Marketing Information Systems: part 1

Course code: PV250

Dalia Kriksciuniene, PhD

Faculty of Informatics, Lasaris lab., ERCIM research program

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Timetable

Part 1: Oct.22 Mon 14:00–17:50 C525

Part 2: Oct.23 Tue 8:00–11:50 G101

Part 3: Nov. 05 Mon 14:00–17:50 C525

Part 4: Nov. 05 Tue 8:00–11:50 G101

Part 5: Dec.10 Mon 14:00–17:50 C525

Part 6: Dec.11 Tue 8:00–11:50 G101

Assessment session: 1-2nd week of January

Syllabus 1

∞ Marketing domain area

∞ The user' requirements for the information content, inputs, retrieval and presentation

∞ Definitions, functions, requirements for the marketing information systems (MKIS).

∞ MkIS structure and concepts

∞ Investigation of the theoretical and experimental research in MkIS area in the scientific literature.

Marketing as a domain area

Many definitions of marketing- different accents (AMA-American marketing association definitions, ammended)

Marketing is a social process by which individuals an groups obtain what they need and want through creating and exchanging products and value with others (Kotler, Turner, 1985)

Keywords:

Needs, wants, demands

Products

Values and satisfaction

Exchange and transactions

Markets

Needs, wants, demands

Need is a state of felt deprivation of some basic satisfaction

- E.g. food, clothing –things of survival. These needs are not created by society or marketers, they exist in human biology

Wants are desires for specific satisfiers of deeper needs.

- They are different is various societies: a person needs food and wants oyster, needs clothing and wants a Chanel outfit, needs esteem and wants fancy necklace. Wants are continuously reshaped by social forces and communities (families, schools, church, etc.)

Needs, wants, demands

Demands are wants for specific products that are backed up by an ability and willingness to obtain them by exchange.

Wants become demands when backed up by purchasing power.

Companies have to measure not only how many people want their product but how many would actually be willing and able to buy it.

6

Needs, wants, demands

These distinctions answer frequent critics for marketing "marketers create needs" or "marketers get people to buy things they don't want".

Marketers do not create needs- they preexist marketers. E.g. marketers do not create need for social status.

Along with other influential forces marketers influence wants. They suggest to consumers or try to point out how particular product would satisfy need (e.g. BMW car or Parker pen for satisfying need for social status)

Marketers try to influence demand by making product attractive, affordable, available

Products

Broad understanding of product: anything that can be offered to someone to satisfy a need or want.

Product as a physical object serves as a vehicle for getting service (e.g. car for riding it).

Services are carried by other vehicles such as persons, places, activities, organizations, ideas. Product covers all vehicles that are capable of delivering satisfaction of a want or need

Tangible and intangible products. Other terms for product: offer, satisfier, resource.

Values and satisfaction

How do consumers choose among the products that might satisfy a given need ?

E.g. how can we travel ? By foot, roller skates, bicycle, car, plane or cruise ship.

The list makes a choice set.

According to it we can make a product set

The goal set which we want to satisfy in need for traveling, e.g. speed, cost, ease. Each product has difference capacity to satisfy goals.

What is the ideal product ?

Product space is the rating of products by customer perception how far is is from ideal. Value (or utility) is greater if product is nearer to ideal

Exchange and transactions

Marketing exists when people decide to satisfy needs and wants in way we call exchange.

Four ways of exchange:

- Self production (e.g. relieve hunger by fishing) - no marketing, as there is no interaction

- Coercion (e.g. wrest food from other) – no benefit is offered to other party

- Begging (e.g. approach other)- no tangible to offer, except gratitude

- Exchange (offer resource in exchange for good: money, another good, service)- marketing arises from this approach

Exchange and transactions

Exchange is the defining concept underlying marketing- the act of obtaining desired product from someone offering something in return

Terms for exchange: leave them both better or not worse, that's why exchange is a value creating process

Exchange has to be seen as a process not event (two partied finding each other, negotiating, moving towards agreement)

If the agreement is reached, transaction occurs.

Markets

Economist view: market is the place where buyers and sellers gather

Marketers view: market consists of all potential customers sharing a particular need or want, able for exchange to satisfy it.
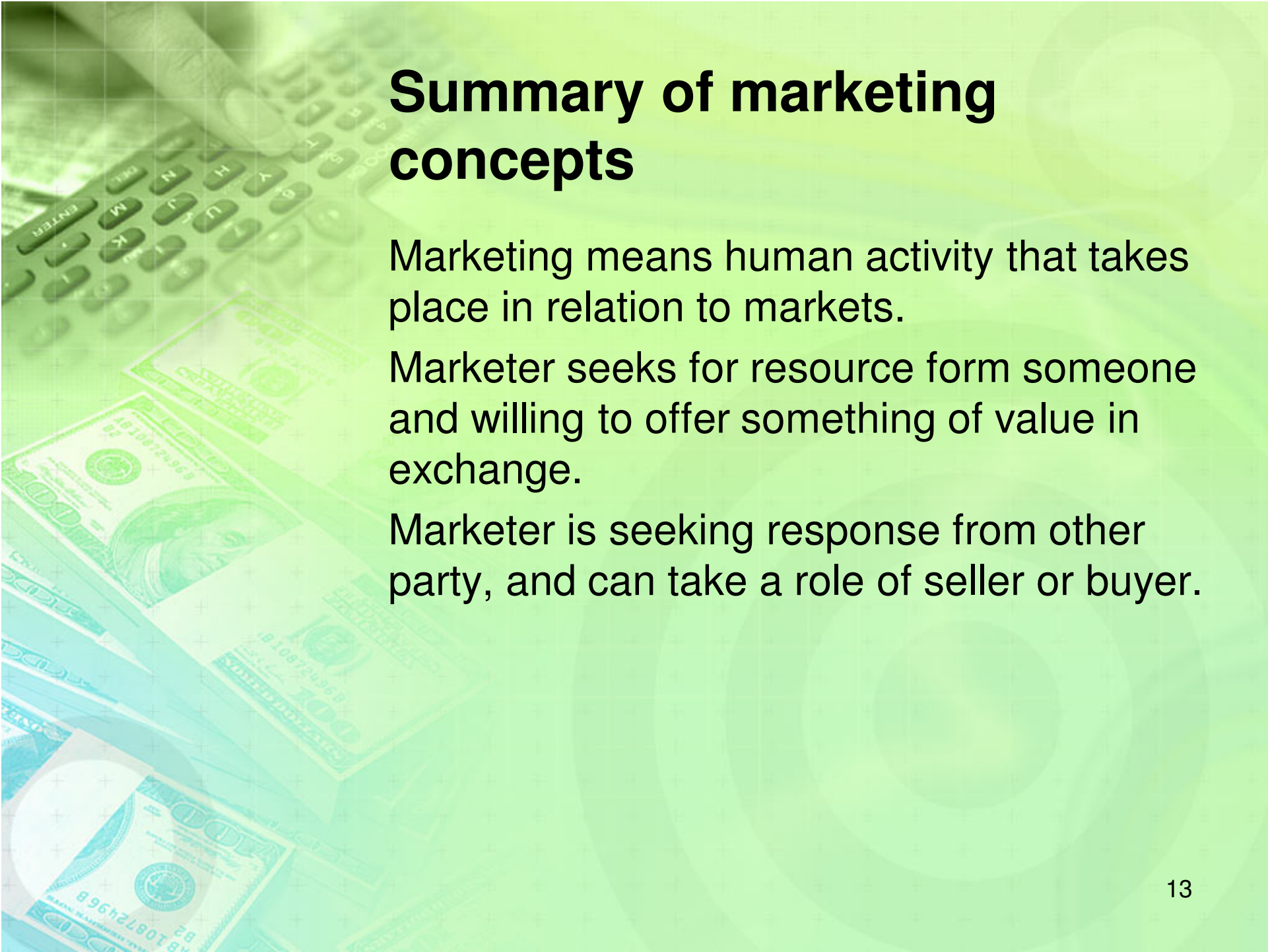
Market are seen as buyers (their groupings), the sellers-as industry. They are connected with flows:

- Communication
- Products (goods/services)
- Money
- Information

Summary of marketing concepts

Marketing means human activity that takes place in relation to markets.

Marketer seeks for resource form someone and willing to offer something of value in exchange.

Marketer is seeking response from other party, and can take a role of seller or buyer.

13

Marketing management

It is the analysis, planning, implementation and control of programs

  designed to create, build, and maintain beneficial exchanges and relationships with target markets

    for the purpose of achieving organizational objectives

The organization forms the idea of a desired level of transactions with the target market. It has a task of influencing the level, timing, composition of demand according to goals.

States of demand to cope: negative absent, latent, falling, irregular, full, overfull, unwholesome demand
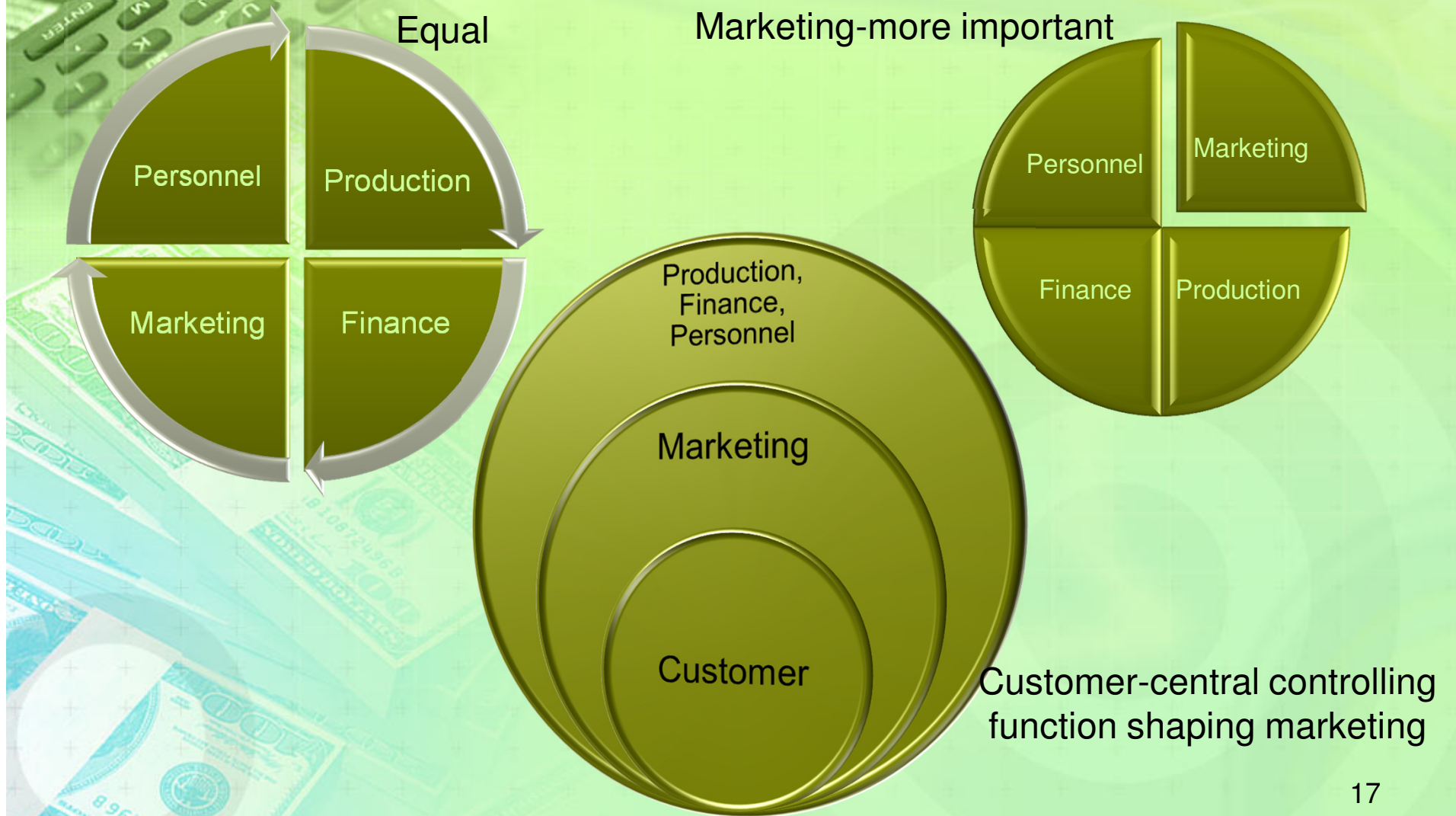
Marketing management

Marketing orientation	Focus	Means	Ends
Production concept	Mass production lowering costs and price	High production efficiency and wide distribution coverage	Sell what is produced. Leads to impersonality of consumer
Product concept	Seeking for quality (as it is understood by producer), hoping that consumer favors only products of exceptional performance	Make good products and improve them over time	Selling what producers "love" themselves cause marketing "myopia" losing sight what customer wants
Selling concept	Product distribution	Selling and promotion	Profits through sales volume
Marketing concept	Meet customer needs	Integrated marketing	Profits through customer satisfaction.
Societal marketing concept	Determine customer needs	Deliver needs fulfillment better than competitors	Preserve and ensure long-run society welfare

Marketing's role in a company

- Equal function or "primary four": marketing, production, finance, personnel
- More important function
- Central major function
- Customer –central function for controlling 4 primary functions
- Customer as controlling, marketing and integrative function in the center

Marketing's role in a company

Equal

Marketing-more important

Personnel | Production

Marketing | Finance

Personnel | Marketing

Finance | Production

Production, Finance, Personnel

Marketing

Customer

Customer-central controlling function shaping marketing

17

Marketing theories

Most prevailing theory is 4P (McCarthy, 1968)-marketing mix (customer, markets, etc. missing here).

Extension by Kotler (megamarketing) 4+2P

Booms&Bitner (Service marketing) 4+3P

Baumgartner (1991) – 15P

The mix concept was initially developed by Neil Burden (1964) derived from Culliton (1948) : marketing is a mix of ingredients (12 elements +4 forces) (Product planning, pricing, branding, channels of distribution, personal selling, advertising, promotions, packaging, display, servicing, physical handling, fact finding and analysis) + (behavior of : consumers buying, trades' (ret.wh), competitors and their position, governmental

Search for suitable set of ingredients for each transaction with customer.

4P – marketing mix components

Product
- Product variation
- Product differentation
- Product innovation
- Product elimination

Price
- Cost recovery pricing
- Penetration pricing
- Price skimming

Marketing mix

Place
- Distribution channel
- Direct sales
- Indirect sales
- E-Commerce

Promotion
- Individual communication
- Mass communication
- Brand management
- Corporate Identity

19

Marketing theories – 4P concept expansion

4Ps McCarthy (1960)	5Ps Judd (1987)	6Ps Kotler (1984)	7Ps Booms and Bitner (1981)	15Ps Baumgartner (1991)
Product	Product	Product	Product	Product/service
Price	Price	Price	Price	Price
Promotion	Promotion	Promotion	Promotion	Promotion
Place	Place	Place	Place	Place
	People	Political power	Participants	People
		Public opinion formation	Physical evidence	Politics
			Process	Public relations
				Probe
				Partition
				Prioritize
				Position
				Profit
				Plan
				Performance
				Positive implementations

Source: Gummesson (1994)

Marketing theories

Relationship marketing theory (Gronroos1996, Gummesson,1999 and USA "school".

Christopher, Payne, Ballantyne (1991) Six markets

Kotler (1992) Ten players

Morgan, Hunt (1994) Ten partnerships

Gummesson 30R :classical relationships (3), special (14), mega (6), nano (7)

Relationship history of communication with customer leads to future activities including transactions.

Relationship processes can be considered as tangible, as they use resources and can be measured by quantitative indicators. They have life cycle. (Gronroos, 1996).
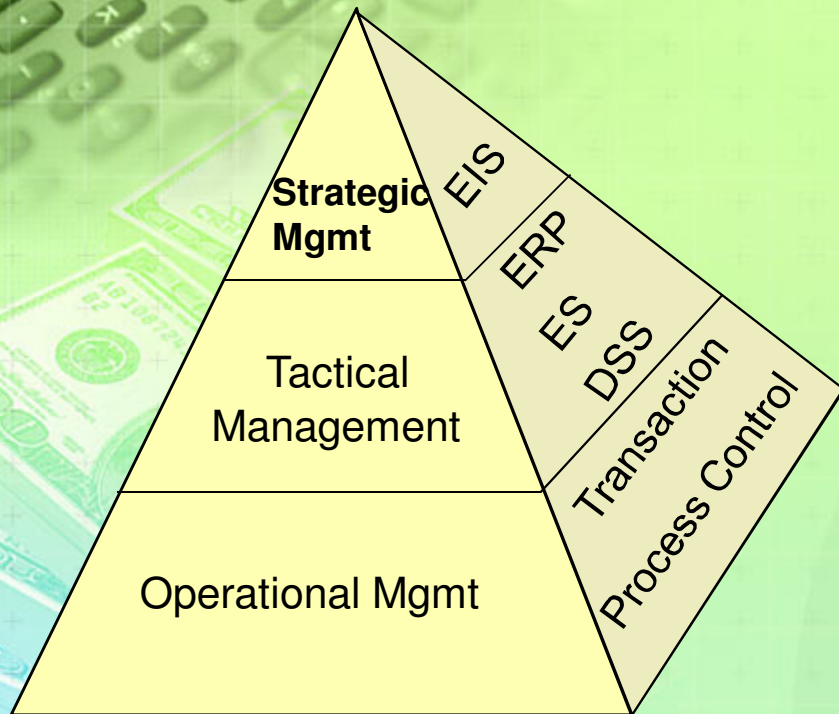
21

Marketing and management processes (functions)

- 5 Key Functions of Management

∞ Plan
∞ Organise
∞ Make decisions (Command)
∞ Co-ordinate
∞ Control

If the specialist does not perform any of these functions, he cannot be considered as manager.

MIS & Related Organisational Functions (Lucey, T.)

Pyramid labels (bottom to top): Operational Mgmt, Tactical Management, Strategic Mgmt. Right side of pyramid (top to bottom): EIS, ERP, ES, DSS, Transaction Process Control.

Strategic Management:
Provides an organisation with overall direction and guidance – mission and vision (e.g. presidents, vice-prez.)

Tactical Management:
Develops the goals and strategies outlined by Strategic Management (e.g. Head of marketing department

Operational Management
Manages and directs the day-to-day operations and implementations of the goals and strategies, e.g. sales manager

Non – Management employees:
Producing goods and services – serving customers, order processing.

Marketing work scope and careers

- Sales manager
- Sale representative
- Advertising and promotion manager
- Marketing researcher
- Customer service manager
- Product manager
- Market manager
- Marketing vice-president

Extensive career specifications exist in enterprises

Marketing work and careers (e.g. defined by certification)

Identify information and research requirements for business and marketing decisions.

Manage the acquisition of information and the Marketing Information System (MkIS).

Contribute information and ideas for business and marketing decisions.

Create a competitive operational marketing plan appropriate to the organization's context.

Integrate appropriate marketing mix tools and manage them to achieve the effective implementation of plans

Marketing work and careers (e.g. defined by certification)

Define and use appropriate measures to evaluate the effectiveness of marketing plans and activities.

Create an effective communications plan for a specific campaign.

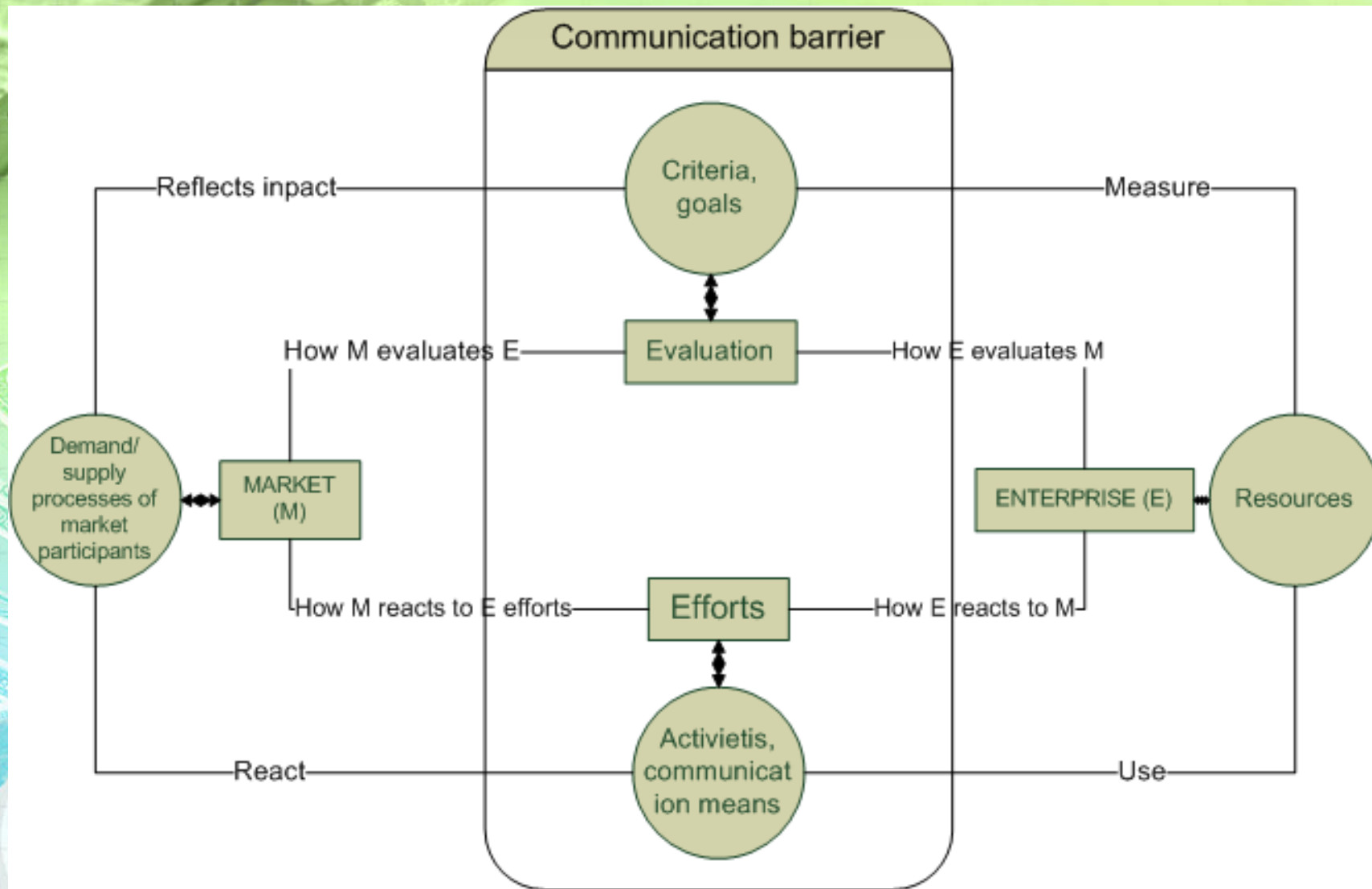Manage marketing communications activities.

Develop and manage support to customers and members of marketing channels.

Plan a marketing project.

Manage a team for marketing project or tasks.

Make recommendations for changes and innovations to the marketing process for value enhancement

"Battlefield" for performing marketing tasks

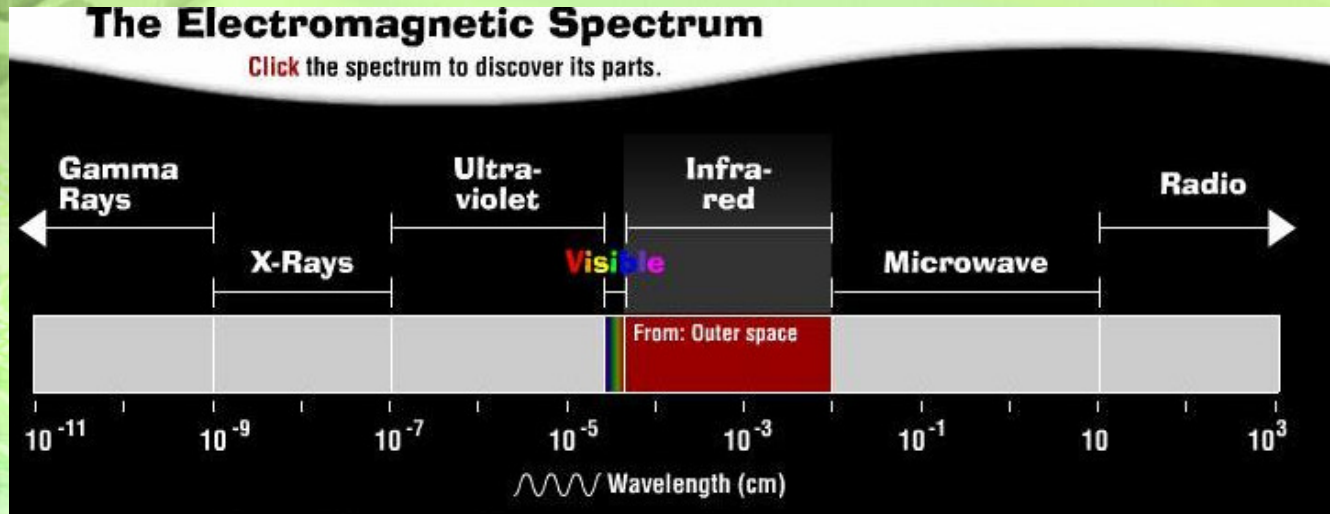# MkIS as information equivalent of marketing management of the enterprise

Management information systems have to reflect reality. By looking at the system we should be aware of structure and dynamics of processes of the entire scope of marketing.

E.g. accounting system of the enterprise consists of chart of accounts interrelated by double entry principle.

What are the components of marketing system, can we consider their entirety as information equivalent of marketing?
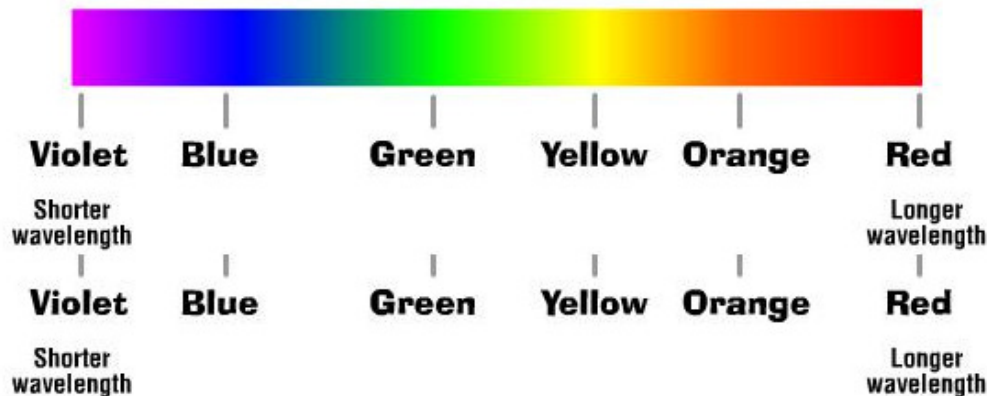
MkIS and marketing of the enterprise. What entirety we understand as system ?

.. what tools can show us the invisible part ?

Definitions of MkIS

MIS may be defined as a set of procedures and methods for the regular, planned collection, analysis, and presentation of information for use in making marketing decisions(Cox &Good, 1967)

MkIS comprises all computer and non-computer systems, which assist the marketing function to operate effectively. MkIS include many systems, which are not generally thought of in marketing terms, e.g. general ledger or production-planning systems.(O'Connor & Galvin 1997)

Marketing information systems are people, equipment, and procedures to gather, sort, analyze, evaluate, and distribute needed, timely, and accurate information to marketing decision makers (Armstrong & Kotler, 2007)

.. there are many more authors and definitions..

Requirements for MkIS by definitions

Requirements for MIS creation

MIS quality	Requirement to MIS quality: description and author
MIS goal	▪ Gather , sort, distribute, analyse, evaluate pertinent, timely and accurate information (Cox and Good, 1968; McCarthy *et.al.*, 1985; Marshall and LaMotte, 1992; Kelley, 1965) ▪ Information for making effective decisions to improve planning, implementation and control (Kotler, 2001)
MIS structure	▪ Set of procedures and methods(Cox and Good, 1968) ▪ Combination of procedures, human and computerised resources (Kotler, 1985; Kelley, 1965; O'Connor and Galvin, 1999) ▪ Formal system for creating organized information flow (Lucey, 1991, Marshall and LaMotte,1992) ▪ Structure is freely composed of functional subsystems (Uhl, 1974)
Sources of information processed by MIS	▪ External, internal, research information (McCarthy *et.al*, 1989; Kotler, 2001) ▪ Planning, control, research information (Smith *et al.*, 1968)

MkIS definition summary

∞ The essence of a modern MkIS is people,

∞ who take part in the processes of marketing management

∞ by using the most recent achievements of IT.

∞ These processes are based on the flow of information,

∞ which enables to solve encountered decision problems

∞ and generate adequate marketing decisions.

MkIS definition summary

- ∞ MkIS definitions echo the management information system, no specific marketing-related features are presented.

- ∞ The marketing manager is mentioned in the definitions without distinguishing between various types of activities, marketing tasks or hierarchical level.

- ∞ MkIS is not defined as a general type of system (I-O-F), rather it is composed of computerized and non-computerized elements assisting marketing management processes.

- ∞ The MkiS structure is not stable, due to changing needs in each stage of marketing processes, availability of information technologies and data, risk, uncertainty.

MkIS definition summary

∞ The managers become part of group which plans information needs and implementation of MkIS. That makes MkIS unique in each enterprise.

∞ The qualification of mangers is related to information quality. Improvement of information quality characteristics should go in tune with increasing skills.

∞ The changing environment for marketing decisions requires flexibility of inclusion required information sources.

∞ It means that the process of creating MkIS can become ongoing, its structure composed in a flexible way from various subsystems, and corresponds to subjective needs of the managers.

The user interaction with the Marketing Information System (MkIS)

MARKETING MANAGER

Requests for information →

Regular and customized reports ←

MkIS

Systems and Procedures

- Collection
- Analyses
- Storage
- Retrieval and
- Dissemination

The features of marketing Information System (MkIS)

Types of information needs (classical)

Secondary data sources	**Inside company**	Company files, intranet, reports, marketing information system, people, sales, cost data
	Outside company	Internet, libraries, governments, trade associations, universities, private research organizations
Primary data sources	**Observation**	Mechanical approaches, Personal approaches
	Questioning	In-depth and focus group interviews, Online, mail, phone, personal surveys, Panels

Source? - knowledge of marketing manager, experience, intelligence and derived wisdom from ability to merge information

Types of information needs

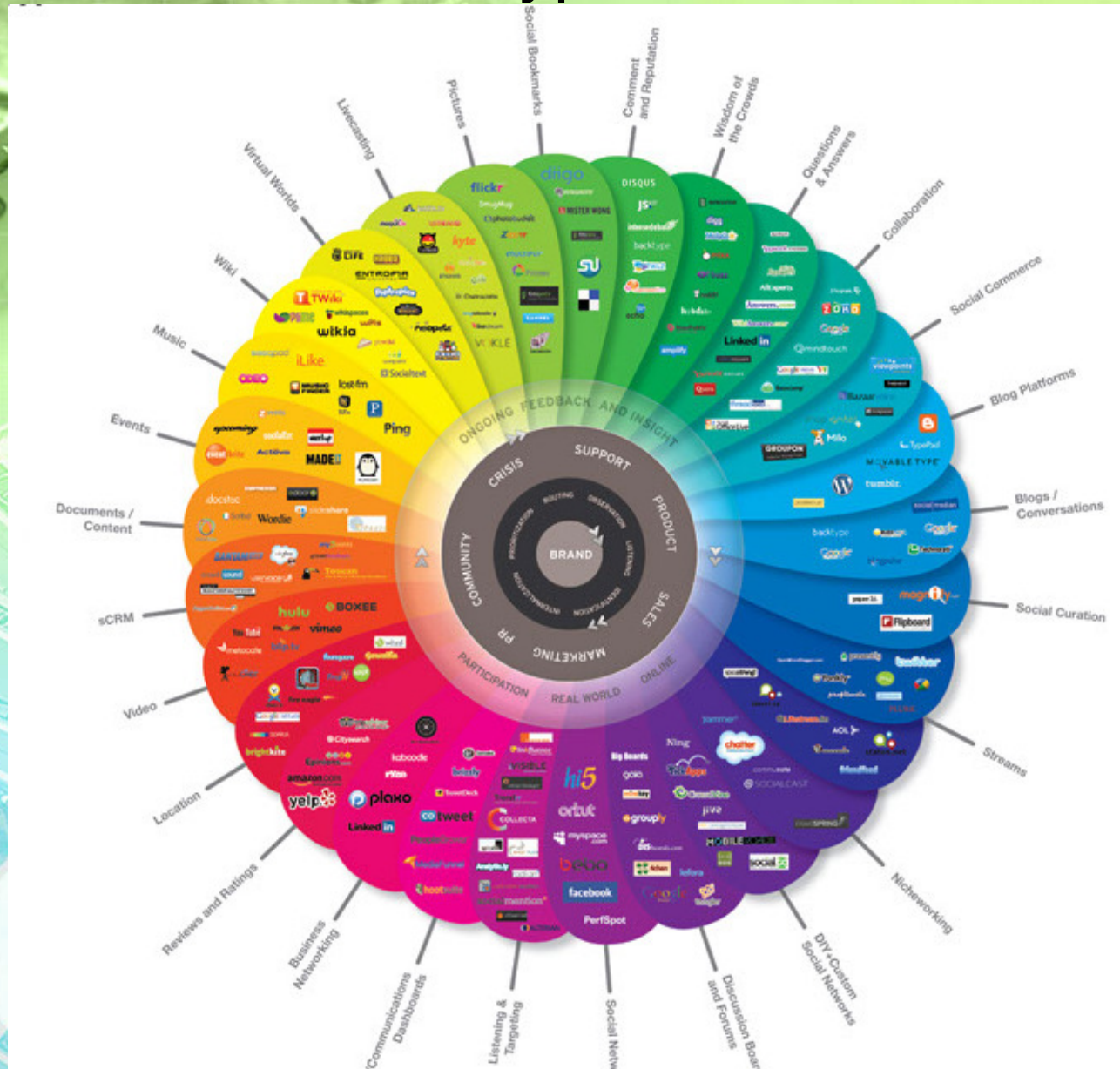Where do we get information?

Who prepares it to marketing managers ?

What is the format of knowledge?

Marketing uses knowledge, created and entered in other departments or organizations

Influence of marketing theories to MkIS

Marketing is planned according to the 4P, it is implemented by performing different specialized tasks (market analysis, advertising, sales, customer service, etc.), it is controlled by applying historical financial indicators, although all marketing activities aim to bring changes in future.
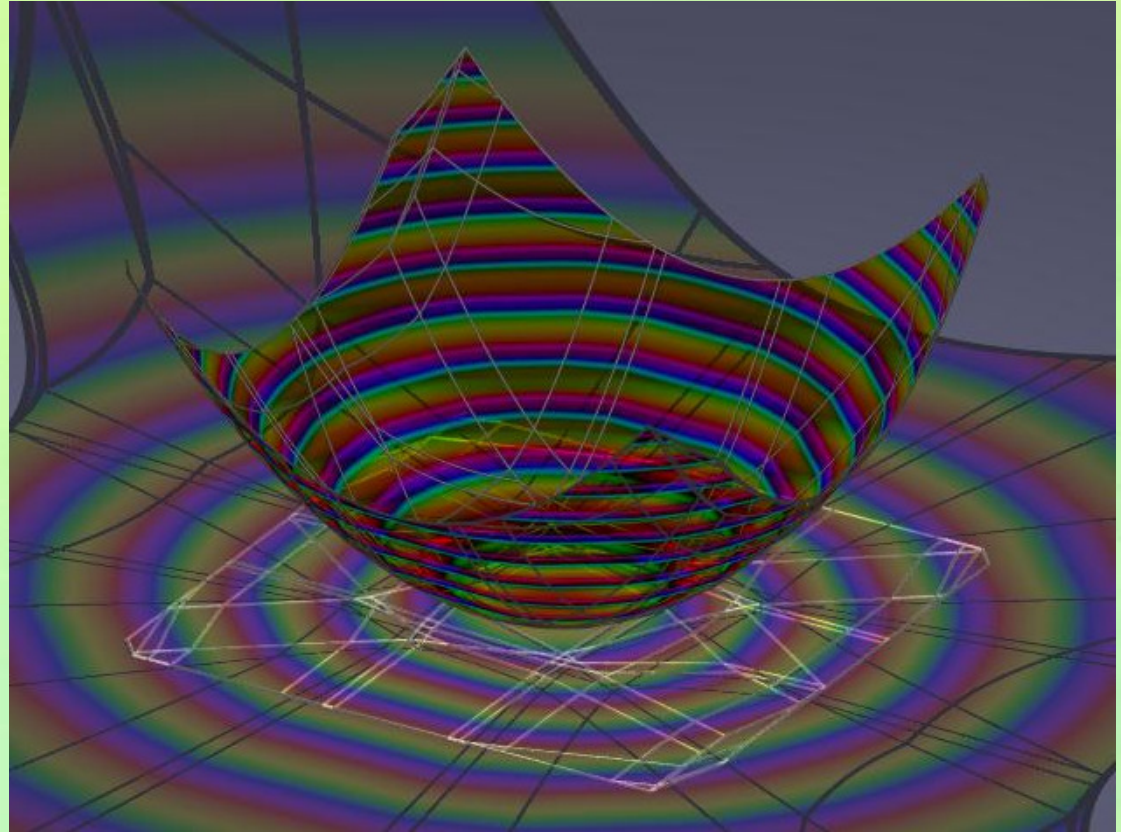
Relationship marketing suggests describing marketing of the enterprise by its set of relationships and their dynamics.

Therefore in contrary to "4P" , the RM can serve as basis for information equivalent of the enterprise.

4P marketing is implemented by special department, and in RM all employees ar considered as *"part-time marketers"* (Gummesson, 1999)

MkIS and marketing of the enterprise. What entirety makes the model of MkIS system ?

∞ Structure of the model
∞ Dynamics of the processes
∞ Information describing the processes
∞ Evaluation of the performance (measures)
∞ Different levels of MkIS representation suggest of its multidimensional origin
∞ How we can select dimensions for MkIS and create their meaningful projections ?

Importance of MkIS concept and model as adequate information equivalent of marketing

How the customer explained it

How the Project Leader understood it

How the Analyst designed it

How the Programmer wrote it

How the Business Consultant described it

How the project was documented

What operations installed

How the customer was billed

How it was supported

What the customer really needed
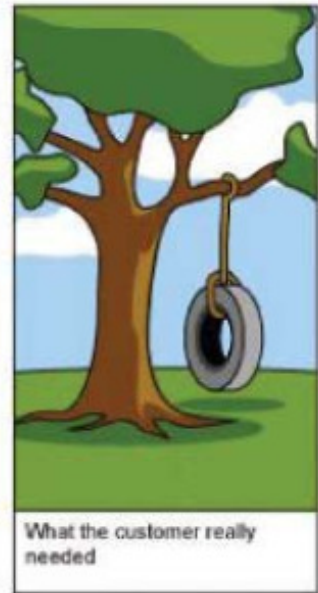
Structure of MkIS model

∞ Many authors present their own MkIS model

∞ What is the system model in general? What parts does it consist of?

∞ What dimensions can be observed in marketing system?

∞ Evaluated from system theory perspective, the suggested models can be considered as illustrative structures.

∞ Model should reflect structure and dynamics of the system, ensuring porssibility to transfer conceptual model to the IS architectural model and implementation by IT.

The MkIS place in marketing (Kotler)
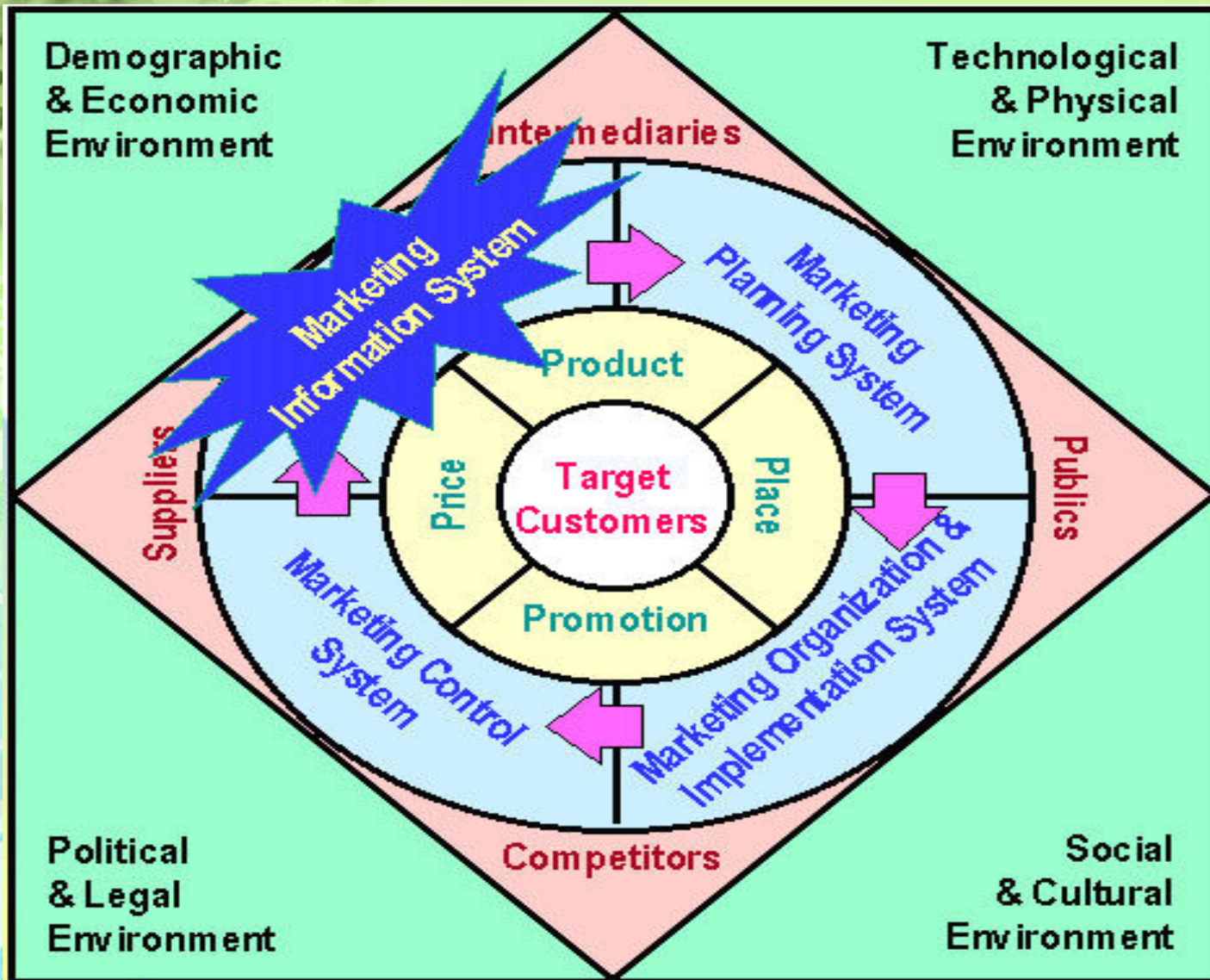
Model : Kotler P. (2003)

The MkIS model (subsystems)

Marketing Managers
Analysis, Planning, Implementation, Control

Marketing Information System

Assessing Information Needs

Distributing Information

Developing Information

- Internal Records
- Marketing Intelligence
- Decision Support
- Marketing Research

Marketing Environment
Target Markets, Marketing Channels, Suppliers, Competitors, Publics, Macroenvironment Forces

Marketing Decisions and Communications

Model : Kotler P. (2003)

The MkIS model (adopted by many authors :)
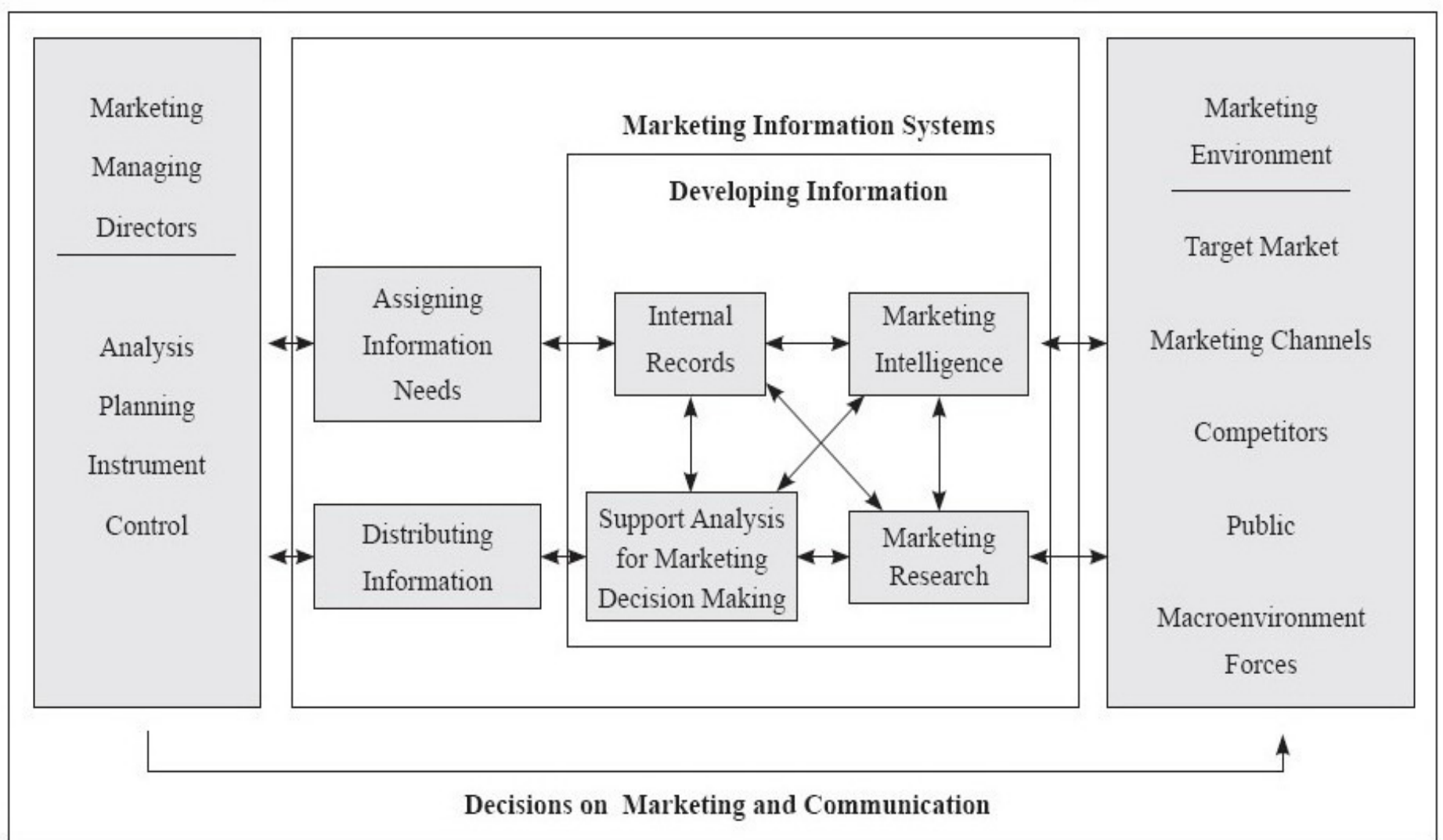
Model : Burns, A. & Bush, R. (1995)

The MkIS model (McCarthy)

MKIS (Brandaid model)

An MKIS (Brandaid model) is made up of input and output subsystems connected by a database

The Input Subsystems are:

- Transaction processing system
- The marketing research subsystem
- The marketing intelligence subsystem

Each output subsystem provides information about four critical elements in the marketing mix:

- The product subsystem
- The place subsystem
- The promotion subsystem
- The price subsystem

The MkIS Brandaid model (4P)

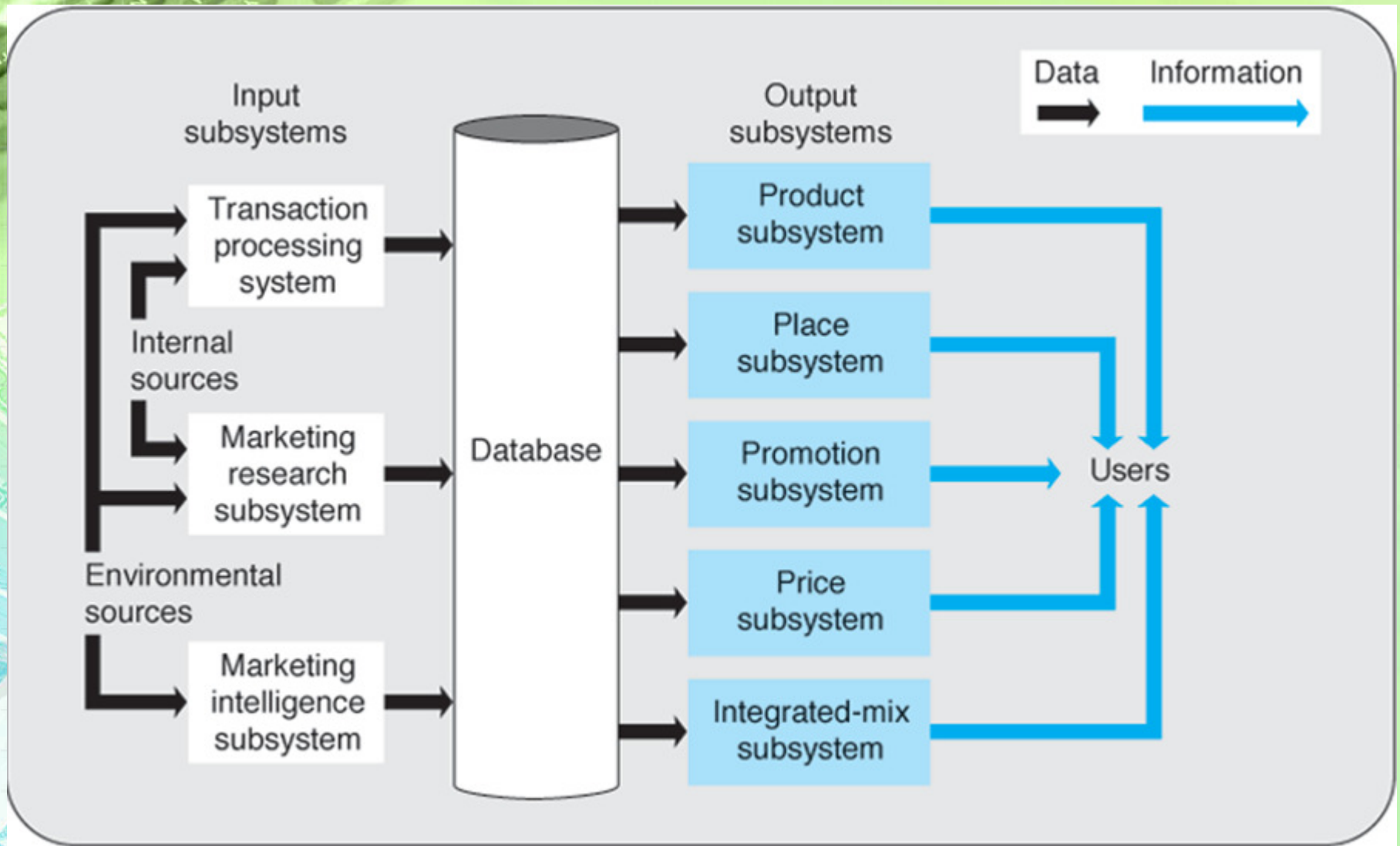| MkIS category of functional goal	Author, source
• MkIS for collecting information and marketing research, intelligence, senvironment scanning	Kelley, 1965; Kotler, 2001
• Computer support for marketing information processing, modeling	Kotler, 1985; Proctor, 1991
• Creating marketing information resources for competitive advantage	O'Brien, 1990
• MkIS information support to marketing functions: sales management, advertising, customer management, etc.	Moriarty and Swartz, 1989
• Information support to marketing management processes, such as planning, decision- making and control.	Lucey, 1991
• MkIS for needs of marketing management hierarchical levels	Lucey, 1991; O'Brien, 1990
• MkIS supporting specialized functions: data processing, reporting, expert systems, decision support systems	Sprague and Carlson, 1995
• MkIS specialized for business area of enterprise	Integrated IS provided by firms: Forpost, Nasdaq, Smart Amadeus, Gabriel, Sabre, Sirena, BABS,
• MkIS as inseparable part of IT-enabled marketing functions: database marketing, customer relationship marketing, etc.	Integrated IS provided by firms: Oracle, Baan, Peoplesoft, Microstrategy, SAS, SAP

Influence factors to MkIS creation

Factor	Description
Specialization for the business area	Specialization means that MkIS is created for fulfillment and analysis of the operations of specific business: service, retailing, banking, travel agency or stock exchange. Specialization is aimed to fully adjust systems to particular set of marketing activities, related to sales management, customer service, or daily operations of marketing personnel of applied business area.
Integration of information sources of various origin	The information for marketing management is combined from sources originating in the departments of the enterprise and in its external environment. It can be intentionally collected while conducting market research as well. The important source of information is the experience and knowledge of marketing manager, as their work usually involves complex decision- making activities and require both comprehensive analysis of changing environments and a synthesis of useful information (Mintzberg, 1994a, 1994b).

Influence factors to MkIS creation

| Factor	Description
Computerization of MkIS	The selection of possibilities for serving information needs of marketing managers is increasing with the development of information technologies. In most enterprises the computerization tools of various functionality coexist simultaneously. Surveys reveal that the most widely used computer- based systems in marketing are general IT tools such as spreadsheets, graphic packages, word processing, electronic mail, relational database systems and statistic packages. The advanced IT used for marketing are: data warehousing, OLAP, data mining, fuzzy logics, which enable to process complicated inquires, search for patterns in data, and handle imprecise decision rules.
Integration of MkIS subsystems and functions	The axis of integration of MkIS subsystems and functions indicates MkIS scope, which can vary from the tools, serving separate functions of marketing activities, to the integrated view of marketing management activities. The integrated systems include planning, decision-making or control subsystems. The functional tools include customer relationship management, e-procurement operations along supply chain, e-communication with customers and partners via internet and extranets.

MkIS classification

Functional scope of marketing information systems

Marketing information supply system

Computer support for marketing information processing and modelling

Marketing environment information analysis, marketing intelligence system

System for creating competitive advantage

| *System of strategic information sources* | *System for increasing operational effectiveness* | *Creating premises for innovation* |

Support system for marketing activities
- *Sales management*
- *Poductivity of sales personnel*
- *Analysis of customer needs*
- *Advertising and promotion*

Support system for marketing management processes
- *Planning*
- *Organizing*
- *Control*
- *Decision making*

Information support to marketing managers of different hierarchical levels

Operational level

Tactical level

Strategic level

IT based marketing (MkIS as inseparable part of product, servise, sales channel)
- *Data base marketing*
- *Internet marketing*
- *Internet catalogs*
- *Marketing in e-commerce*
- *Marketing of information products and services*
- *Customer relationship marketing (CRM, eCRM)*
- *E- supply chain management*
- *E- communication with suppliers and partners (B2B)*
- *Internal marketing*

Specialized management IS for marketing
- *Analytic processing, reporting IS*
- *Expert systems ES*
- *Marketing modelling IS*
- *Executive IS (EIS)*
- *Decision support systems (DSS)*

Business-specific, marketing-oriented IS
- *Banking IS*
- *Tourism IS*
- *Stock exchange IS*

SPECIALIZATION for the business area

COMPUTERIZATION

INTEGRATION of information sources of various origin

INTEGRATION of subsystems and functions

51

The MkIS model evaluation

- The analysed MkIS can be applied for one or two levels of analysis and only for partial presentation of situation and dynamics.

- The most advanced systems from the multidimensional point of view are the CRM systems, created for enterprise relationships, directed to customers. They present possibility to map relationships, connected with related information created in various functional modules of integrated system (MS Axapta, Microstrategy, SAP).

- The software for control (e.g.balanced scorecard) is created in several integrated systems (Axapta, SAP), These parts exist separately and cannot express the marketing processes, situation and development in enterprise, but present possibility for their conceptual integration in a MkIS

- The new theoretical developments of relationship marketing, knowledge management, balanced scorecard have major influence for MkIS creation principles. Their integrated use enables the information processing in three levels- logical, informational and goals- and can serve as basis for multidimensional MkIS structure

Decision-making process in MkIS
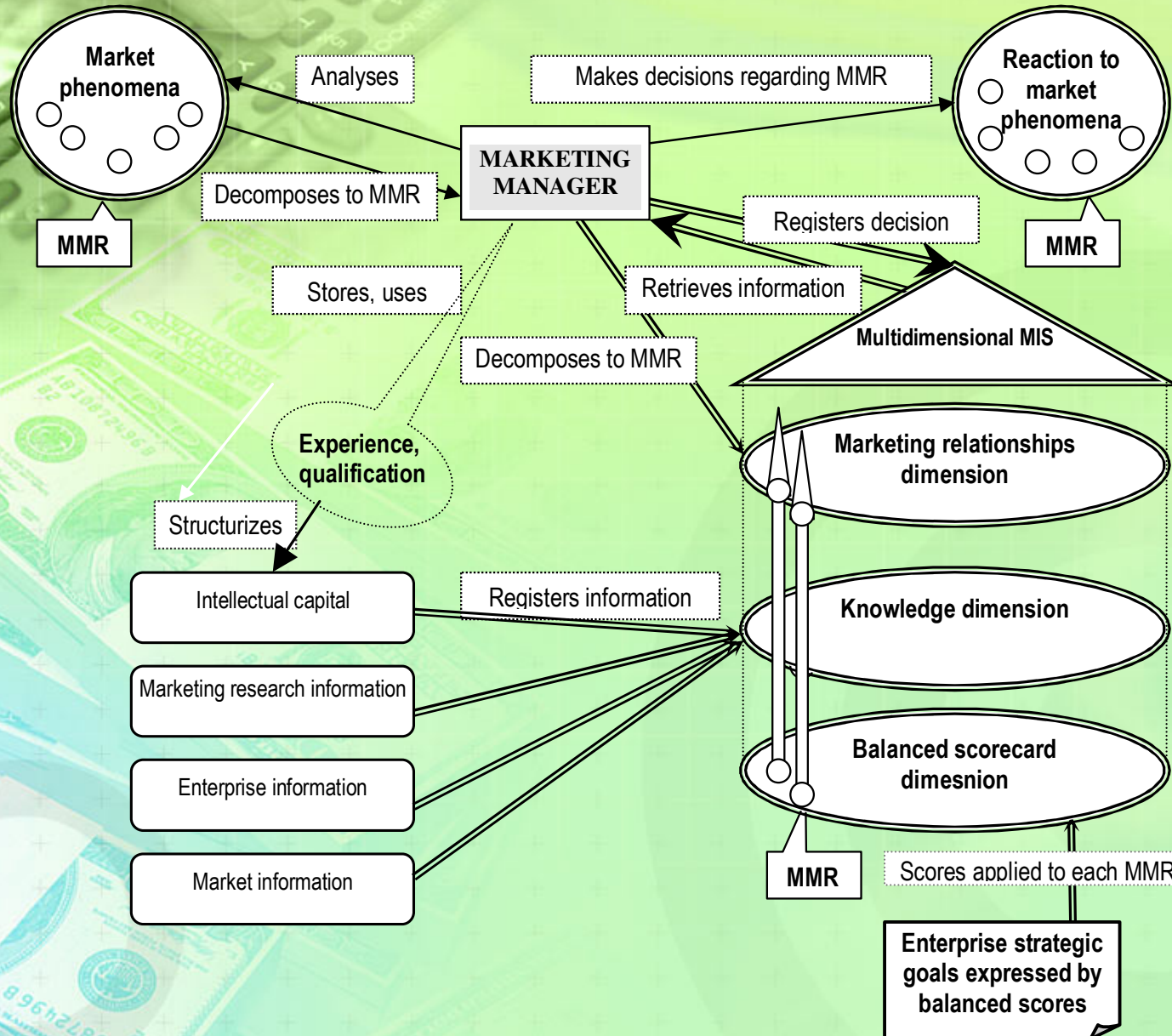
Interrelationship of MIS, MkIS and IT concepts

Marketing IS concepts	Management IS creation concepts (O'Brien, 1990)	IT concepts (O'Brien, 1990), Zikmund et al 2003)
1 Integration of functional modules	**Management operations processing**	**Transactional processing**
2 Project and campaign	Creating strategic advantage ERP (enterprise resource planning) CRM	Analytic applications, EAI (enterprise application integration), CRM
3 Value chain system		
4 Competitive system		
5 End-user „ad hoc" support		
6 Support for marketing management processes 7 Marketing intelligence system 8 Multidimensional MkIS	**Decision making support (DSS)** **Expert systems (ES)** **Executive information systems (EIS)** **Business intelligence systems (BI)**	**data warehouses, data mining, OLAP (online analytical processing)**

Interrelationship of MIS, MkIS and IT concepts

Different concepts can be identified by analysis of functionality and structure of the existing MkIS models.

However they all are based on combining different information processing methods implemented in MkIS functional subsystems and cannot serve the multidimensional origin of information processing of marketing managers

The MIS and IT concepts for MkIS implementation describe different perspectives of the same system.

Assignment 1- Part 1

Tools & software: online scientific databases, including *library.muni.cz*

1st Assignment has **two parts:**

Part 1: starting the scientific article (till Nov.5)

(abstract+introduction+analytical part+reference)

Part 2: completing the scientific article (Dec11-)

(solution+experiment+conclusion+submission)

***Part 1*: (individual/team)** *and lab work training-*scientific writing skills: analytical part. Exploring publications in scientific databases Springer, Thomson, Emerald, Elsevier, IEEE, etc. Writing in virtual teamwork space

Assignment 1- Part 1
The research and practice of creating MkIS in the enterprises

The task is fulfilled in teams of 2-3 people.

The goal of the task: to get acquainted to the needs and practical solutions for implementing information systems for marketing purposes.

For meeting this goal you are supposed to analyse the scientific articles on MkIS experimental research

The expected outcome:

1) The first part of the scientific article (written and submitted for first-round review)
abstract+introduction+analytical part+reference

It answers further outlined questions about 3 articles (2 given from list, 1 found).

Assignment 1- Part 1
The research and practice of creating MkIS in the enterprises

List of given articles- select 2 of them:

MkIS_Finland.pdf

MkIS_UK.pdf

MkIS_Greece.pdf

MkIS_UK_km.pdf

MkIS_USA.pdf

MkIS_Taiwan.pdf

Find one more recent article on MkIS-related research of 2008-2012 in scientific databases Springer, Thomson, Emerald, Elsevier, IEEE, etc.

Assignment 1- Part 1
The research and practice of creating MkIS in the enterprises

Questions discussed in the analytical part:

1) What we look for in the enterprises if we want to explore systems used for marketing purposes (software, databases, specialized systems or analytical tools, etc.)

2) What is recommended for MkiS creation by theoretical concepts and what is used in practice? Gaps?

3) How can you describe and compare experiments by their fulfillment strategy?

4) What are conclusions of articles, how MkIS systems should be created, what marketing areas are not served by systems?

5) What new solutions and technologies have emerged having in mind time span between of articles?

Assignment 1- Part 1
The research and practice of creating MkIS in the enterprises

Submission space:

1st Colloquium on Intelligent Marketing Information Systems 2012

Please use the template for Word and Easychair conference management systems for submission:

https://www.easychair.org/conferences/?conf=cimis2012

When you register the article, all the initial and further updated versions can be submitted to the system.

Literature

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