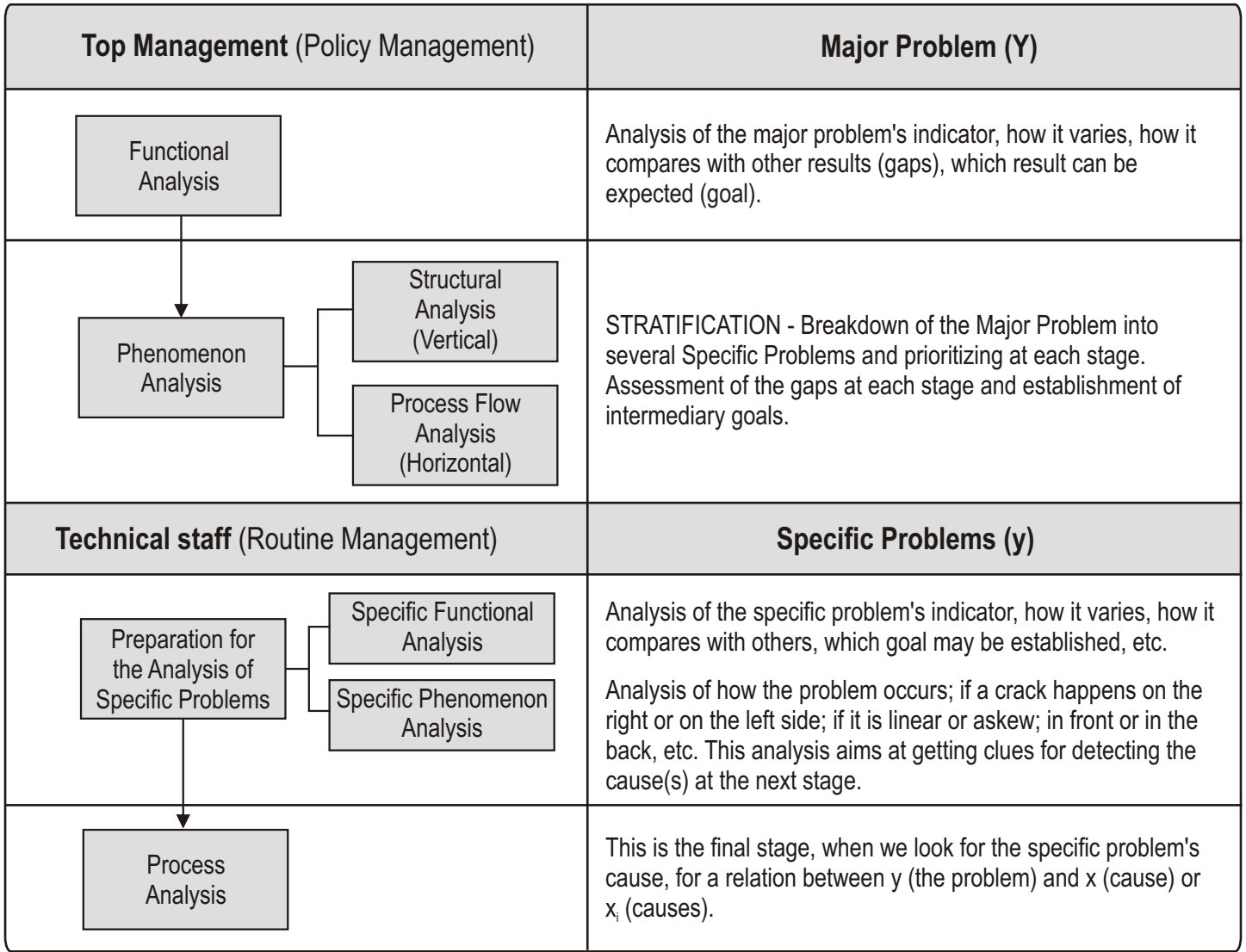| Top Management (Policy Management)	Major Problem (Y)
Functional Analysis	Analysis of the major problem's indicator, how it varies, how it compares with other results (gaps), which result can be expected (goal).
Phenomenon Analysis — Structural Analysis (Vertical) / Process Flow Analysis (Horizontal)	STRATIFICATION - Breakdown of the Major Problem into several Specific Problems and prioritizing at each stage. Assessment of the gaps at each stage and establishment of intermediary goals.
Technical staff (Routine Management)	**Specific Problems (y)**
Preparation for the Analysis of Specific Problems — Specific Functional Analysis / Specific Phenomenon Analysis	Analysis of the specific problem's indicator, how it varies, how it compares with others, which goal may be established, etc. Analysis of how the problem occurs; if a crack happens on the right or on the left side; if it is linear or askew; in front or in the back, etc. This analysis aims at getting clues for detecting the cause(s) at the next stage.
Process Analysis	This is the final stage, when we look for the specific problem's cause, for a relation between y (the problem) and x (cause) or x_i (causes).

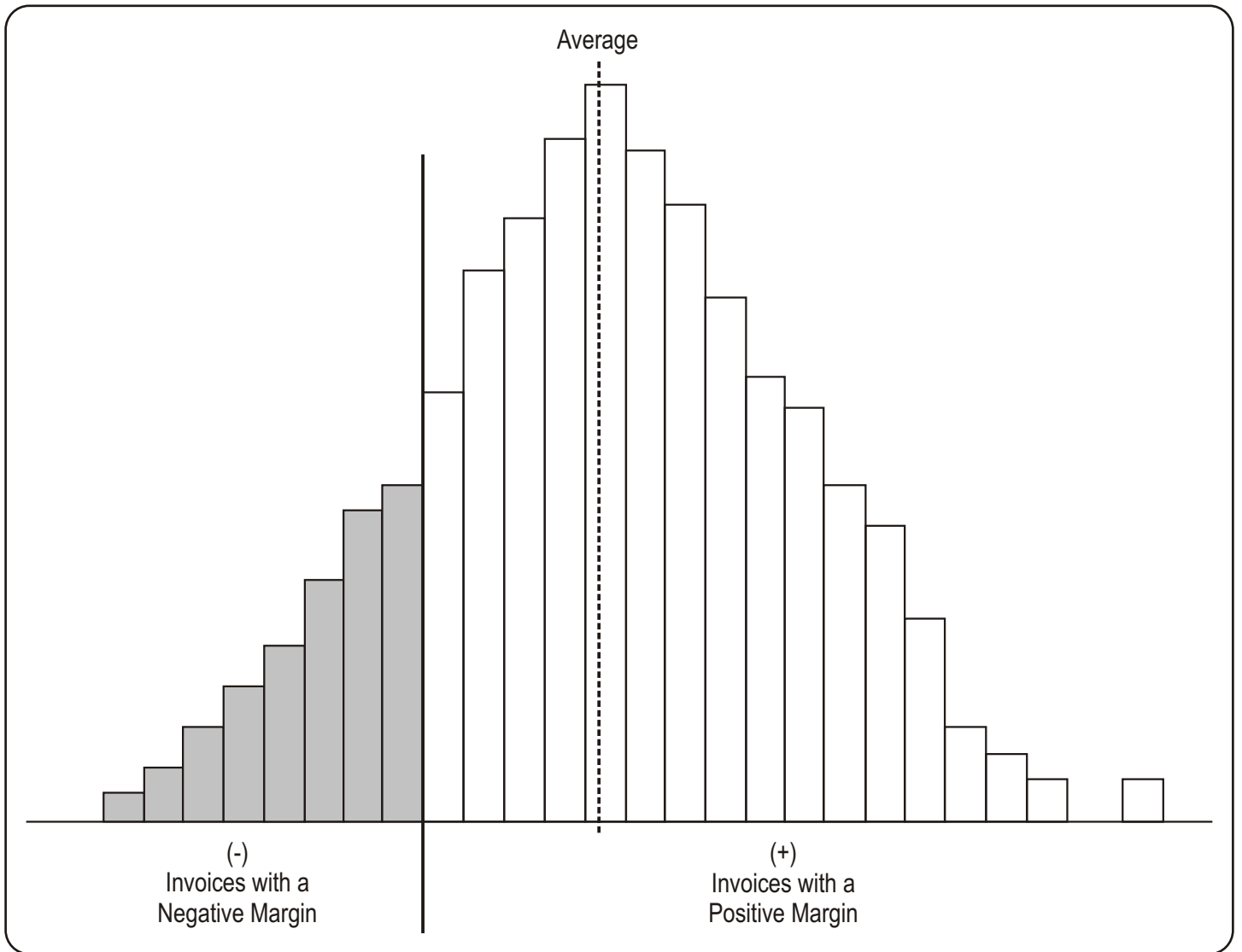Figure 6.1: Model of the General Method of Analysis of a Top Management's Major Problem.

Figure 6.2: Histogram showing the distribution of the sales yield variation.
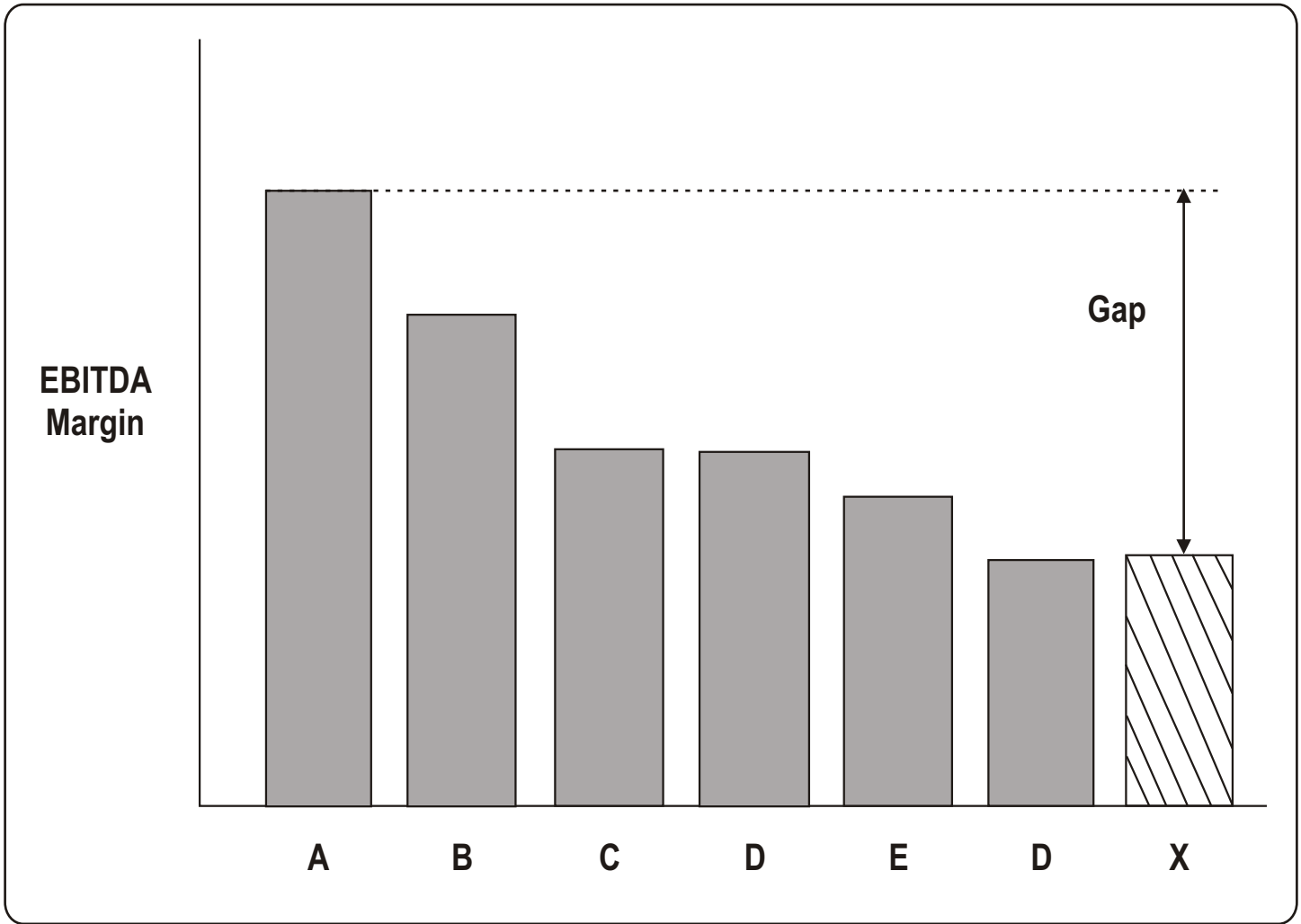
Figure 6.3: Model showing a comparison of EBITDA Margin indicators between company X and other companies in the world.
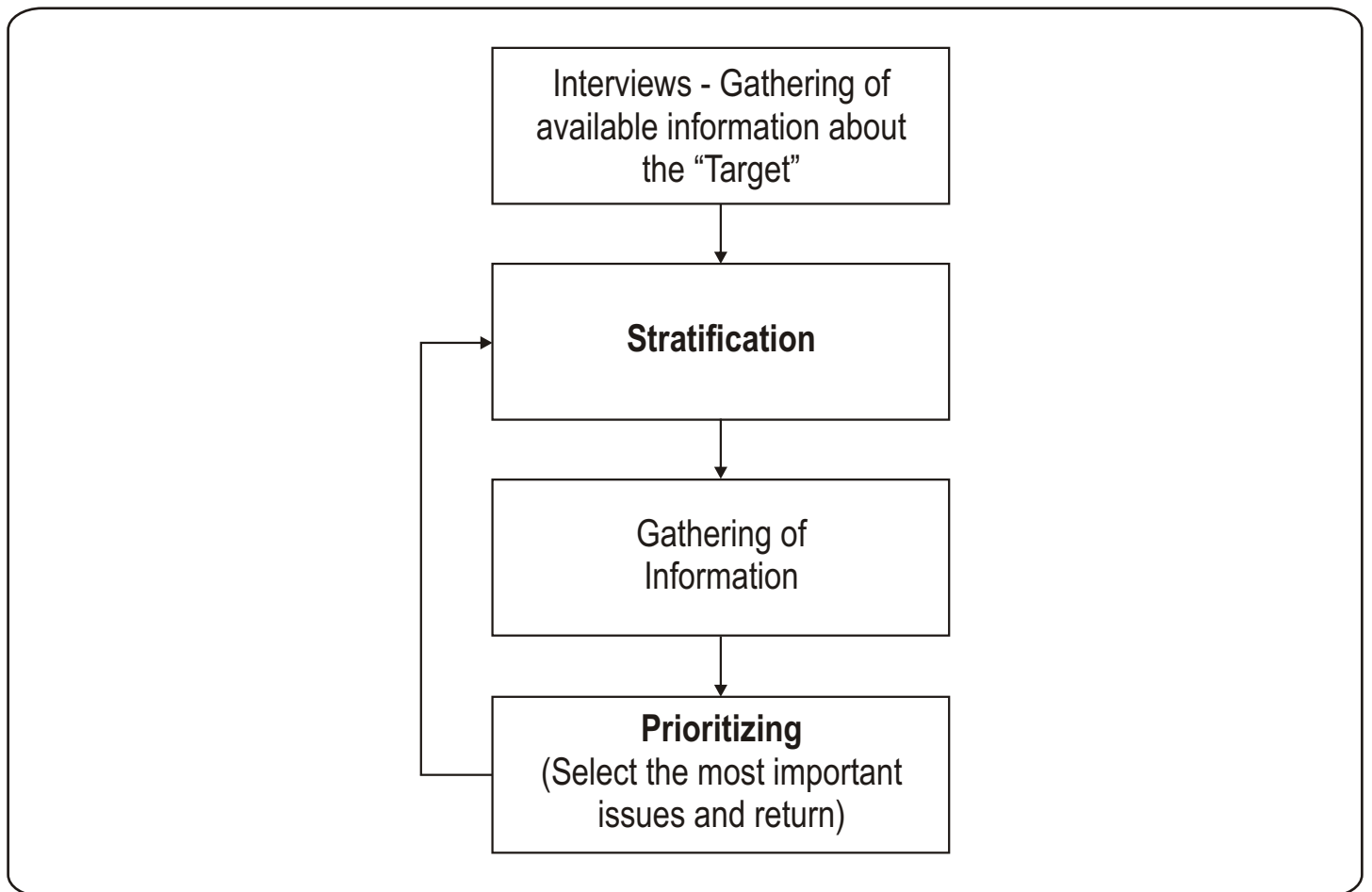
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│                                                                  │
│              ┌──────────────────────────────┐                    │
│              │   Interviews - Gathering of   │                   │
│              │  available information about  │                   │
│              │          the "Target"         │                   │
│              └──────────────────────────────┘                    │
│                             │                                    │
│                             ▼                                    │
│              ┌──────────────────────────────┐                    │
│        ┌────▶│        Stratification          │                  │
│        │     └──────────────────────────────┘                    │
│        │                    │                                    │
│        │                    ▼                                    │
│        │     ┌──────────────────────────────┐                    │
│        │     │         Gathering of          │                   │
│        │     │          Information          │                   │
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│        │                    │                                    │
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│        │     │         Prioritizing          │                   │
│        └─────│  (Select the most important   │                   │
│              │        issues and return)     │                   │
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Figure 6.4: Model of the Phenomenon Analysis Process.
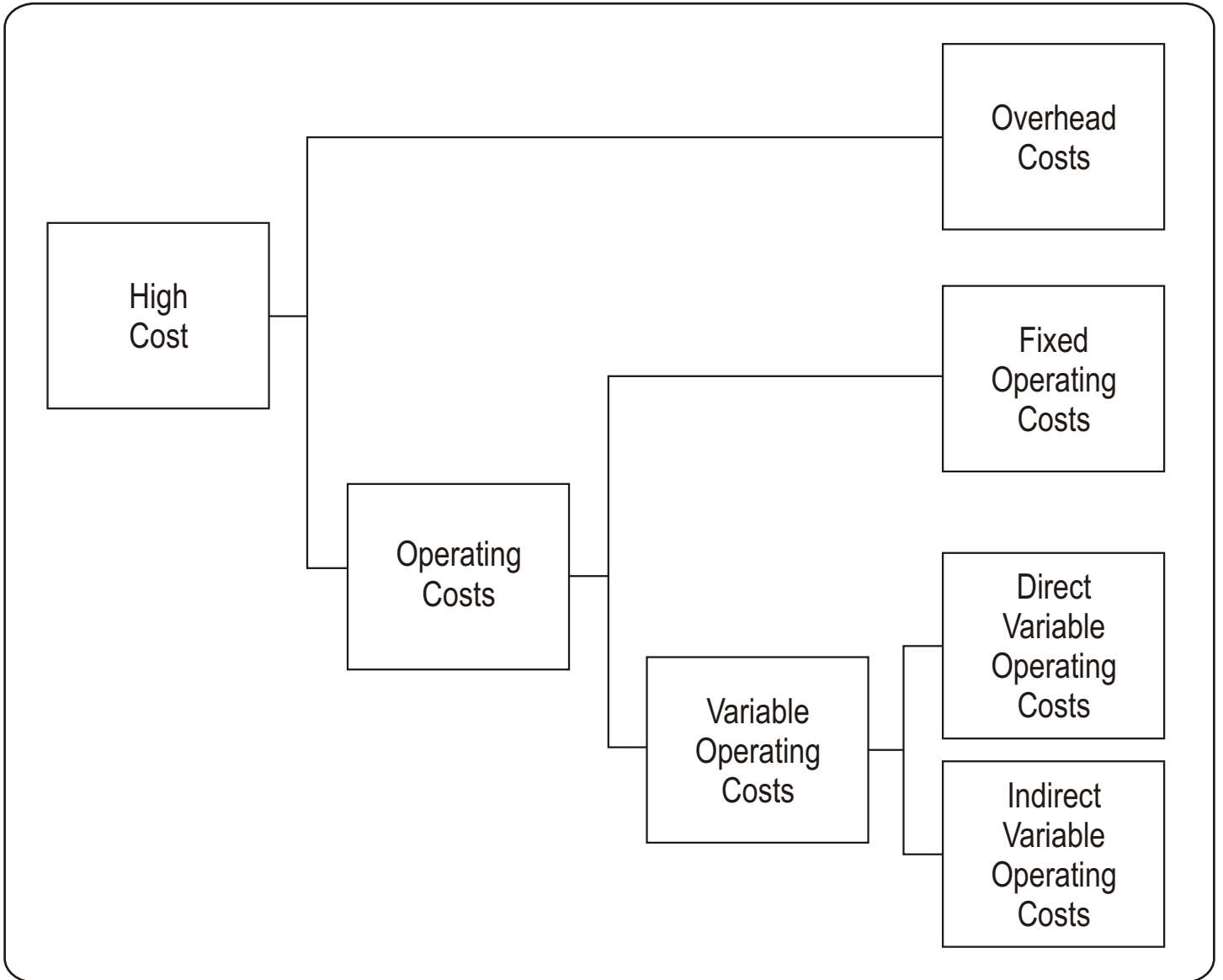
Figure 6.5: Diagram of the initial stratification of the organization's costs.
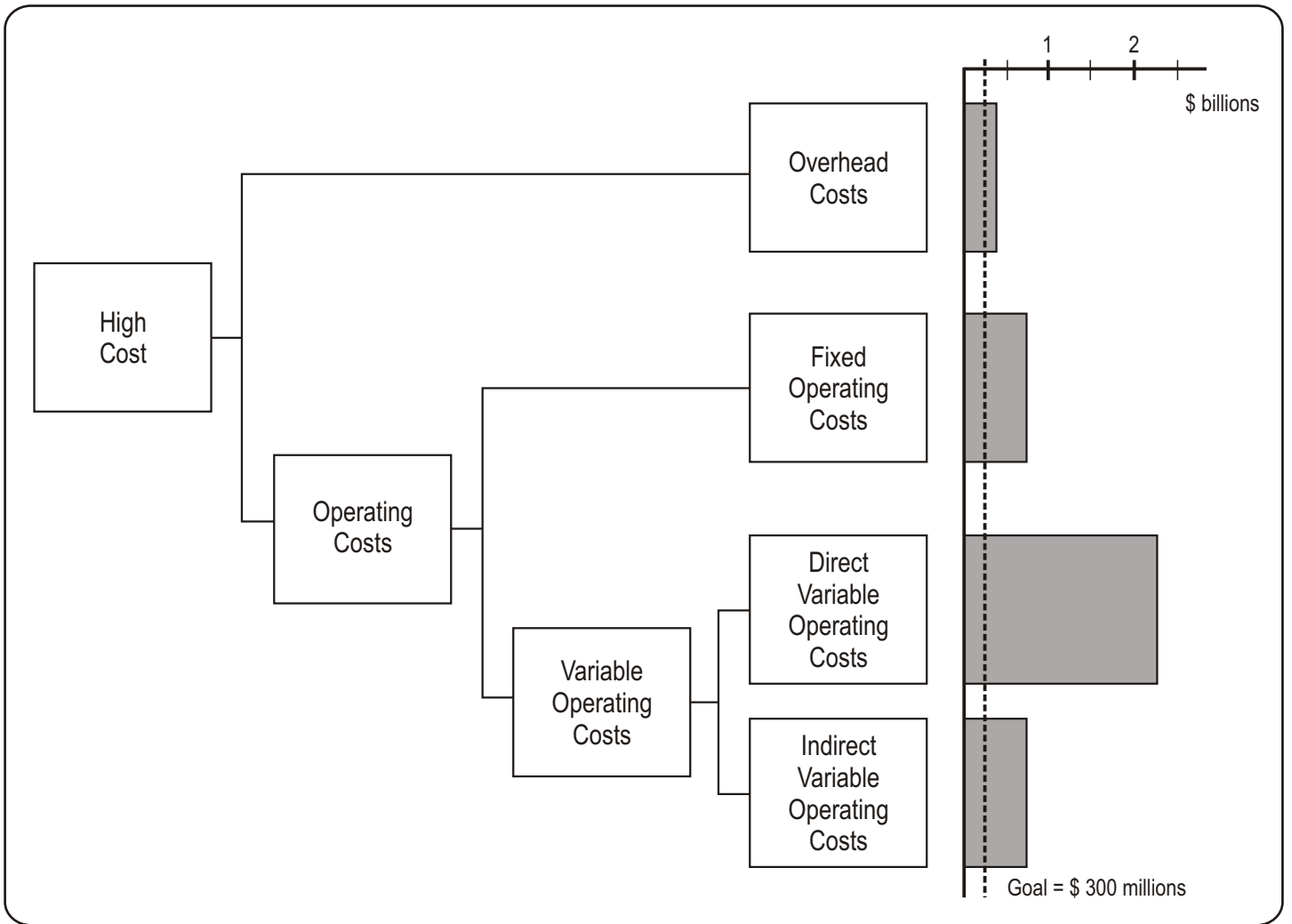
Figure 6.6: Initial costs stratification and prioritizing.
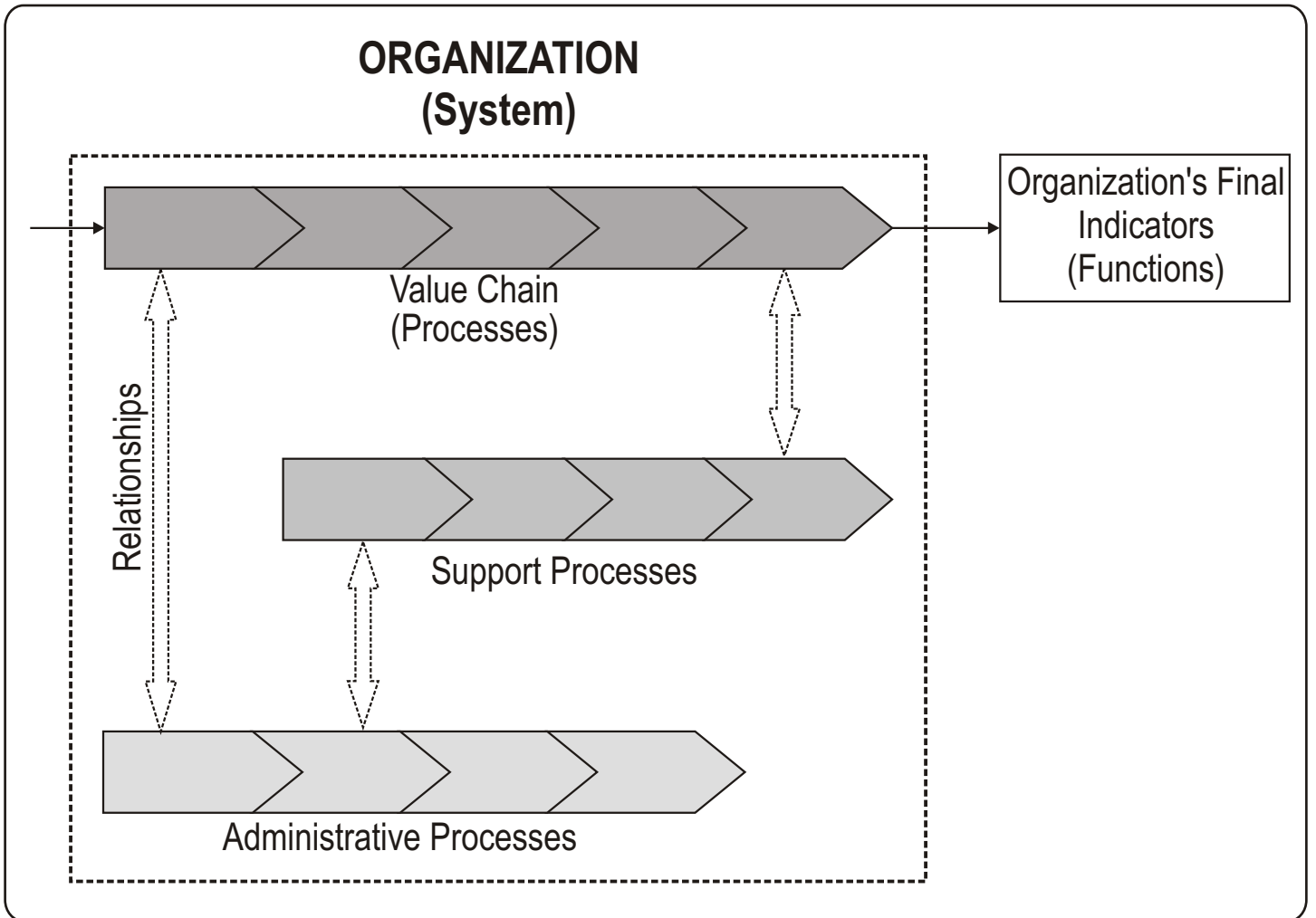
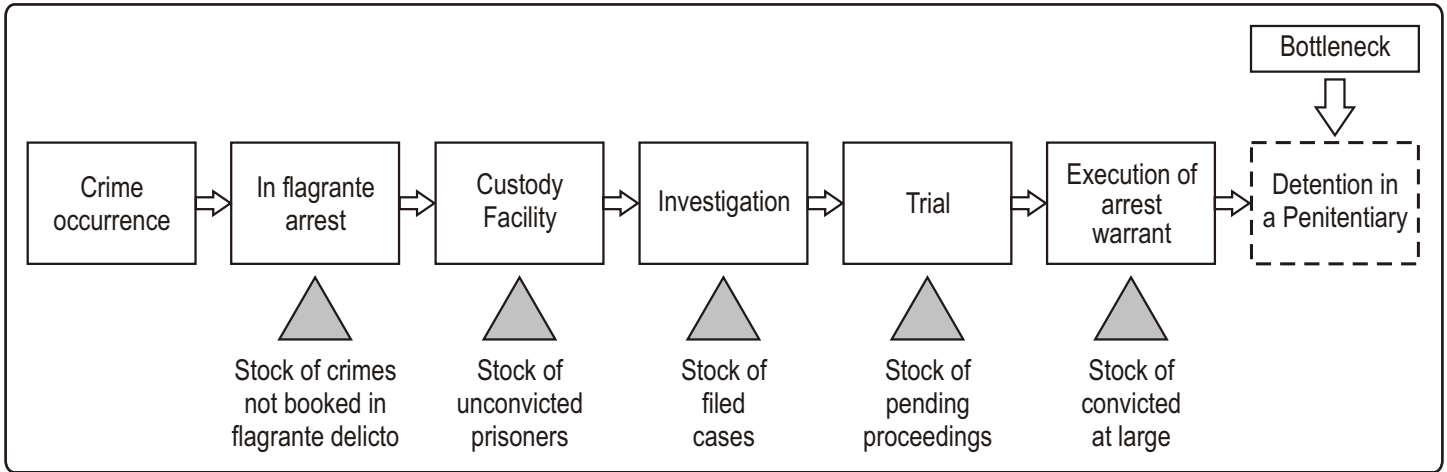Figure 6.7: Model of the General Map of an organization's processes.

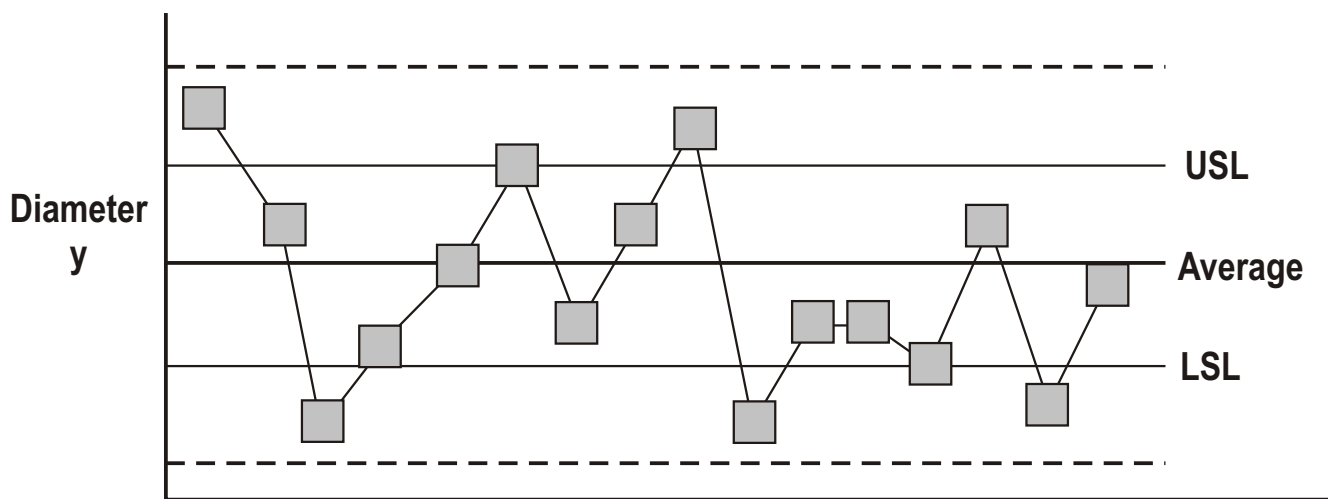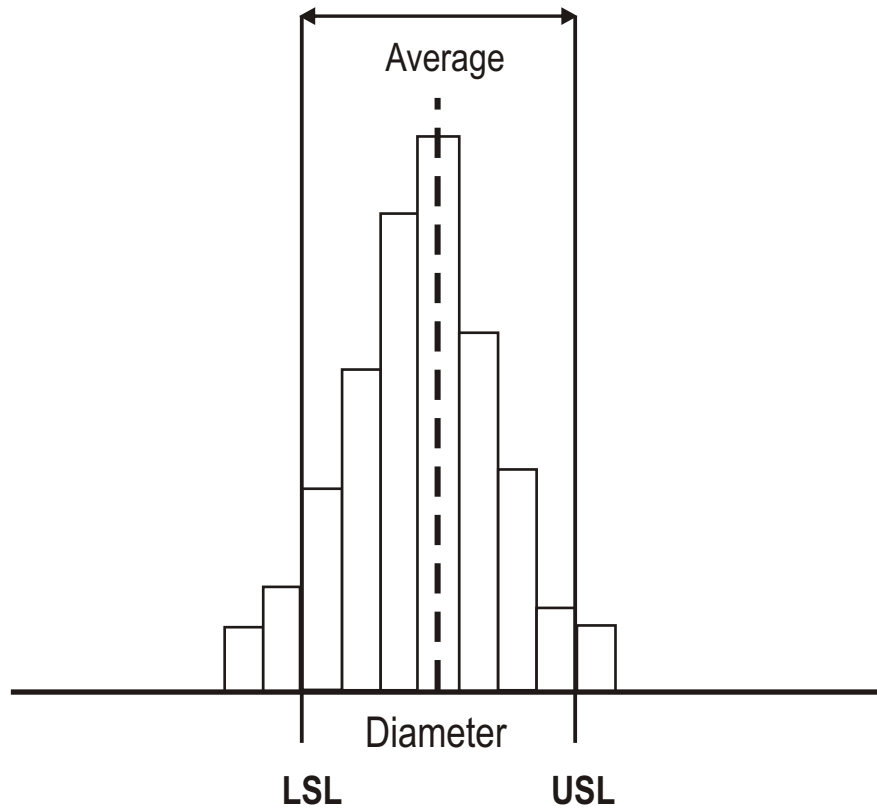Figure 6.8: Example of a horizontal analysis.

Figure 6.9: Functional Analysis of the variability of y (bottle's diameter).
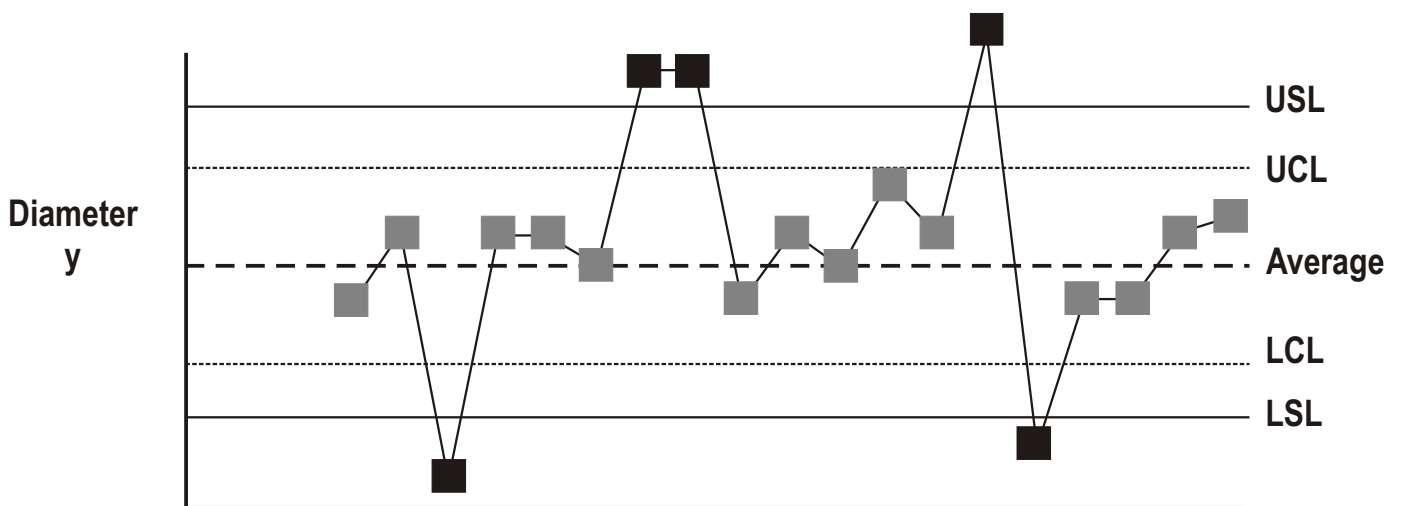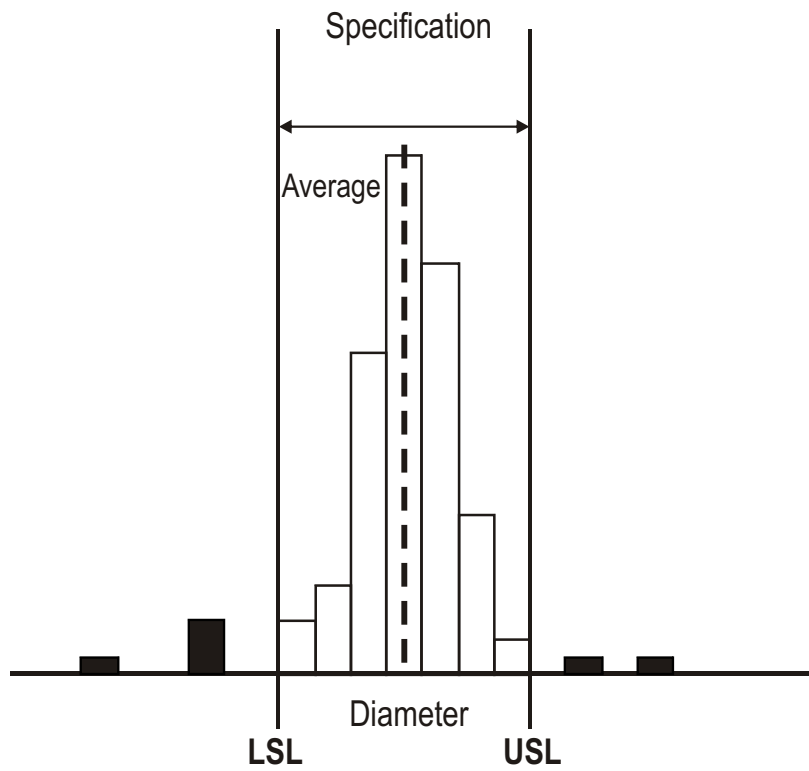(LSL=Lower Specification Limit; USL=Upper Specification Limit.)

Figure 6.10: Functional Analysis of variability of y (bottle's diameter).
(UCL=Upper Control Limit; LIC=Lower Control Limit.)
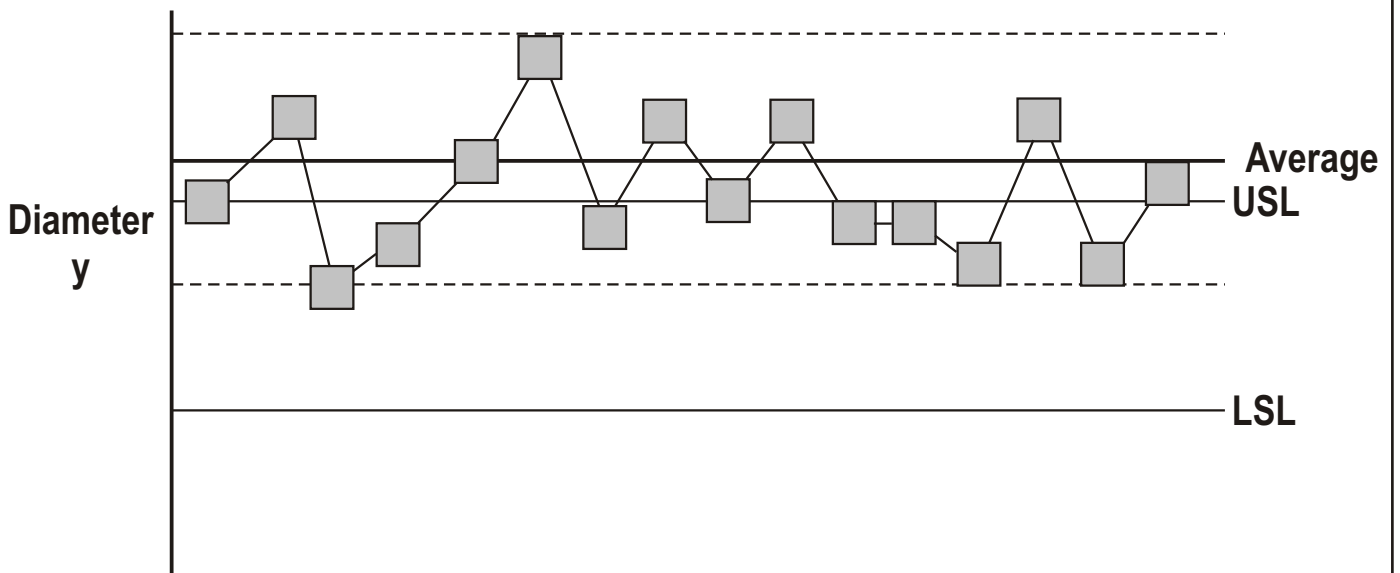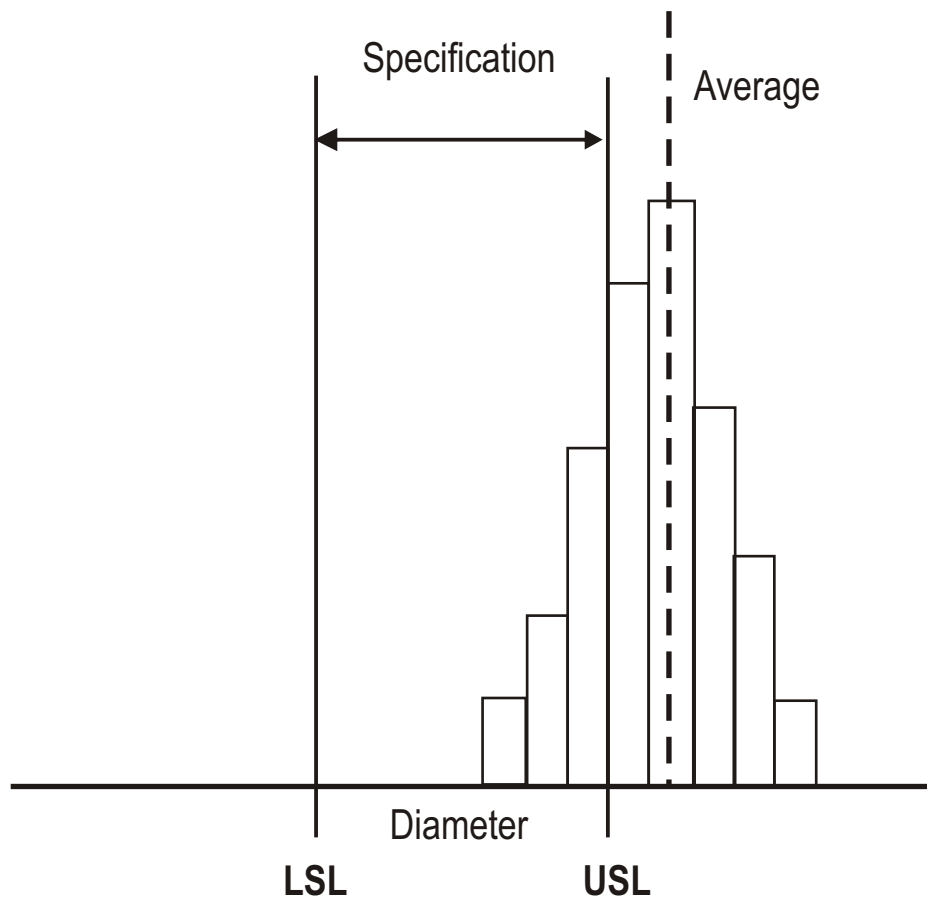
Figure 6.11: Functional Analysis of the variability of y (bottle diameter).

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┌─────────────────────────────────┐
│  Determination of the specific  │
│  problem's new target and evaluation │
│  of the most appropriate kind of solution │
└─────────────────────────────────┘
                 │
                 ▼
┌─────────────────────────────────┐
│     Brainstorming session with   │
│  people with knowledge of the Target │
└─────────────────────────────────┘
                 │
                 ▼
┌─────────────────────────────────┐
│     Determination of the most    │
│     probable causes (hypotheses) │
└─────────────────────────────────┘
                 │
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│     Determination of the gaps of │
│     information and data collection │
└─────────────────────────────────┘
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┌─────────────────────────────────┐
│     Testing of the most probable │
│   causes (hypotheses' verification) │
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│        Consistency Testing       │
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Figure 6.12: General Method of Process Analysis.
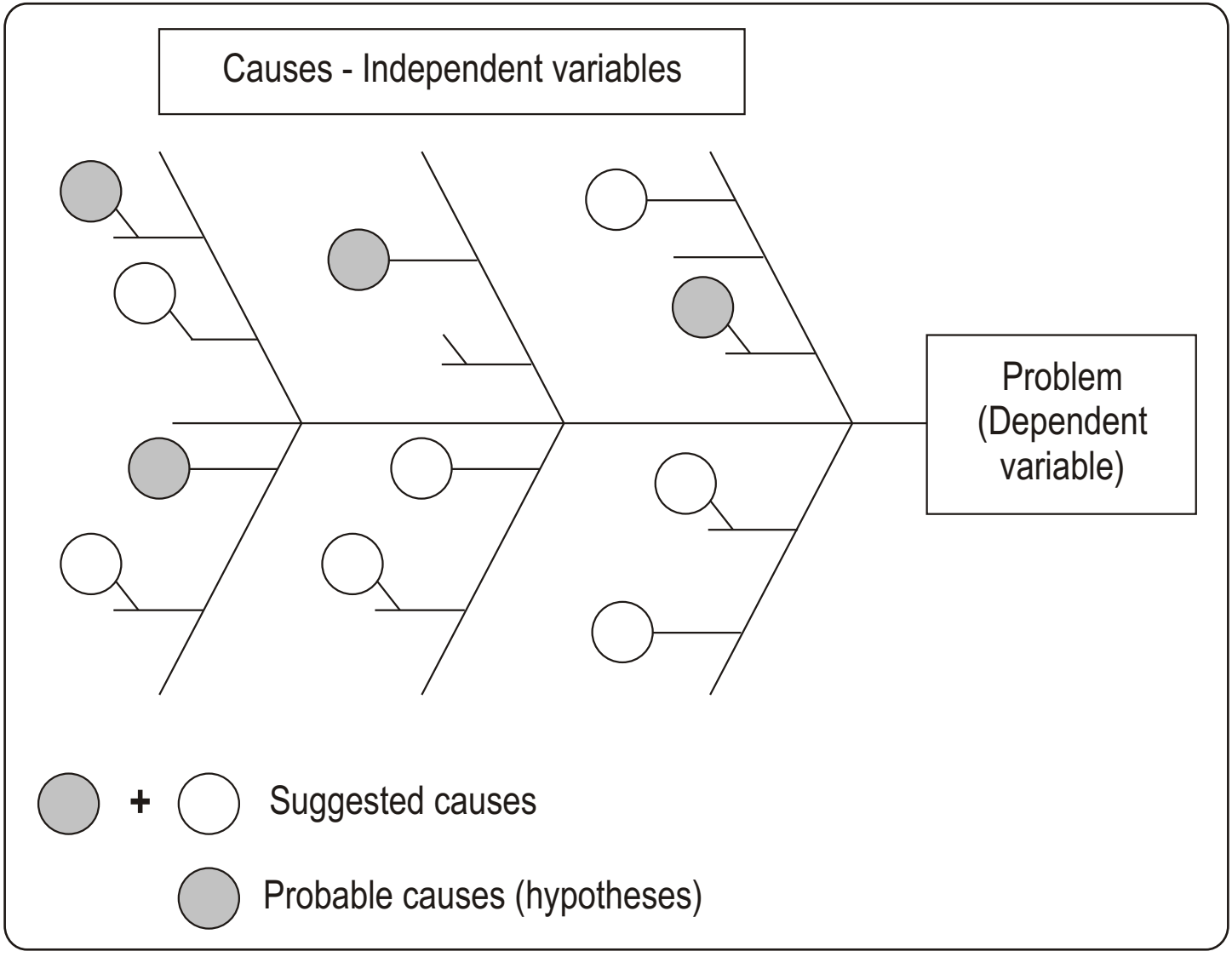
Figure 6.13: Model of the Ishikawa Diagram (or, Cause-and-Effect Diagram), which shows the relationship between variables.
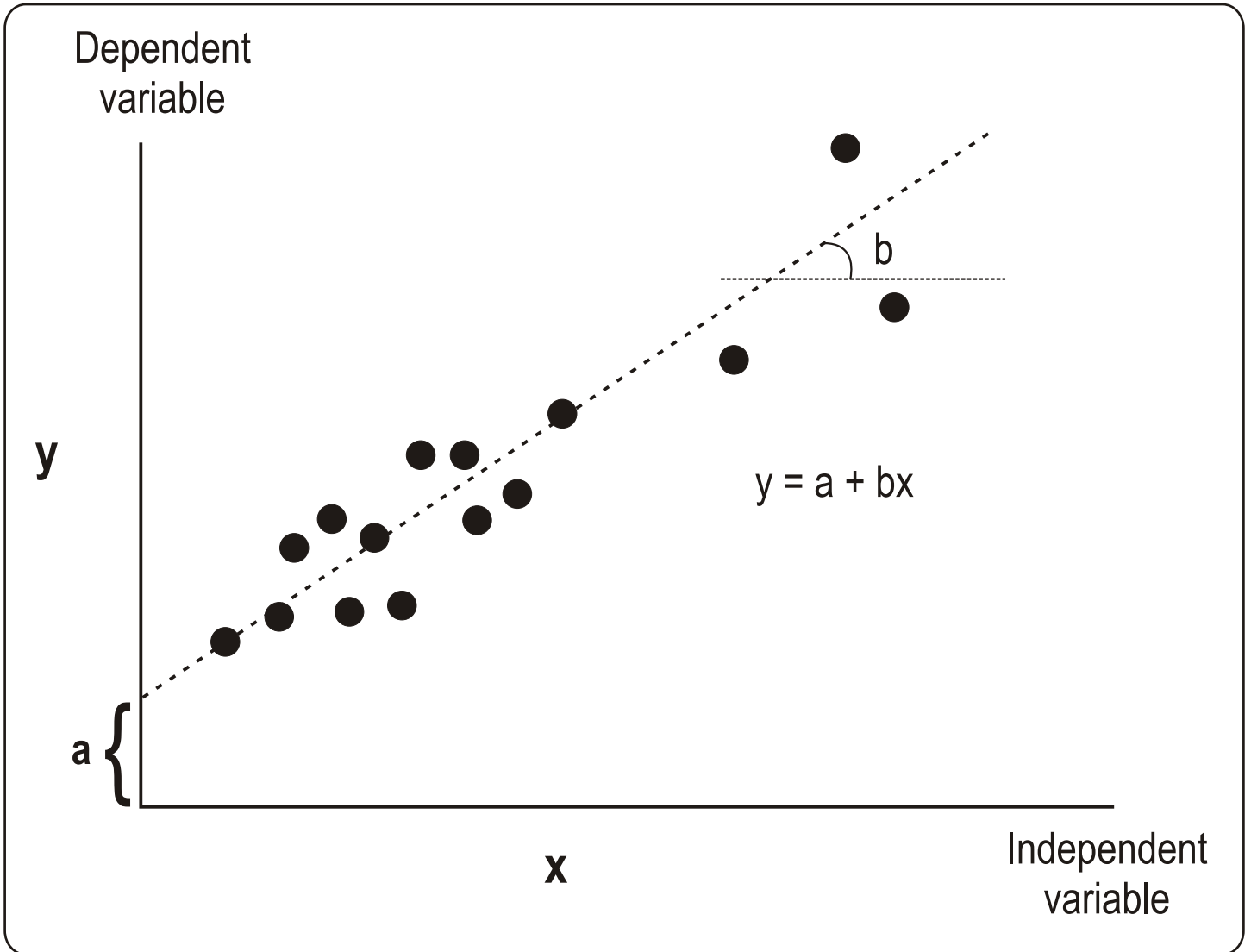
Figure 6.14: Chart model showing the correlation between problem y and hypothesis x.
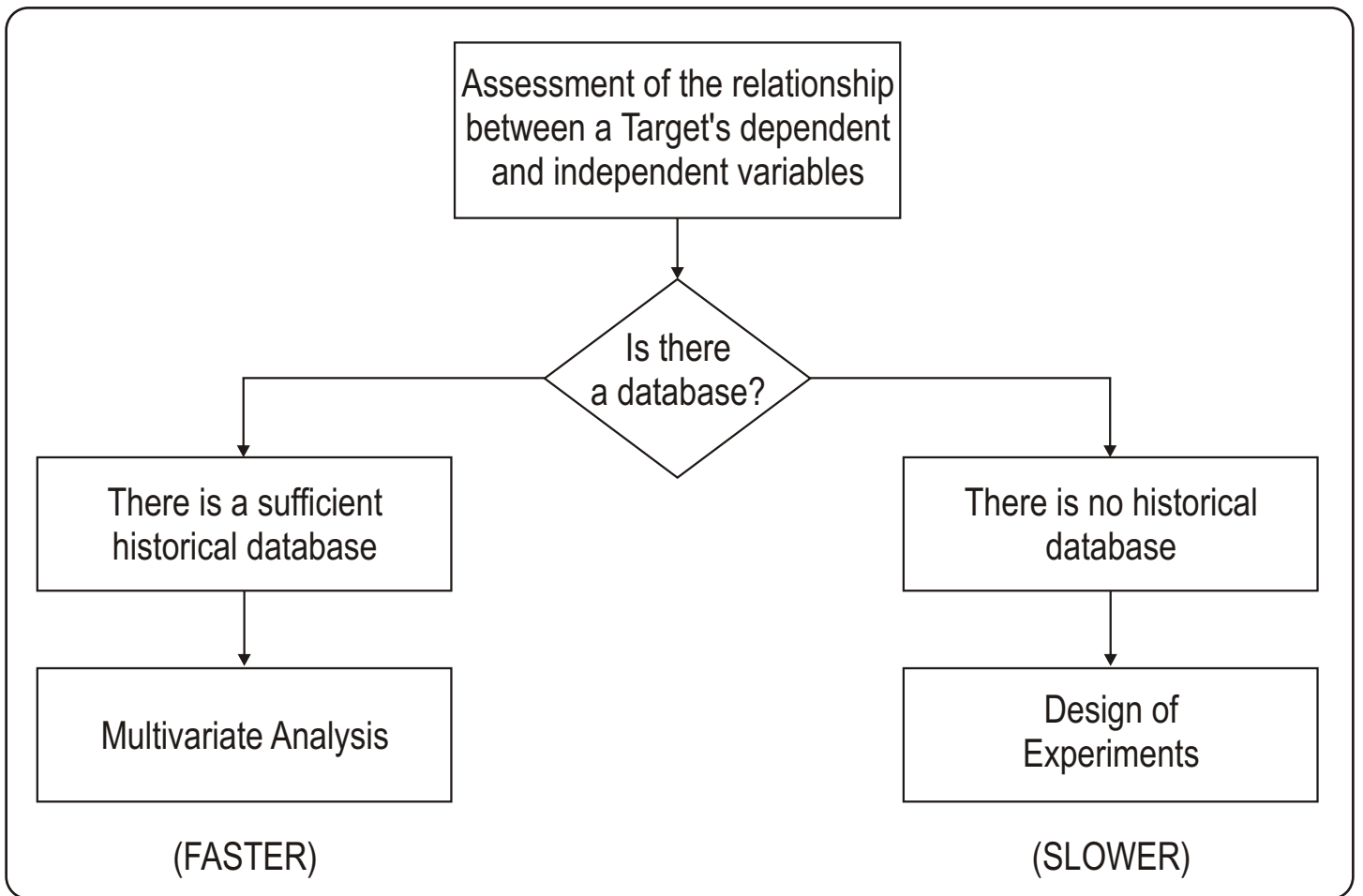
Figure 6.15: Model showing how to choose between available statistics tools.
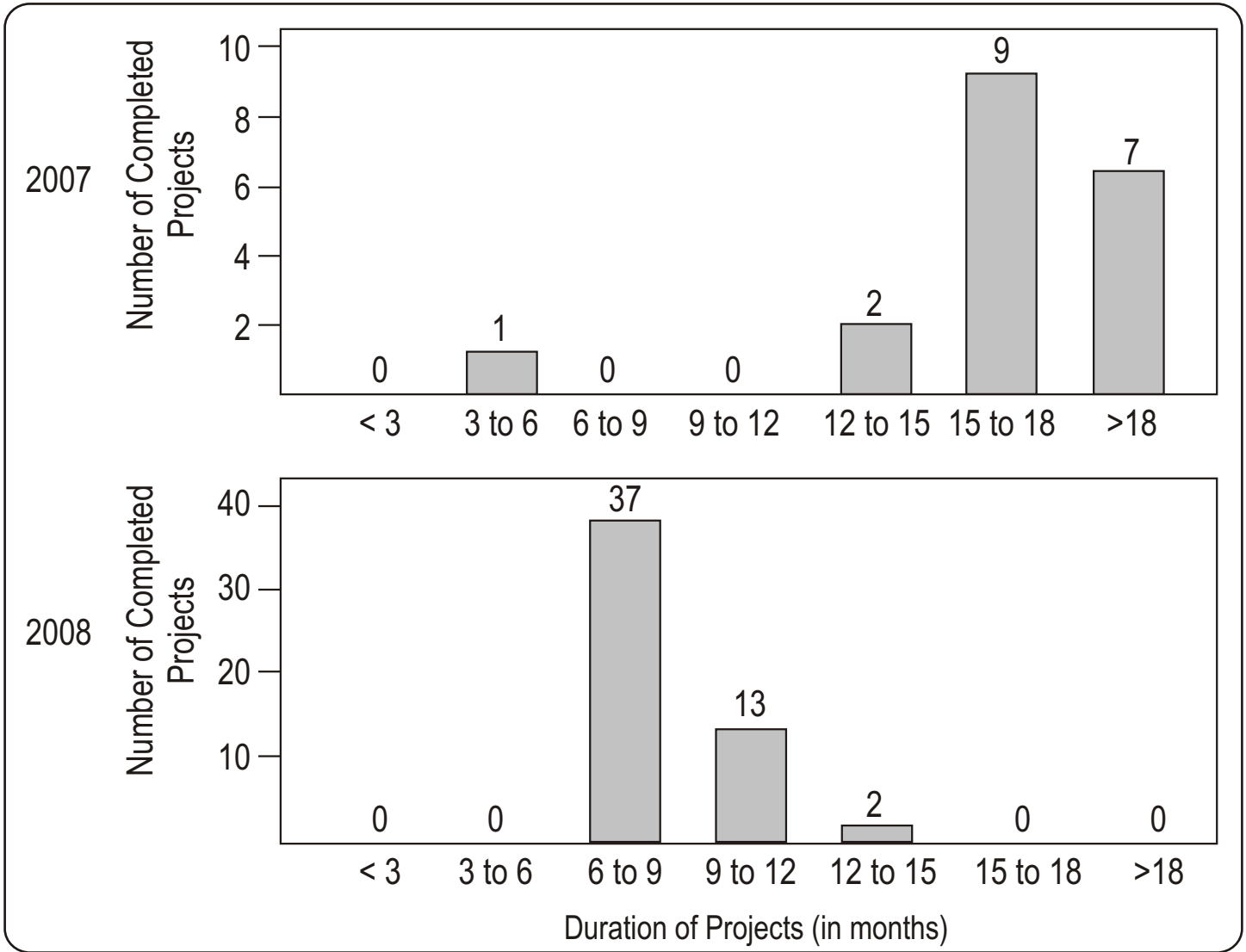
Figure 6.16: Duration of projects as managerial and analytical experience increases
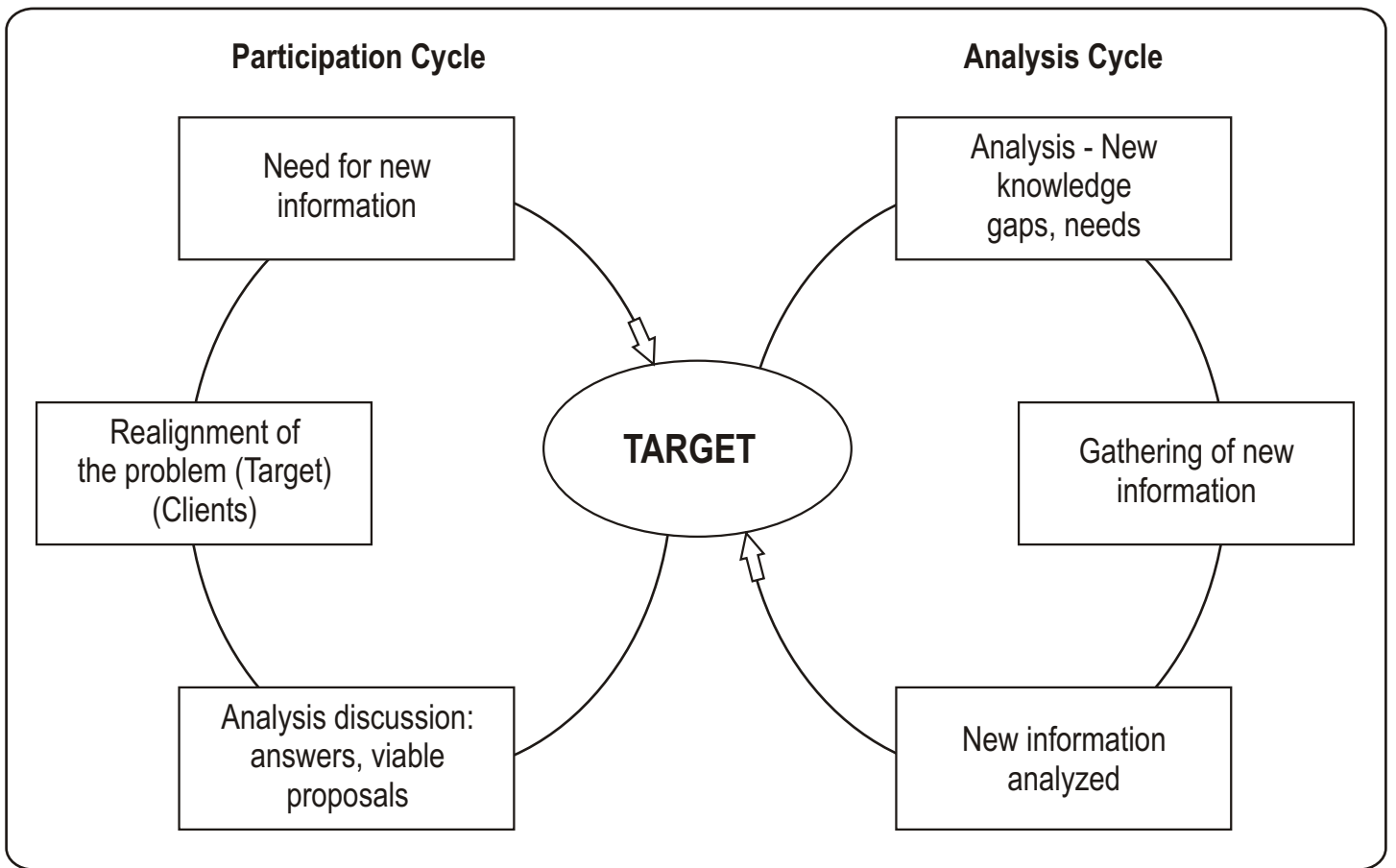(Charts by courtesy of Suzano Papel e Celulose).
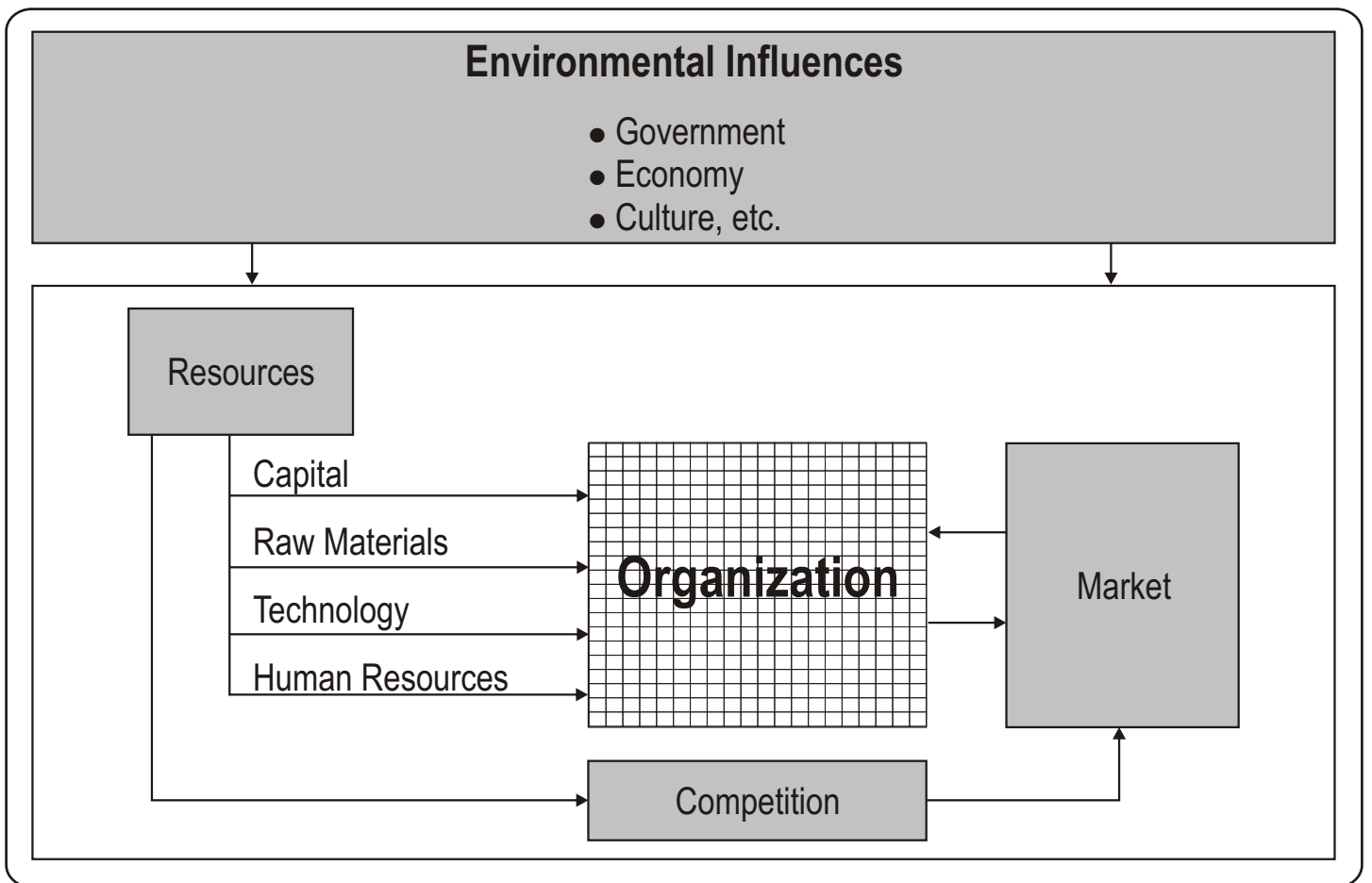
Figure 7.1: Model of a Target-centric approach[3].

Figure 8.1: Model of an organization as an adaptable system[25].
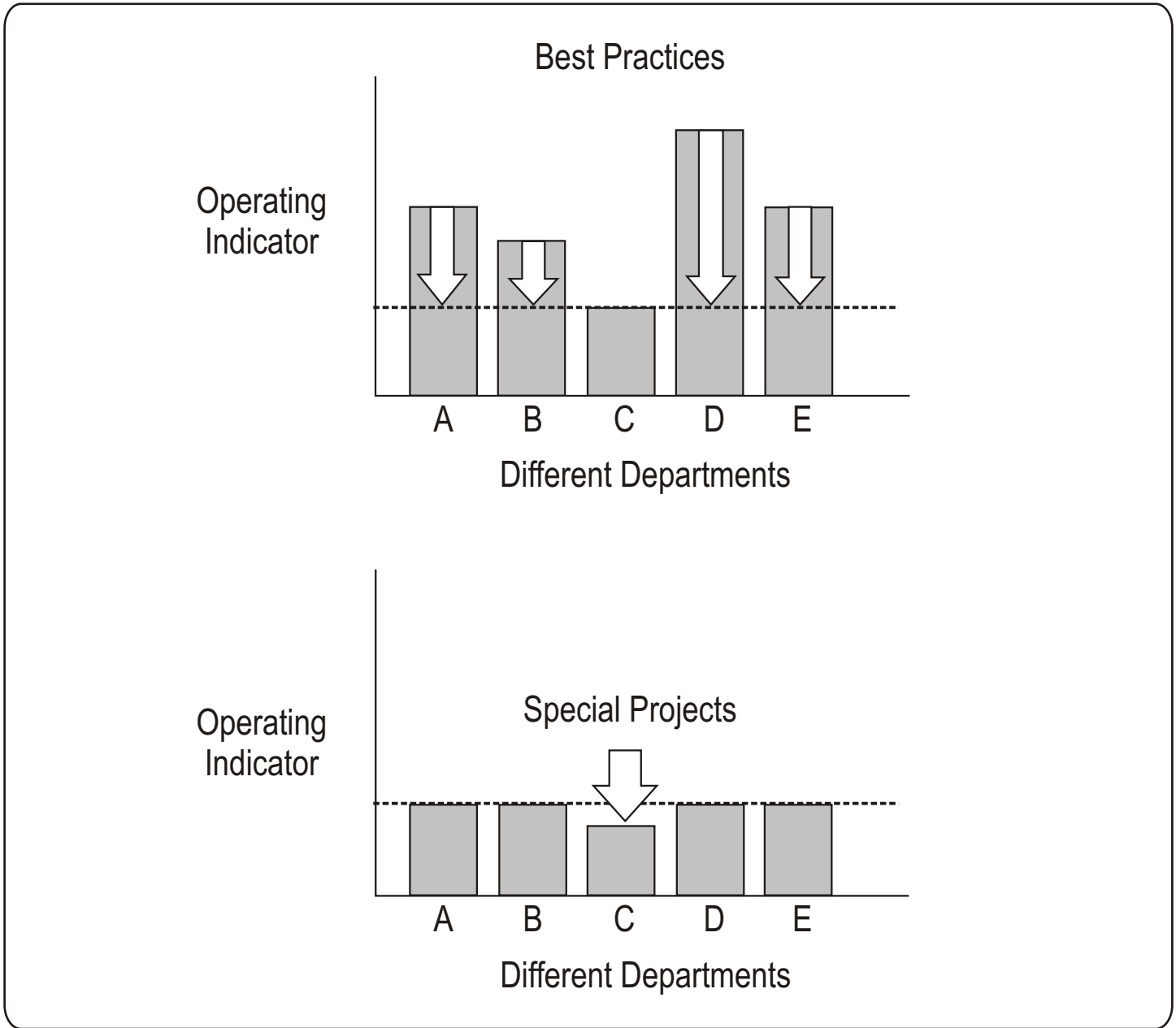
Figure 8.2: Model of the two improvement mechanisms.
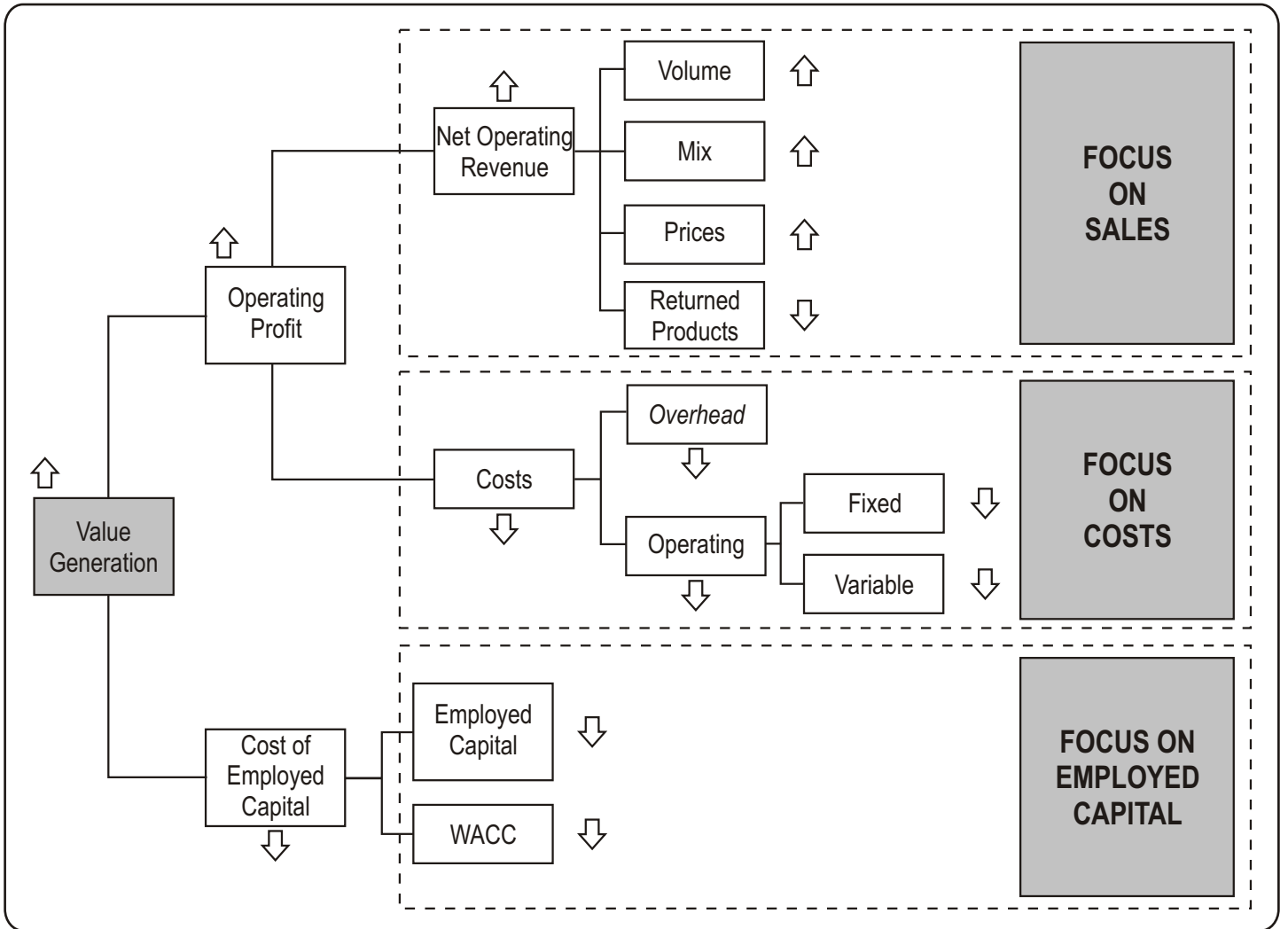
Figure 8.3: Simplified model of Value Generation in an organization
(WACC = Weighted Average Cost of Capital).

A

Support Activities

Company's Management Infrastructure

Human Resources Management

Marketing, Sales, and R&D

Accounting, Finance, and Purchasing

| Entrance Logistics | Industrial Operations | Distribution Centers | Exit Logistics | Client Services |

Profit

Primary Activities

B

Support Activities

Company's Management Infrastructure

STATIC

Accounting, Finance, and Purchasing

DYNAMIC

Profit

Primary Activities

C

Support Activities

Company's Management Infrastructure

Overhead Costs

Accounting, Finance, and Purchasing

Operating Costs

Fixed Costs

Variable Costs

Profit

Primary Activities

Figure 8.4: Model of the Nature of Costs.

Follow-up of the Actions' Execution
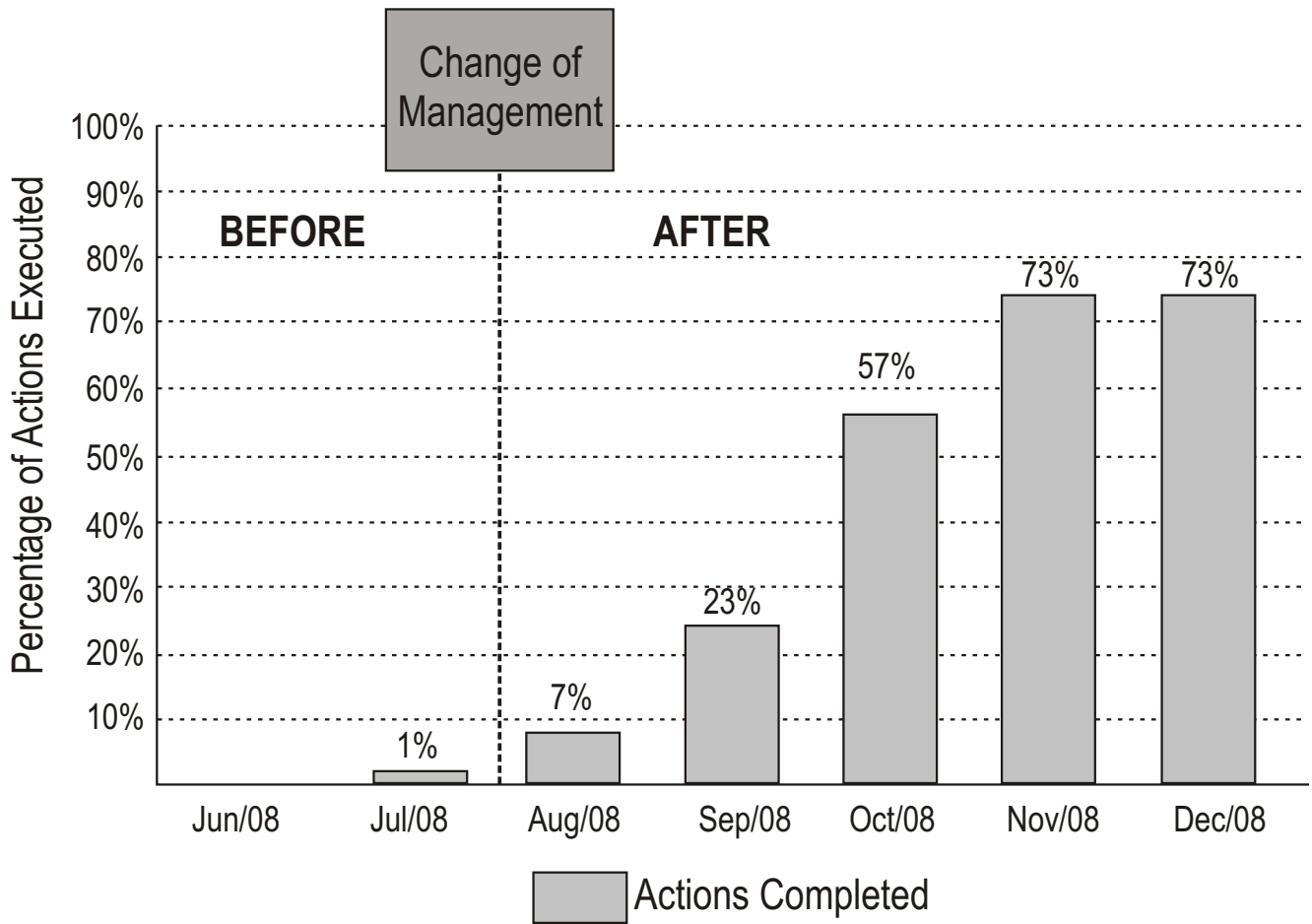
Figure 8.5: Effect of the change of leadership on the execution of actions (By courtesy of Suzano Papel e Celulose, São Paulo, Brazil).

Table 9.1: Activities evaluated for a Routine Management Diagnosis.

Activities Evaluated
1. Problem Identification
2. Analysis of a Problem's History
3. Problem Deployment
4. Identification of Responsibilities
5. Data Collection
6. Data Analysis
7. Assessment of the Occurrence's Site
8. Definition of Causes
9. Prioritizing of Causes
10. Action Proposals
11. Prioritizing of Actions
12. Preparation of an Action Plan
13. Training and Qualification
14. Actions' Execution
15. Presentation of Results
16. Evaluation of Results
17. Addressing Deviations
18. Standardizing of Improvement Actions
19. Assessment of the Improvement Cycle's Effectiveness
20. Standardizing
21. Training Planning
22. Audit Planning
23. Training in Standards
24. Compliance with Standards
25. Standards Auditing
26. Monitoring of Results
27. Evaluation of Results
28. Identification of Anomalies
29. Addressing Anomalies
30. Identification and Prioritizing of Chronic Problems
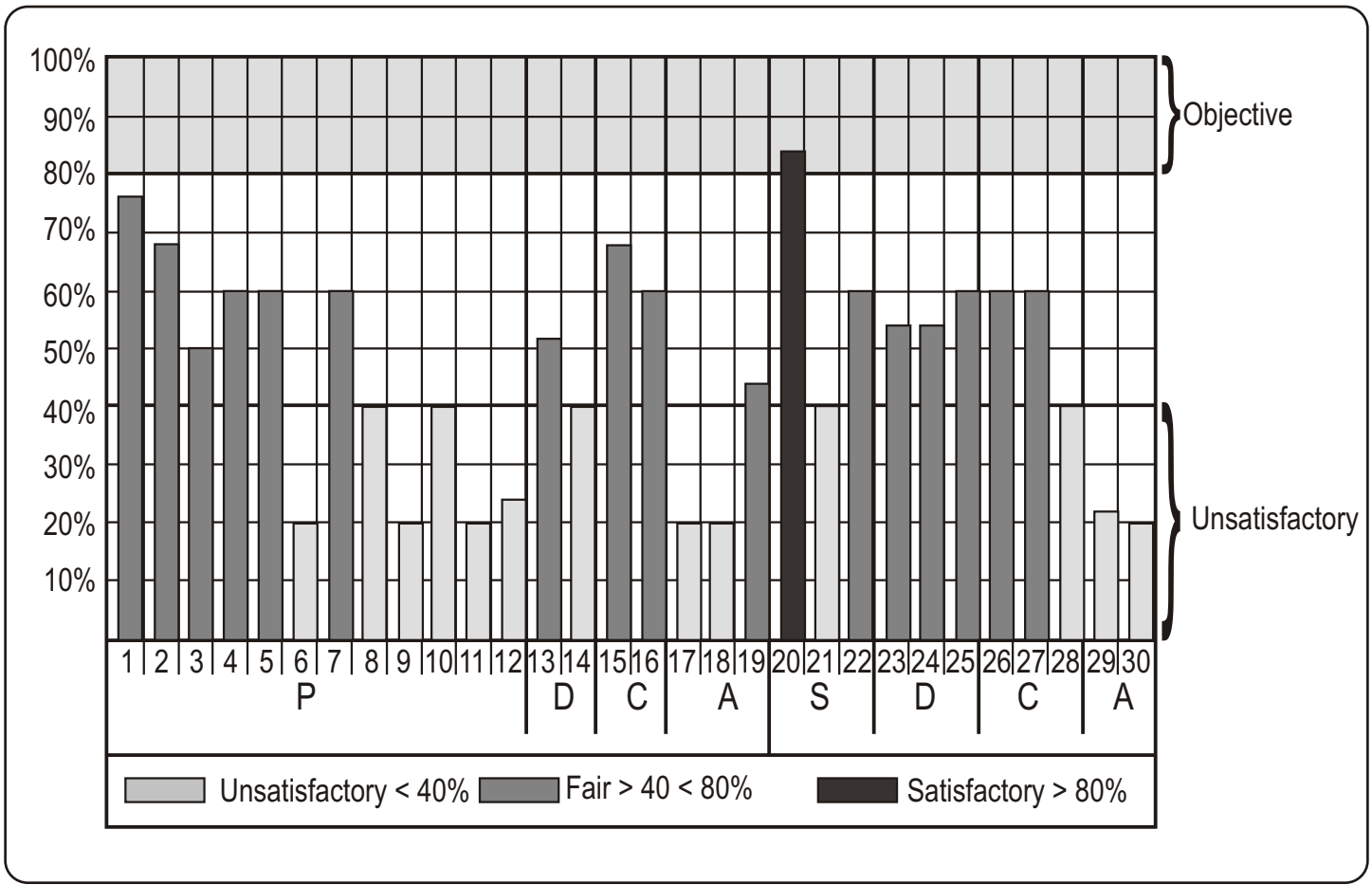
Figure 9.1: View of the results of a process Routine Management Diagnosis.

Level 1 Evaluation - System

Evaluated System	Performance	
Daily Work Routine Management	48%	

Level 2 Evaluation - Subsystem

Evaluated Subsystems	Performance	
Management for Improving (PDCA)	42%	
Management for Maintaining (SDCA)	51%	

Level 3 Evaluation - Processes

Evaluated Processes		Performance	
PDCA	Plan	40%	
	Do	45%	
	Check	62%	
	Action	24%	
SDCA	Standard	73%	
	Do	56%	
	Check	54%	
	Action	25%	
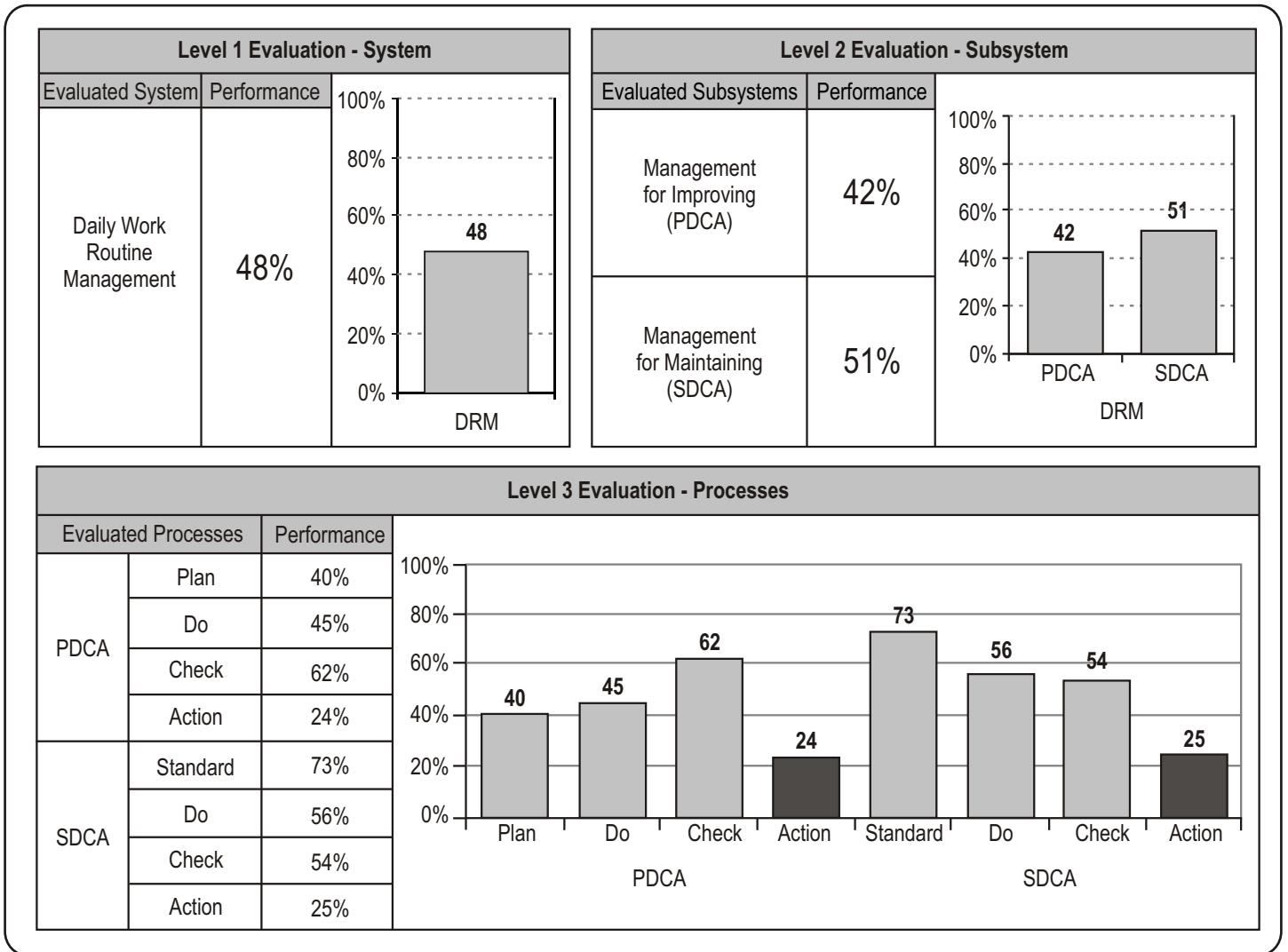
Figure 9.2: Summary of Routine Management Evaluations (DRM = Diagnosis of Routine Management).

70%

100% - ⭐

Investment on Routine
Management

IDEAL

⟹

80%

Investment on
Policy Management,
Functional
Management,
Technical
Knowledge,
and PDCA
(Green and Black
Belts)

**Level of
Achievement
of sector goals**

Investment on Routine
Management and basic
notions on Problem Solving

Check local
leadership conditions

⟰

0

0 ⟶ 100%

**Overall Result of the Routine
Management Diagnostic**
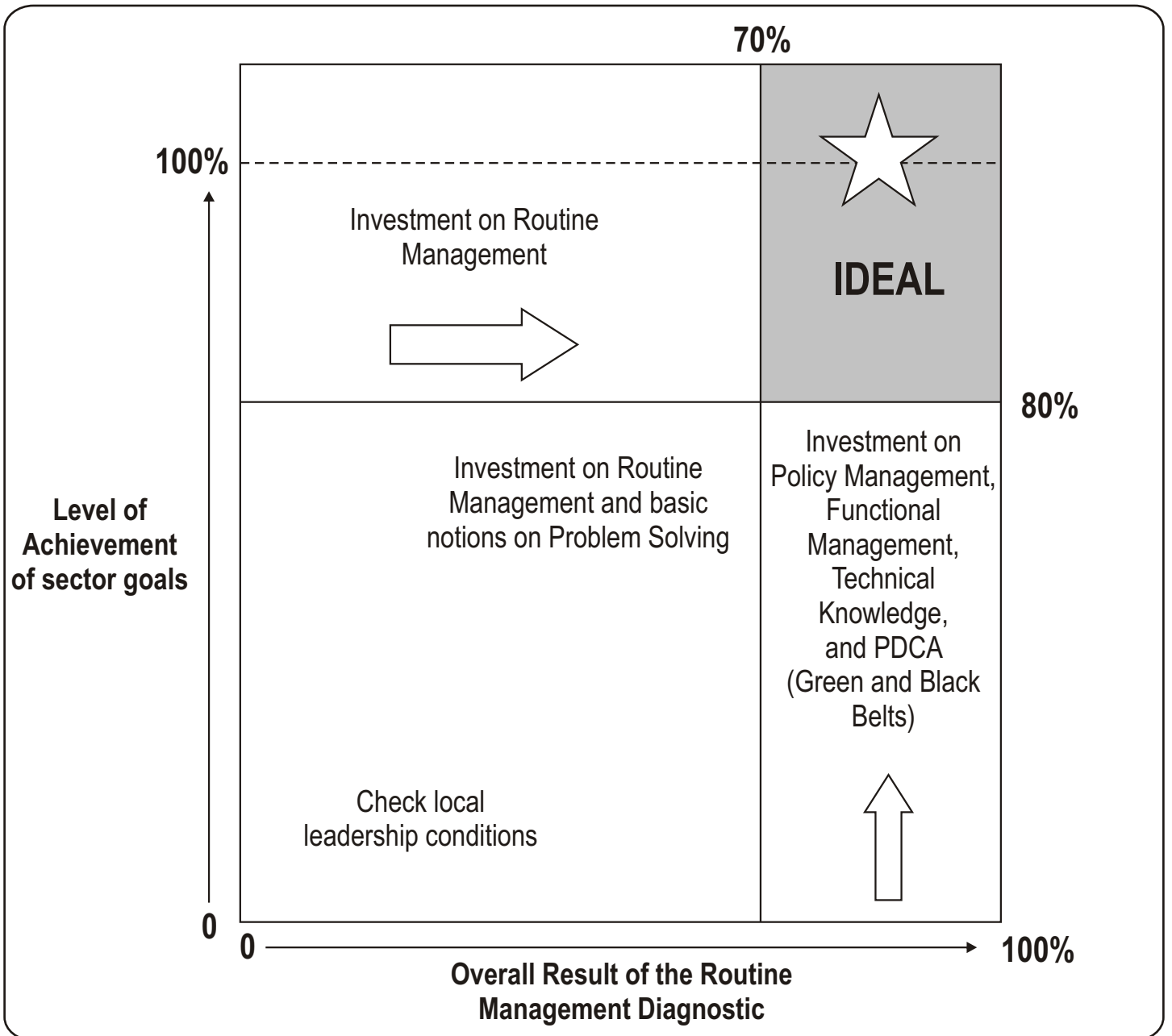
Figure 9.3: Model of a final evaluation of an organizational sector's managerial development.
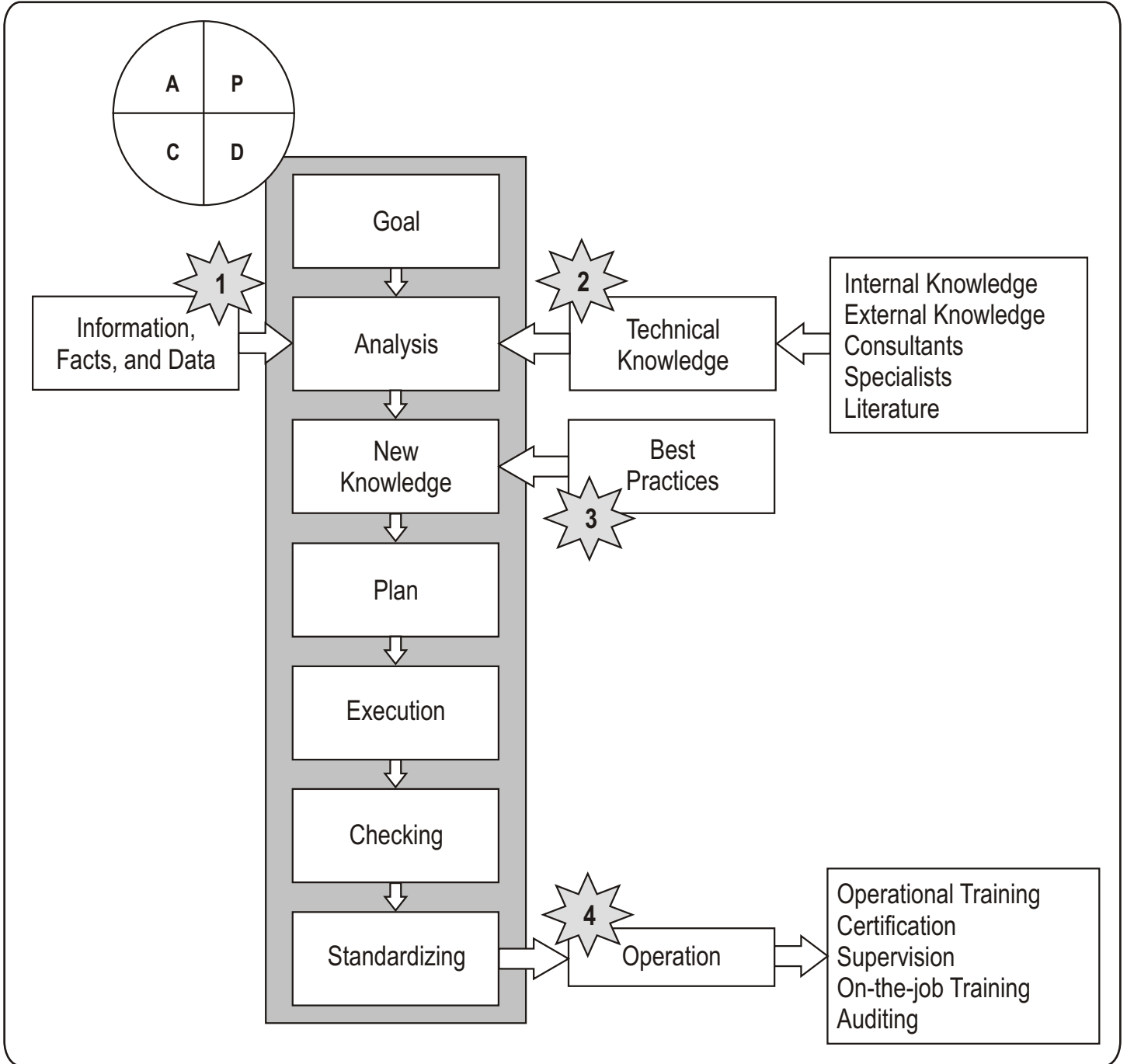
Figure 10.1: Model of acquisition, development, and consolidation
of knowledge in an organization through the method.
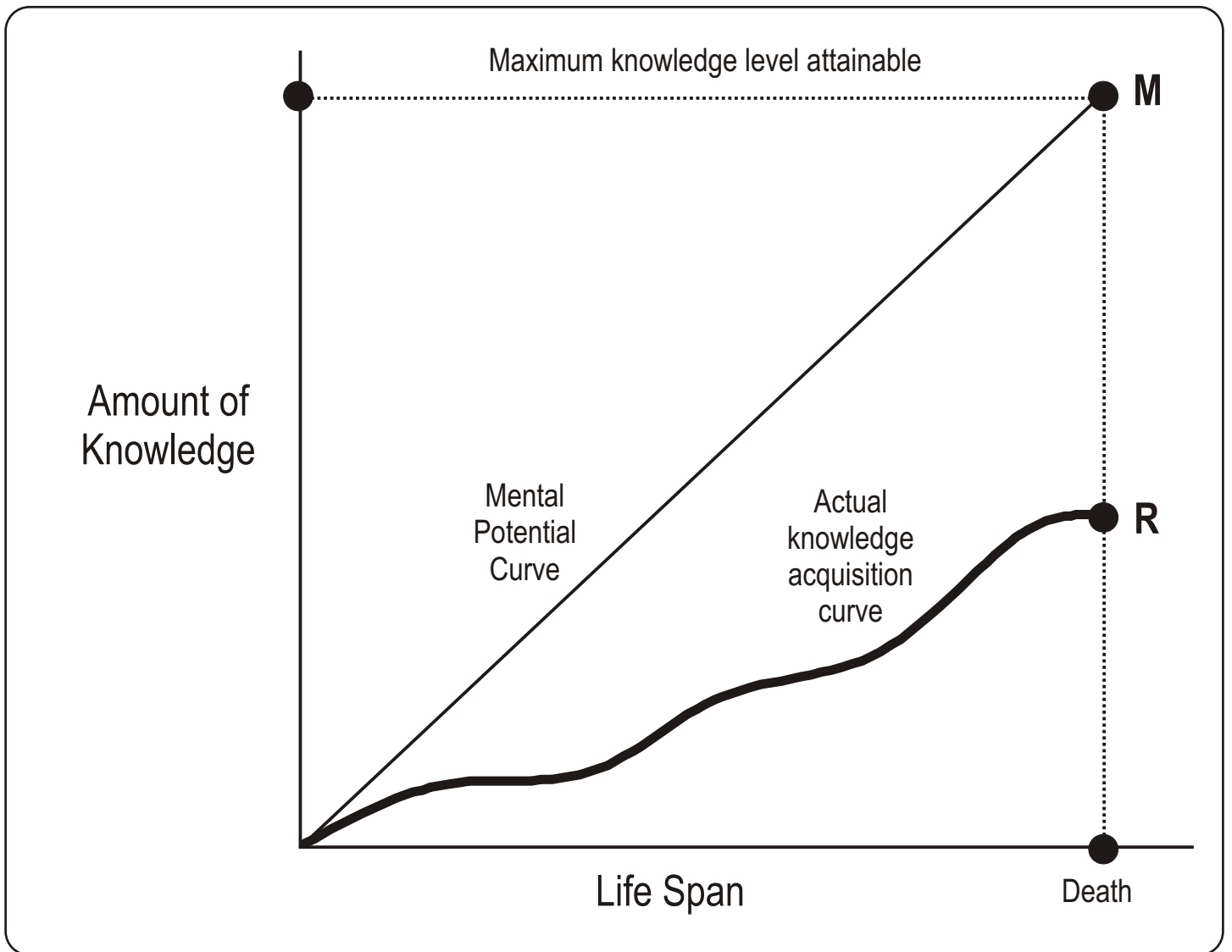
Figure 10.2: Model of Maslow's[4] Mental Potential concept.
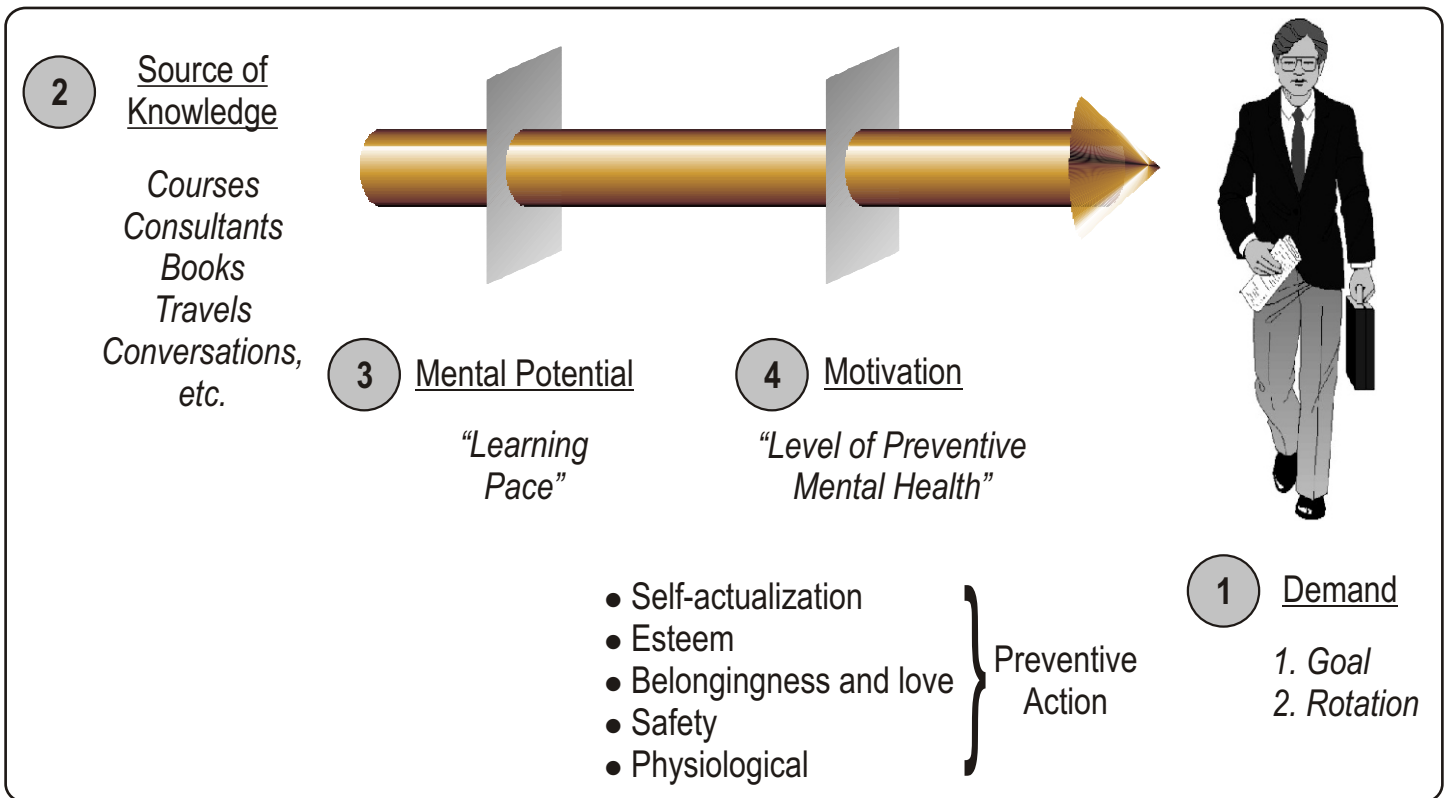
Figure 10.3: Model of the Learning Process in an organization.
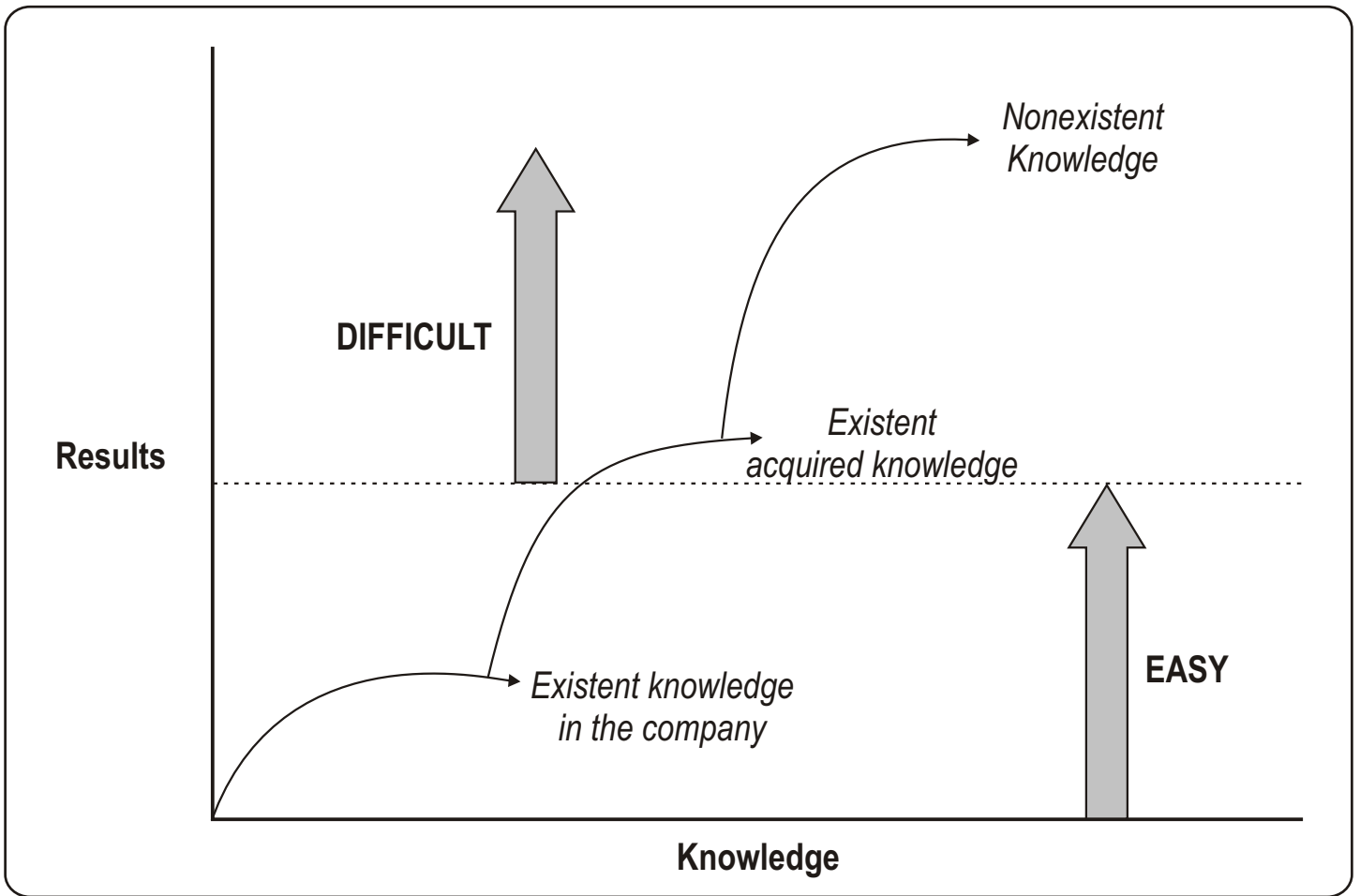
Figure 10.4: Model of the stages of incorporation of knowledge in a company.
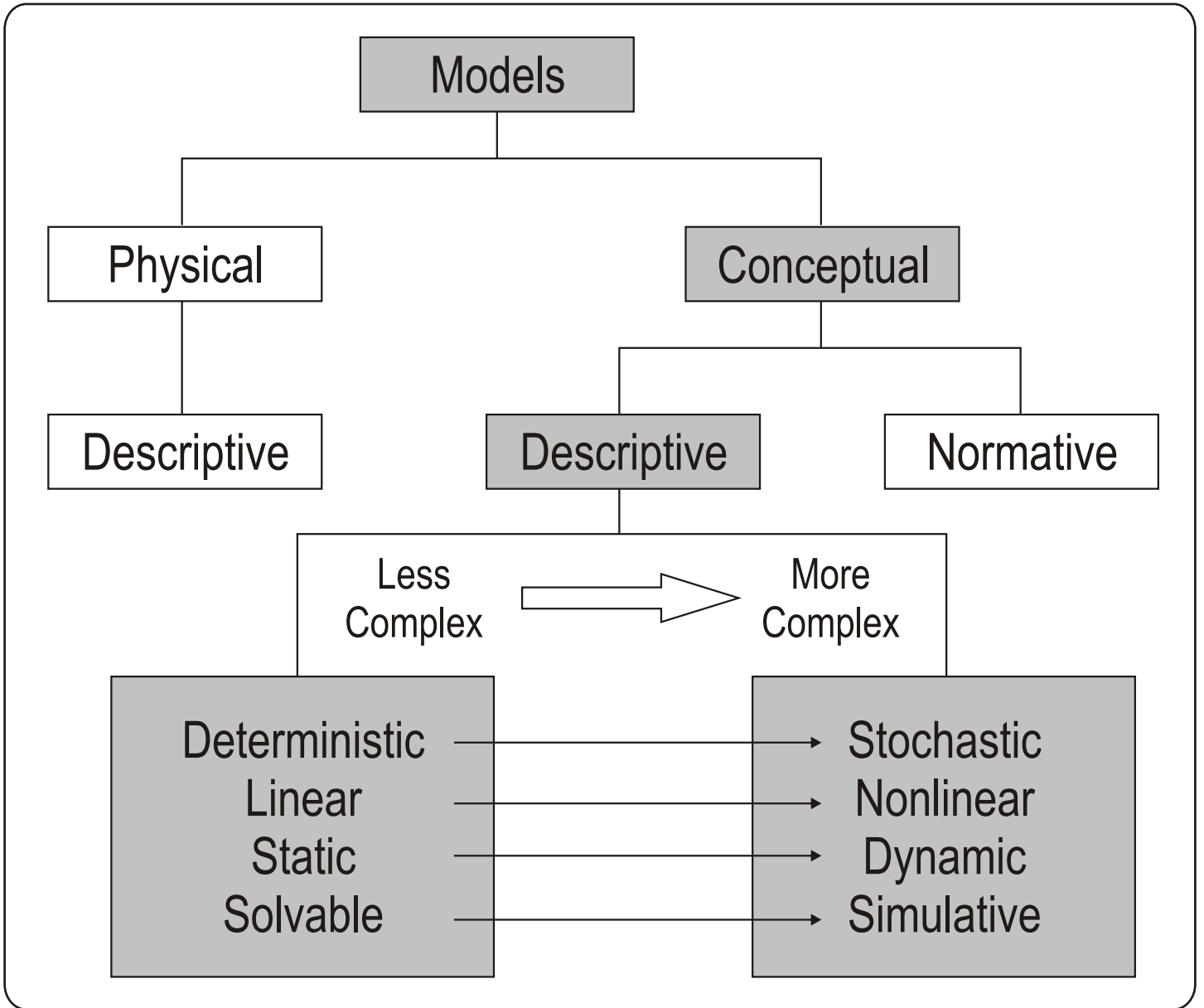
Figure A.1: Models hierarchy according to Clark[2] (on gray background: models of greater interest for analysis).
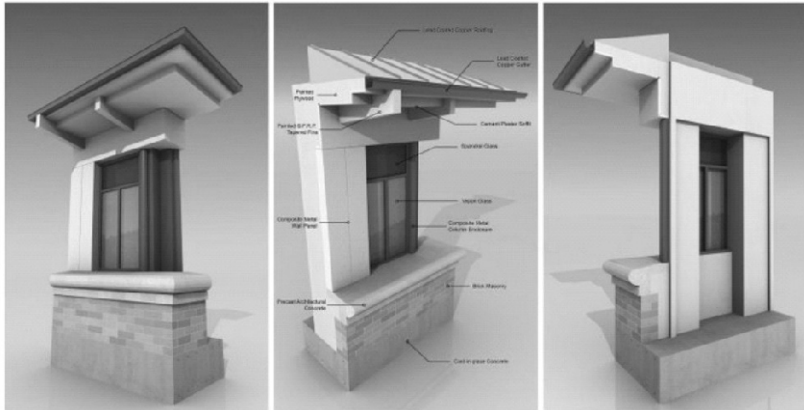
Home Model

Earth Globe Model

Plane Model

Figure A.2: Examples of Physical Models.

CHART

	Entities and Entity Owners									
	Manoel	Carmo	Bretas	Adoniran	Bretas	Adoniran	Fraga	Freitas	Laerte	Laerte
Packages	Head-quarters	Plants	Commercial	Logistics	Regional Board	Resale	Northern Associates	Argentina Venezuela	Southern Associates	Others Inactive
Personnel Package										
Salaries Commissions/Prizes Indemnization/Advance Notice Direct Charges/Provisions Allowances Board of Directors Transportation Worker's Meal Program Others										
Third Parties Package										
Outsourcing Security Etc.										

MATRIX

TREE DIAGRAM

RELATIONSHIP DIAGRAM

Figure A.3: Examples of Conceptual Models.
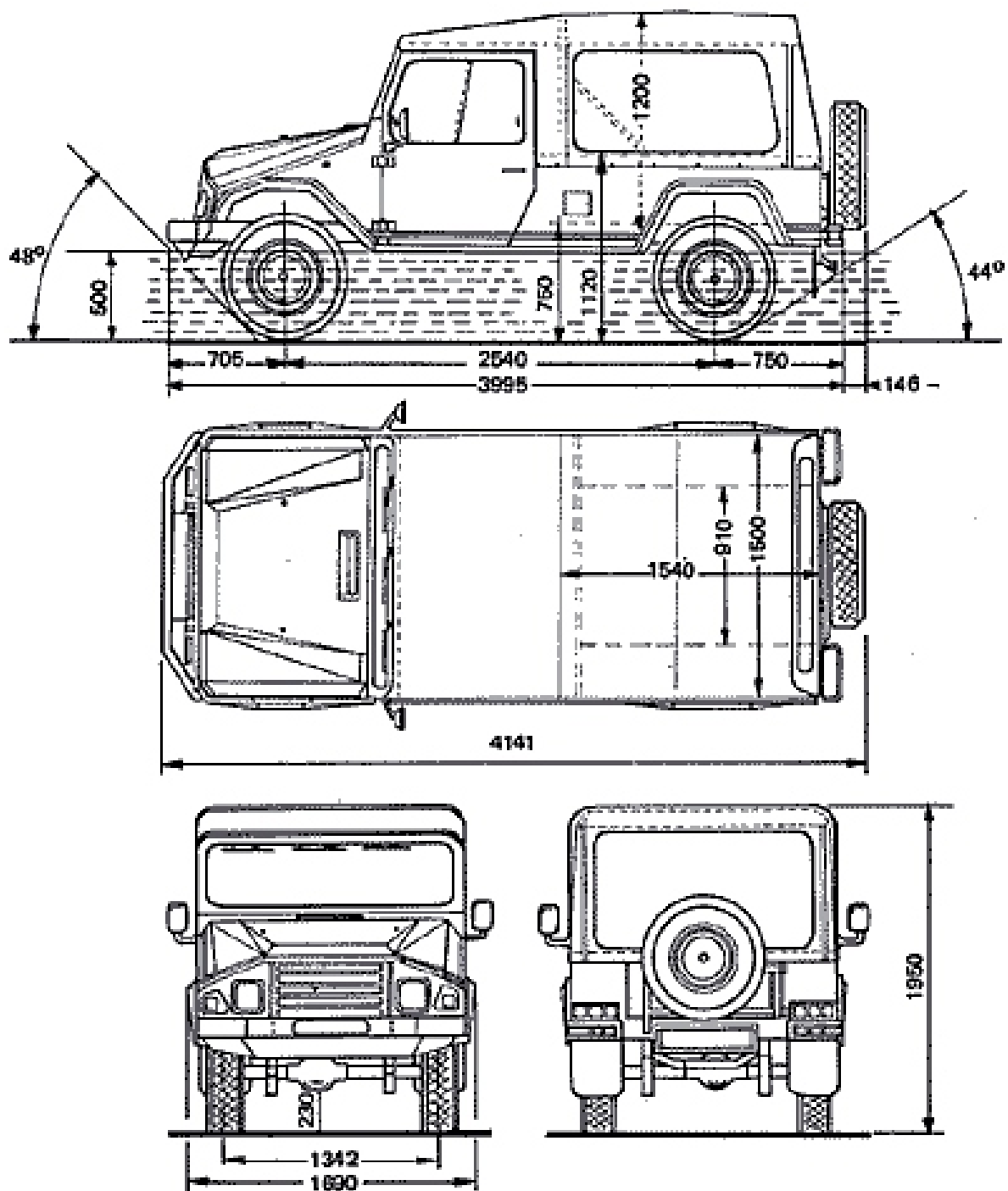
Figure A.4: Example of a Deterministic Descriptive Conceptual Model.
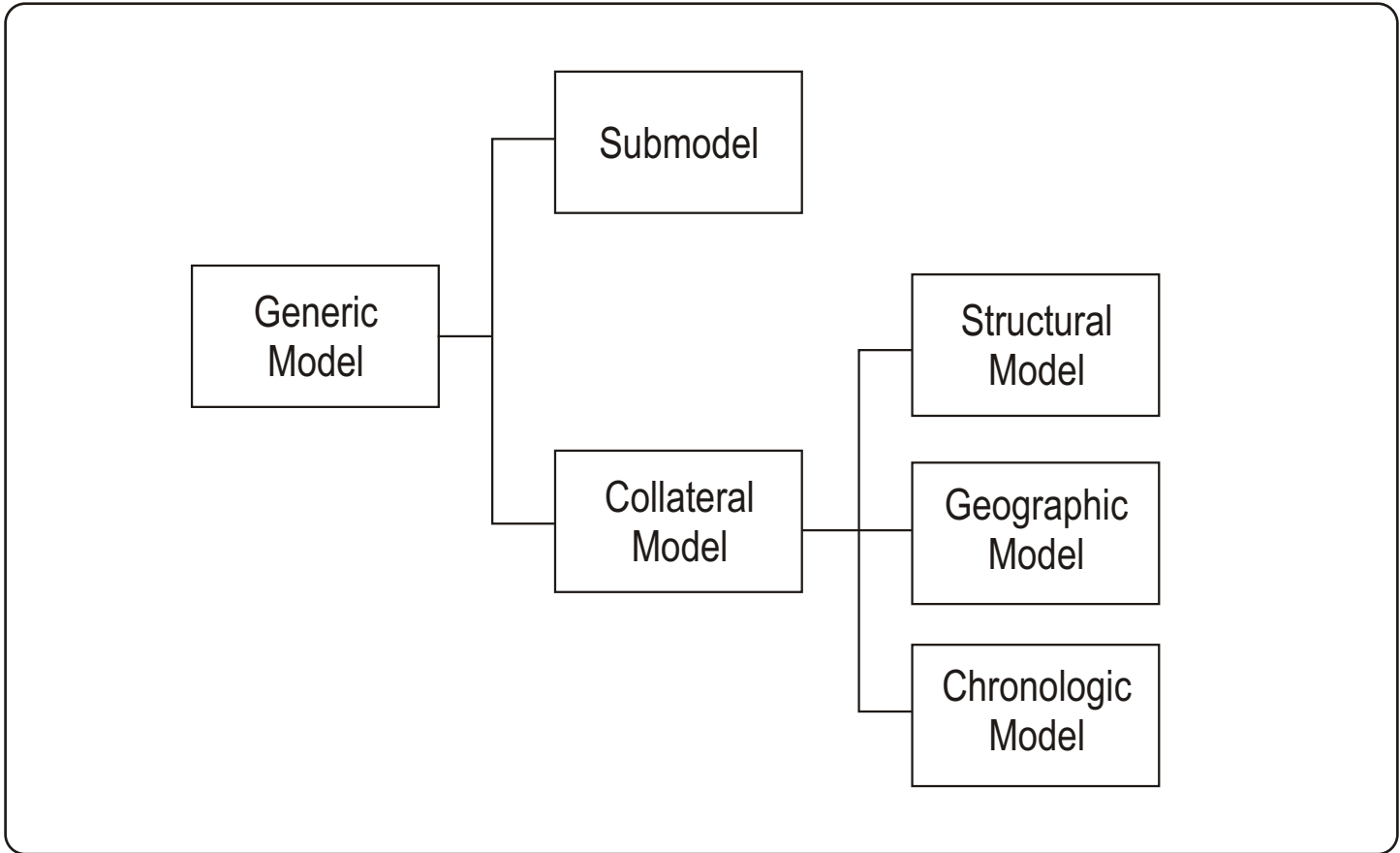
Figure A.5: Schematic opening of a model.
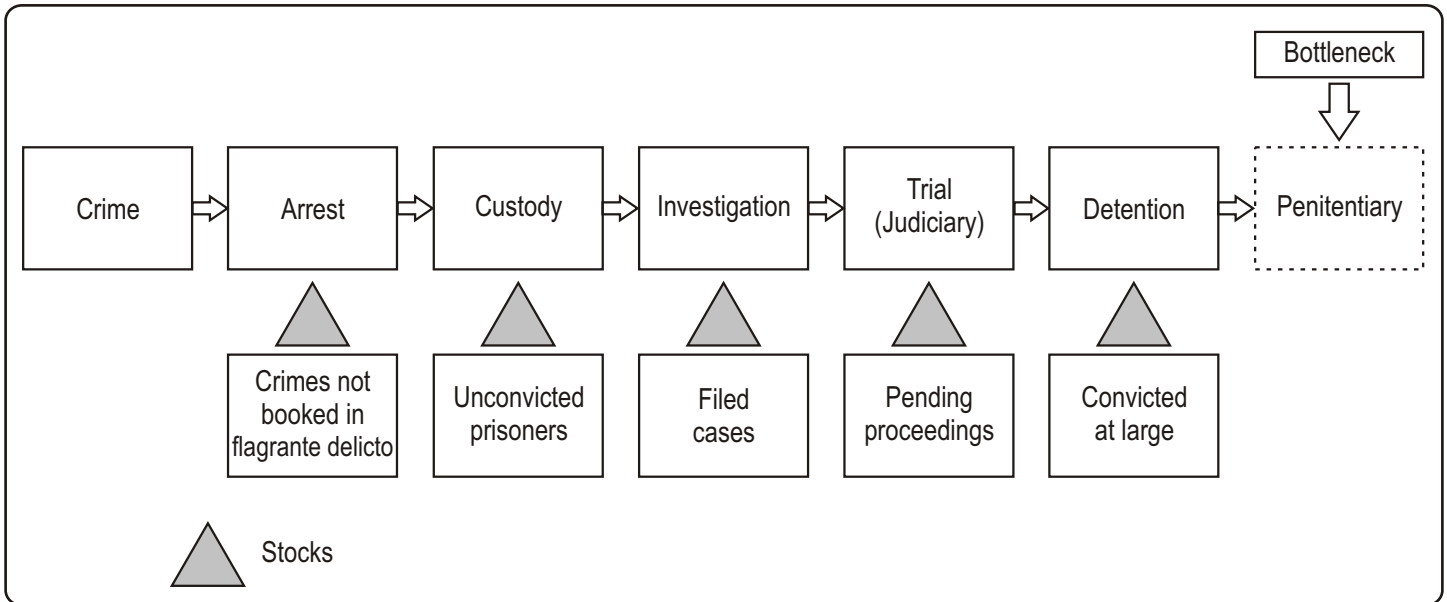
Figure A.6: Model of the Crime Repression System of a State (Generic Model).
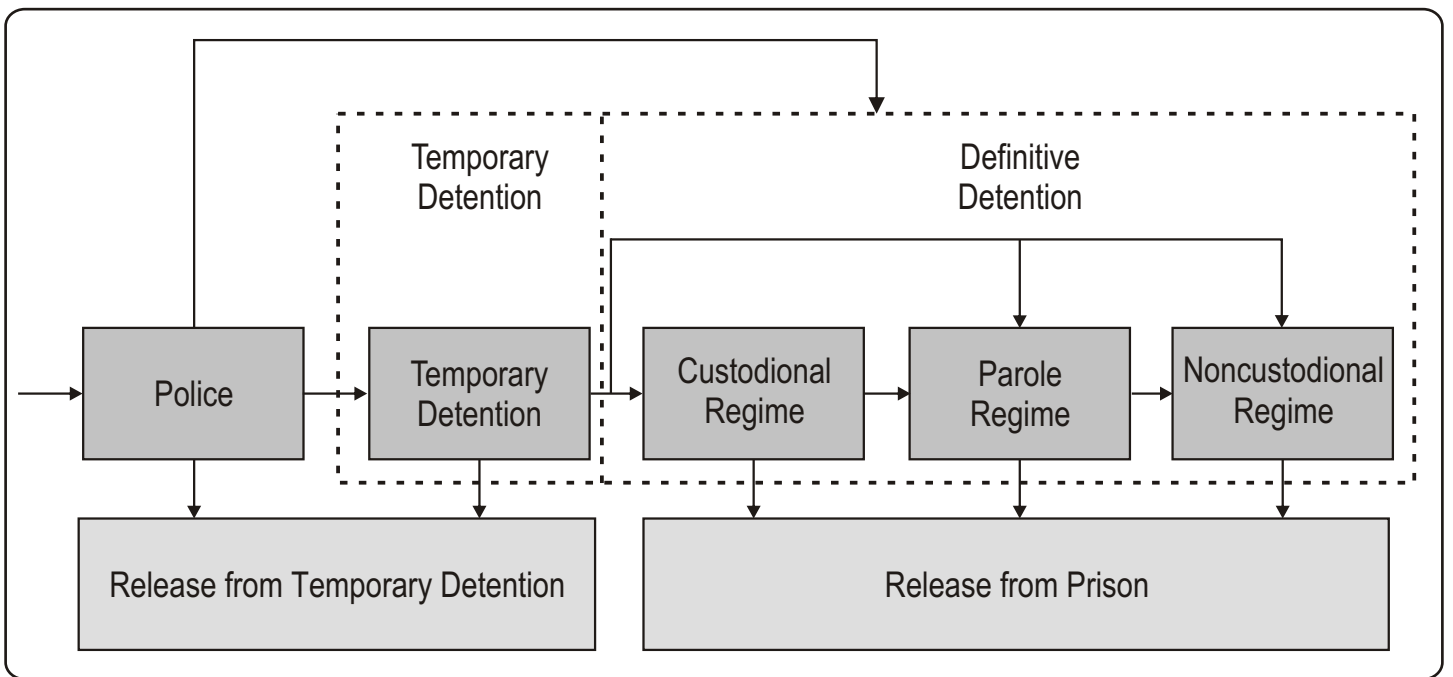
Figure A.7: Submodel of the crime repression system, showing the penitentiary system in greater detail.
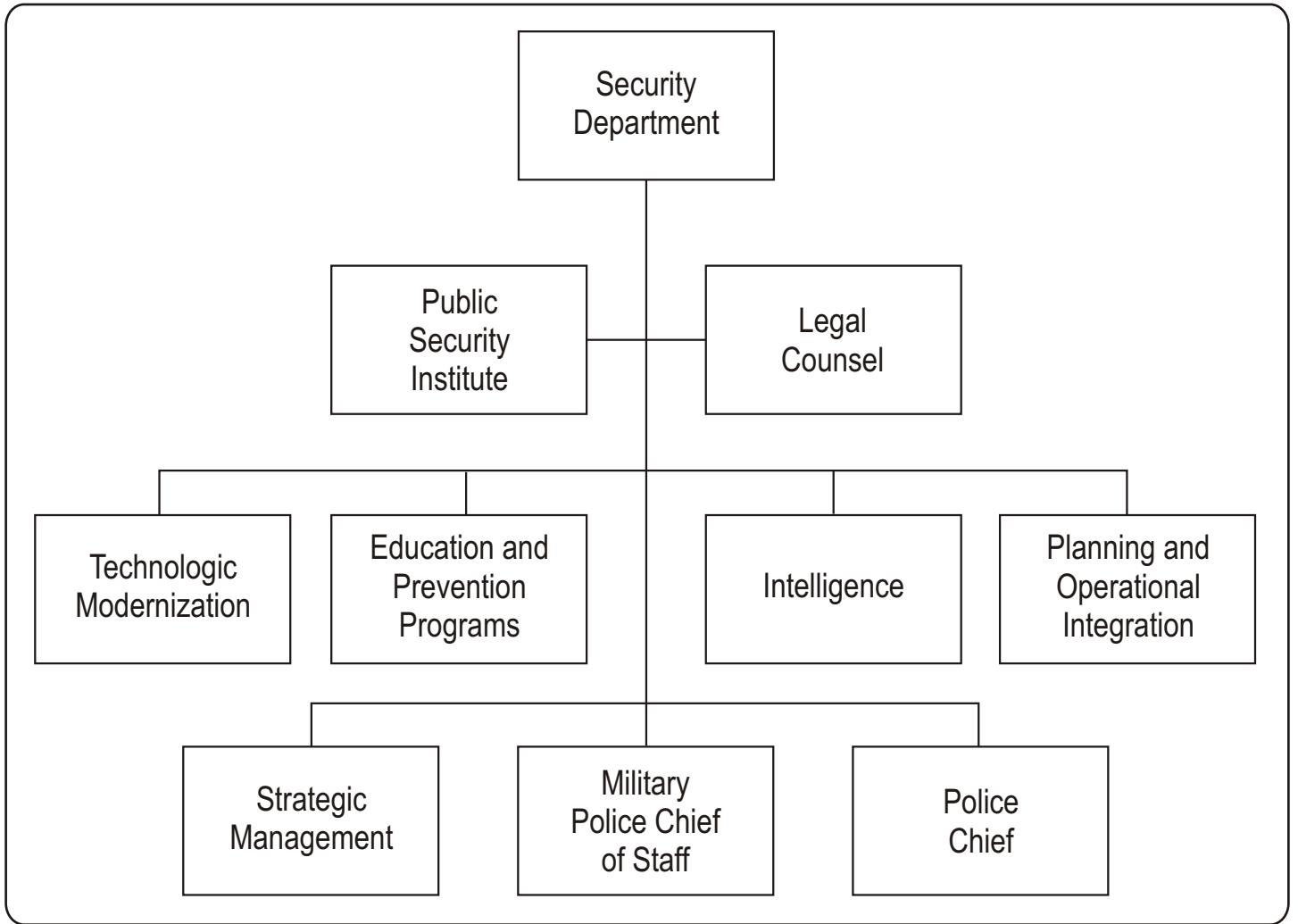
Figure A.8: Structural Collateral Model of a crime repression system of a State.
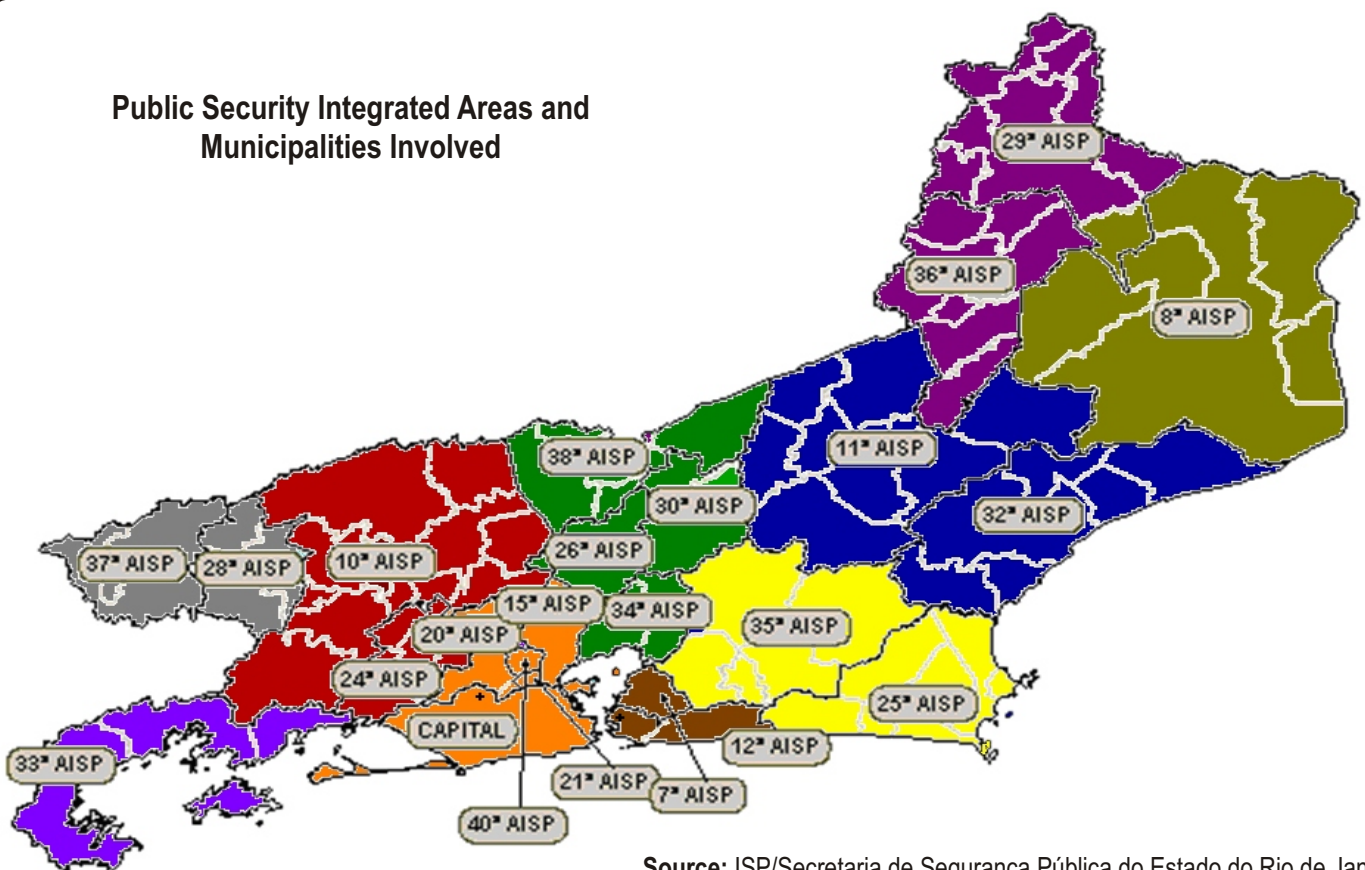
Figure A.9: Geographic Collateral Model of a crime repression system.

Crime Repression Process	Average Period of Time (qualitative / figurative)
① Crime	◇
② Arrest	◇
③ Custody	▭
④ Investigation	▭
⑤ Trial	▭
⑥ Imprisonment	▭

Figure A.10: Chronologic Collateral Model of a crime repression system.
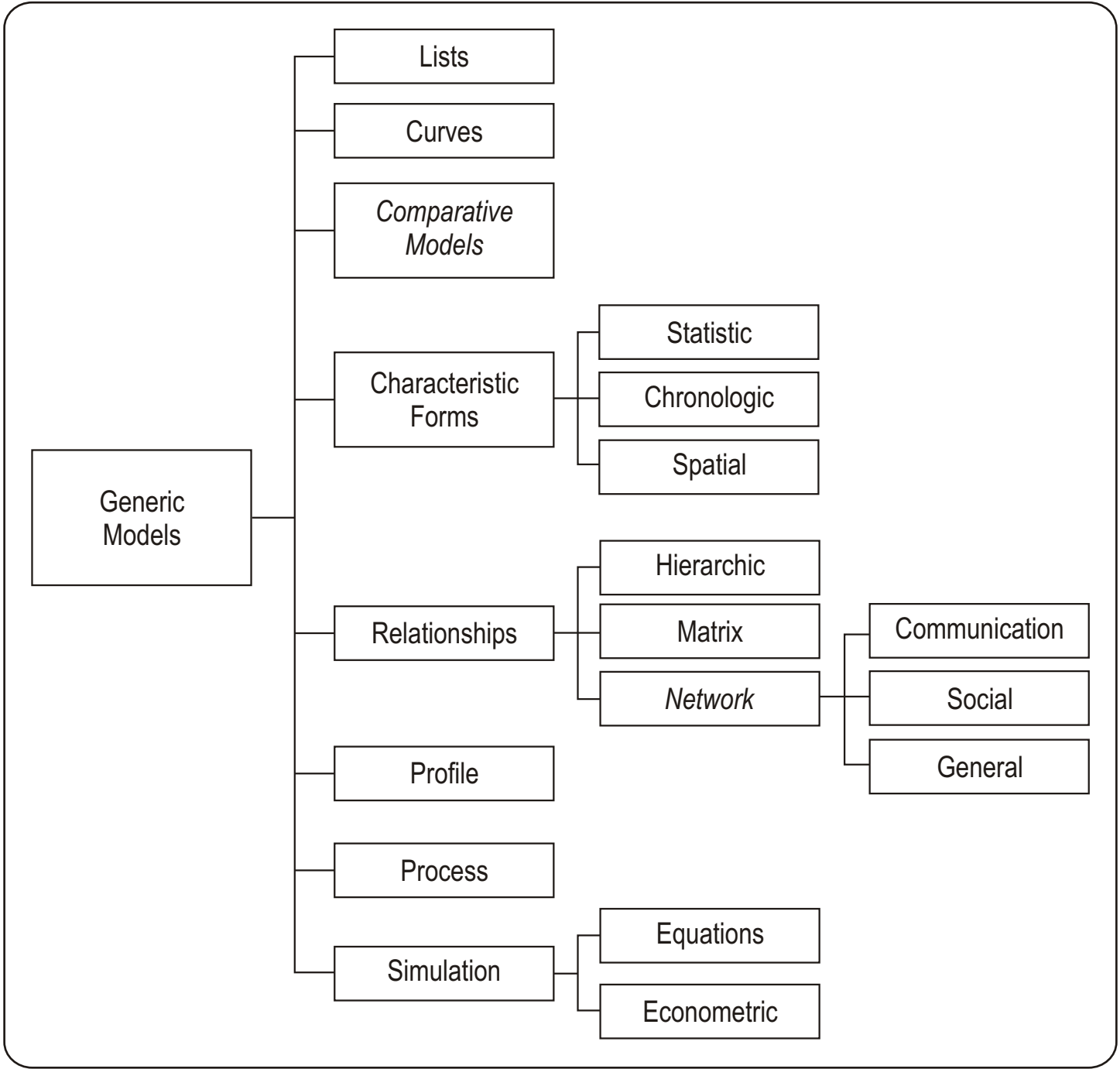
Figure A.11: Families Relationship Model.
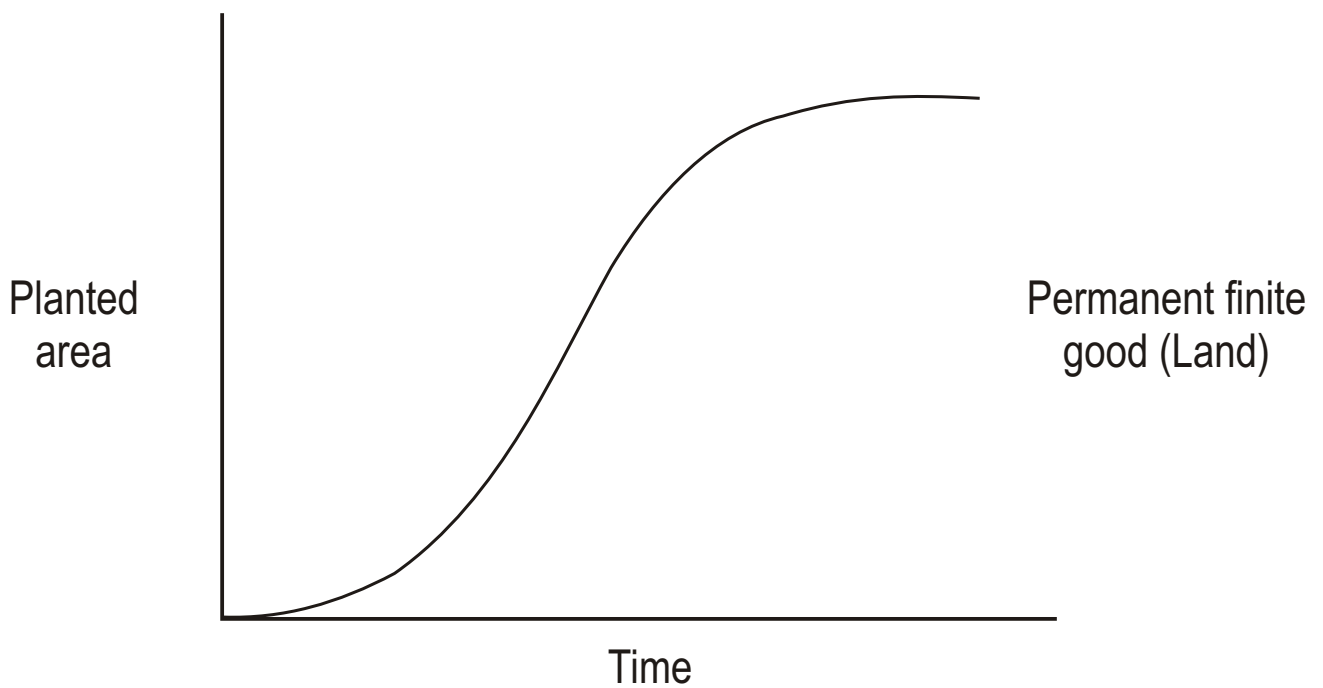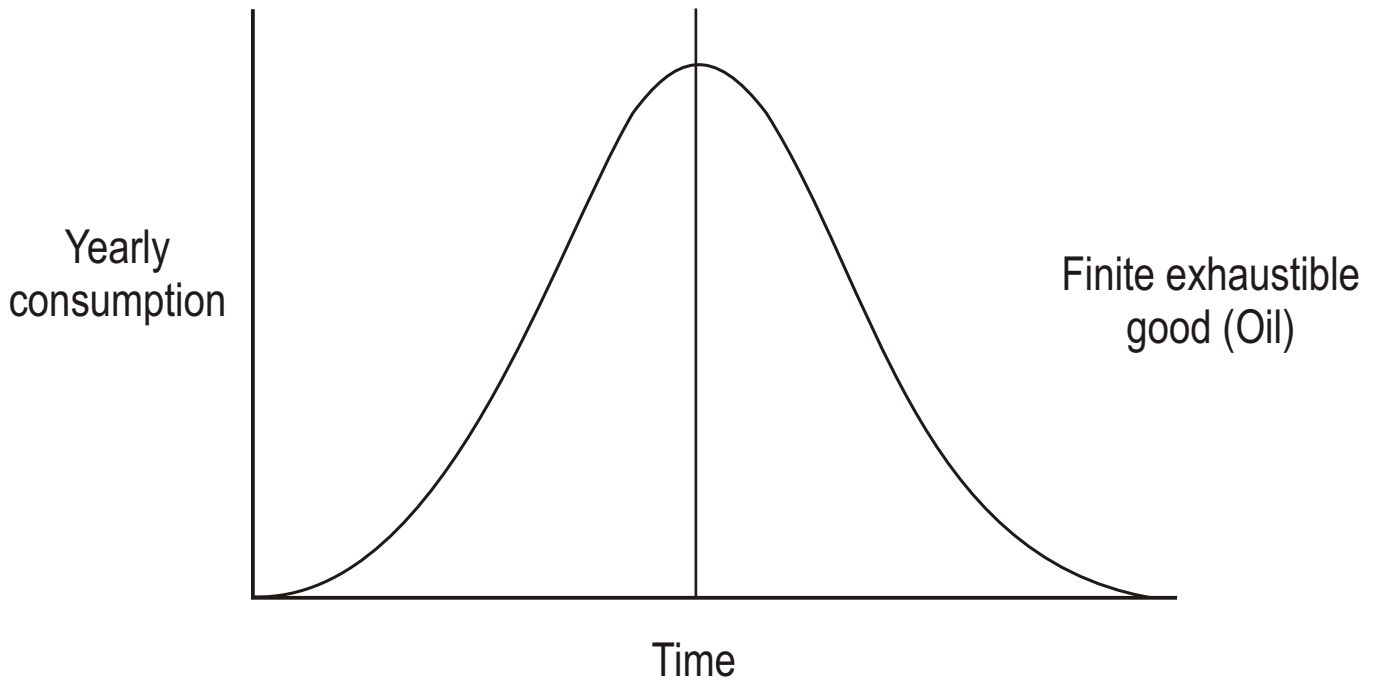
Figure A.12: Curves as conceptual models of goods' utilization.
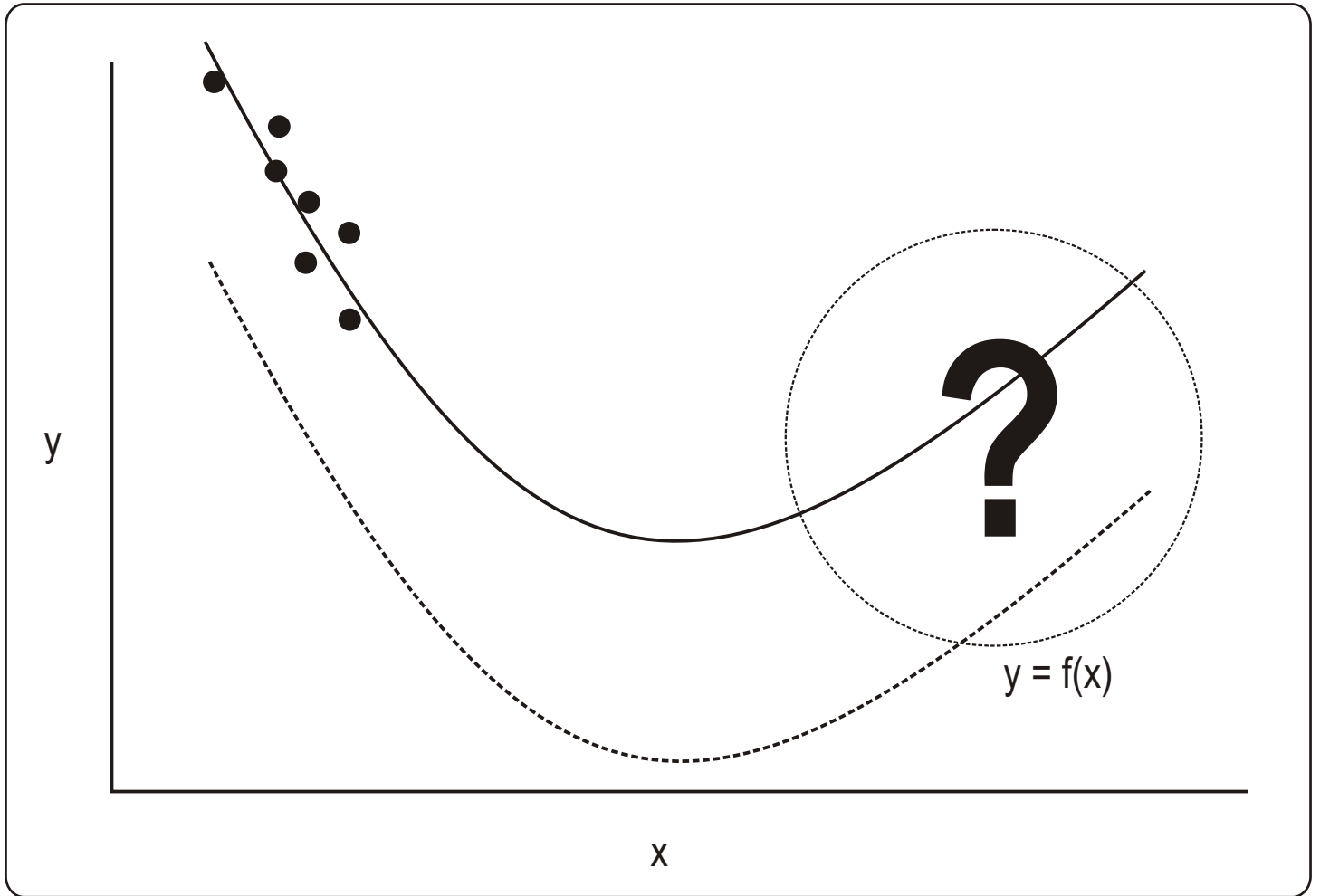
Figure A.13: Curves showing the theoretical model (dashed line) and the adjusted model (solid line).
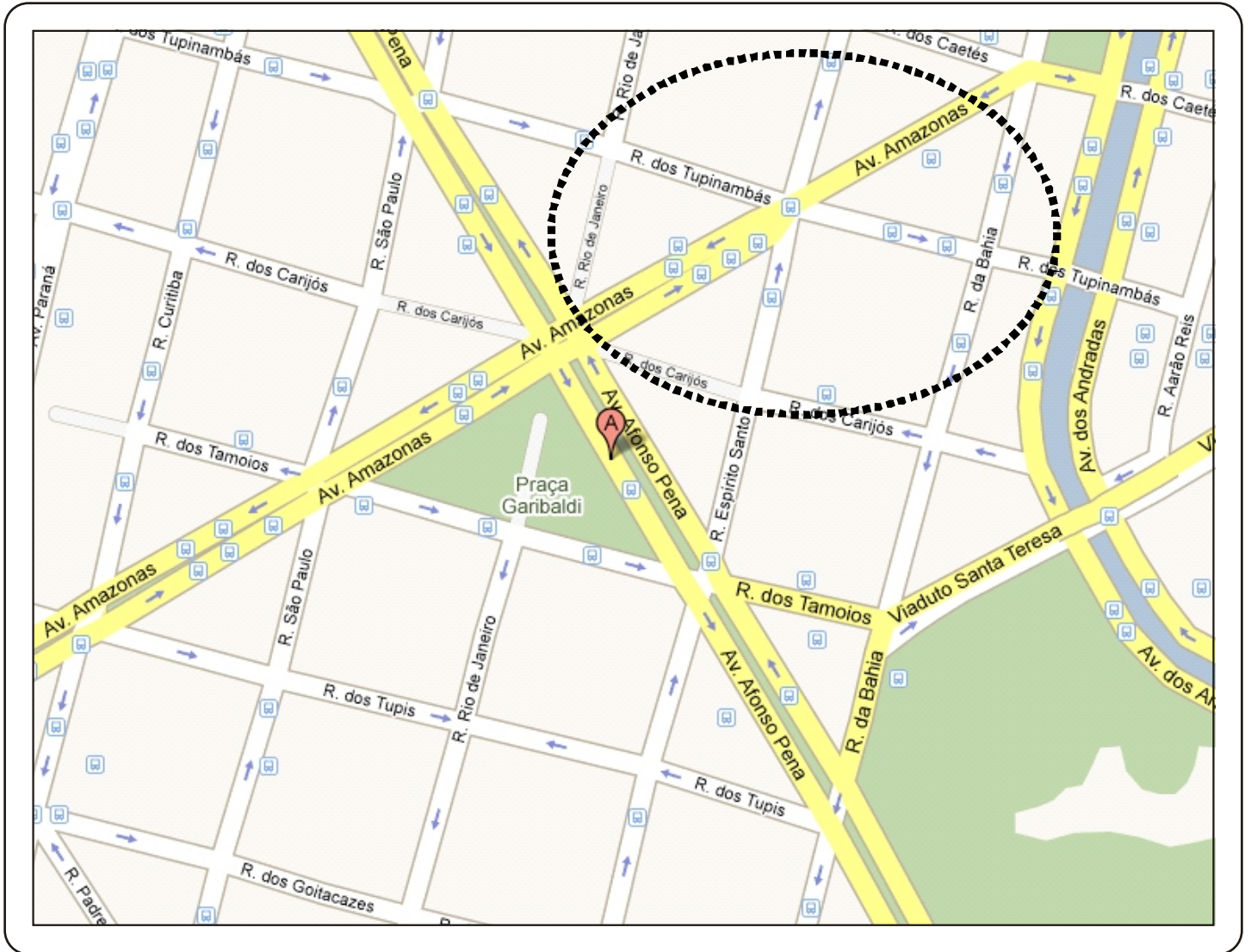
Figure A.14: A Spatial Characteristic Form Model.

Tree Diagram
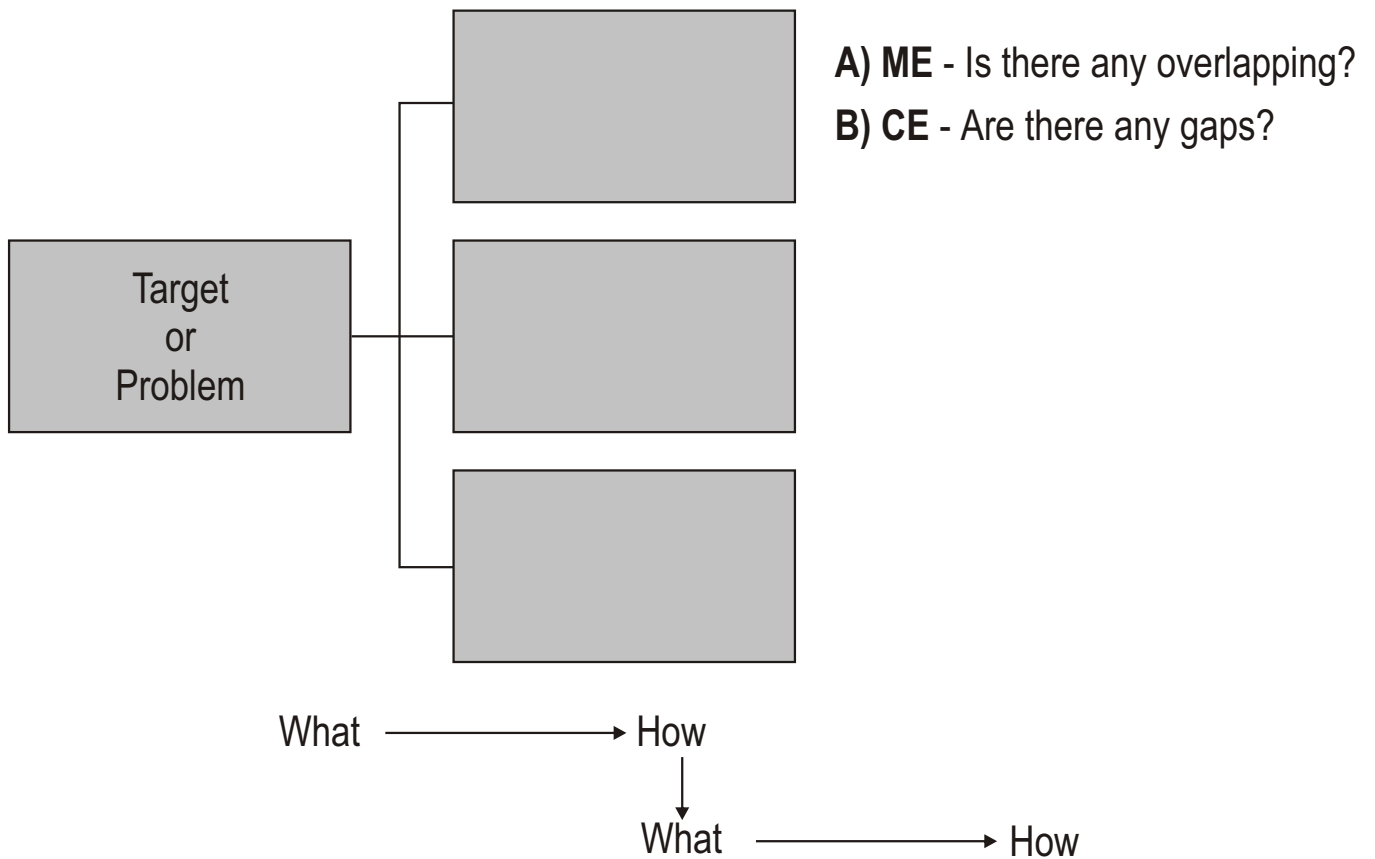
MECE - Mutually Exclusive and Collectively Exhaustive

A) ME - Is there any overlapping?

B) CE - Are there any gaps?

Target or Problem

What ⟶ How

What ⟶ How

Figure A.15: Conditions for constructing a Tree Diagram.

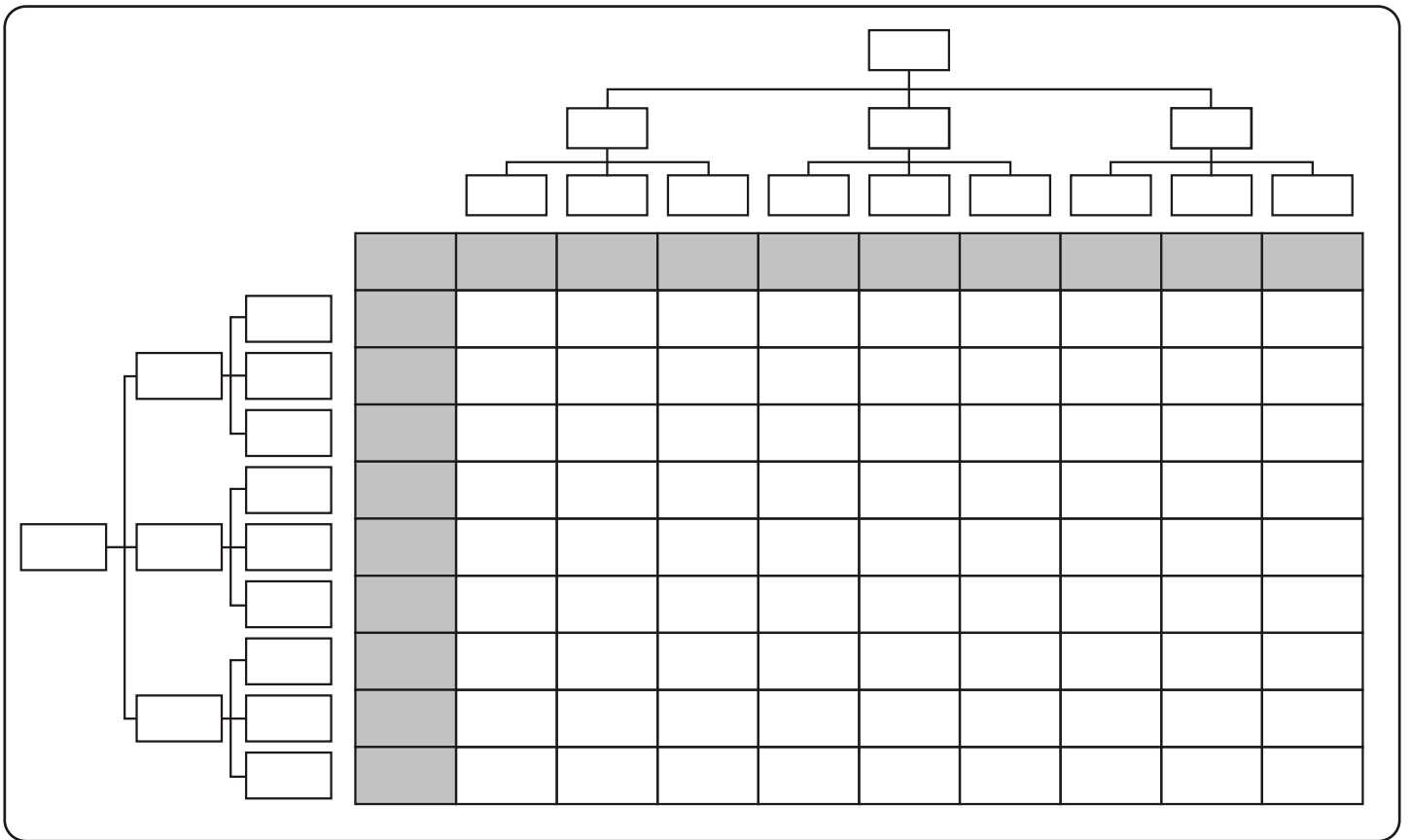Figure A.16: Matrix Relationship Model (Matrix Diagram).
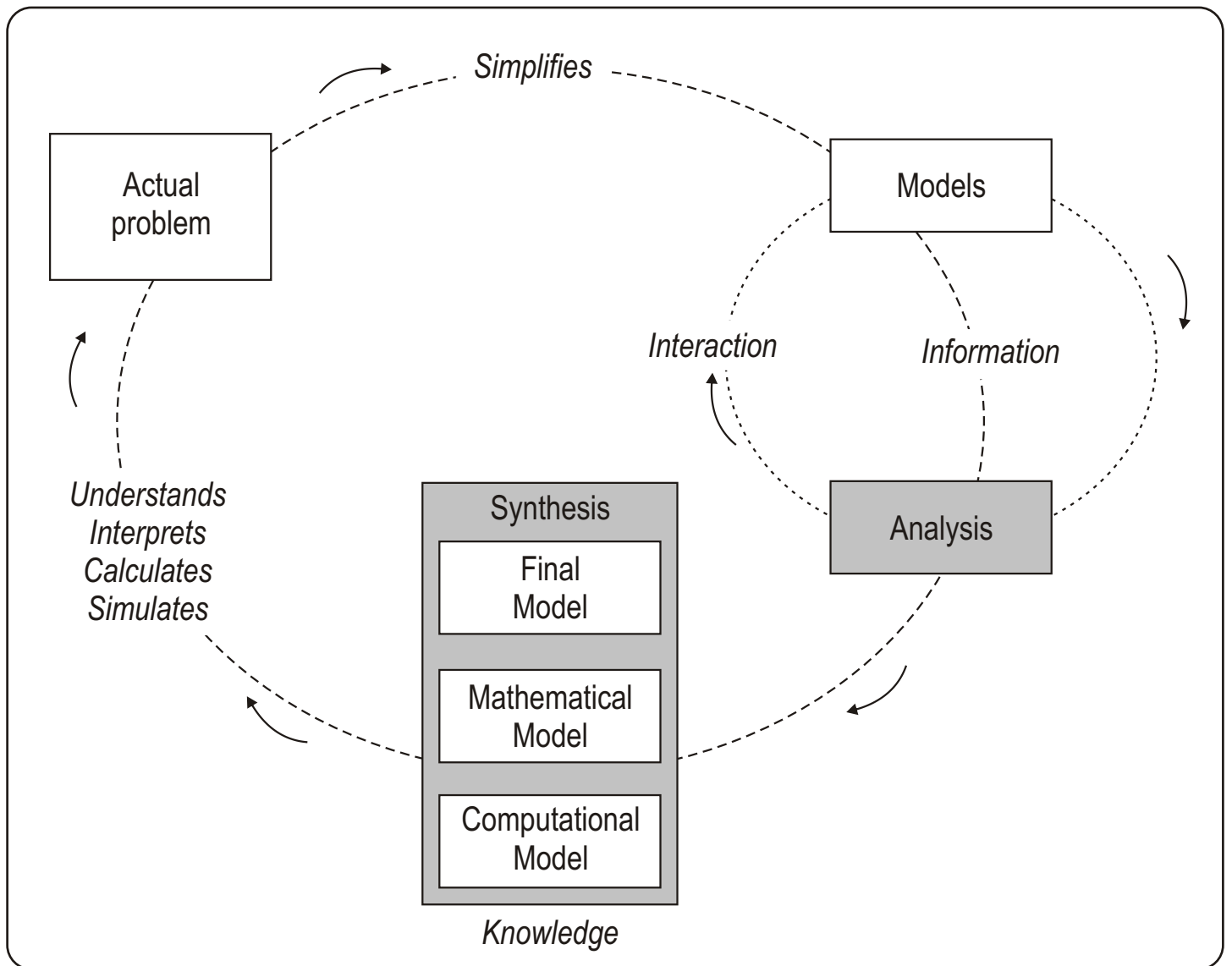
Figure A.17: Network Relationship Model.

Figure A.18: Model of the analysis and synthesis process based on the use of models.