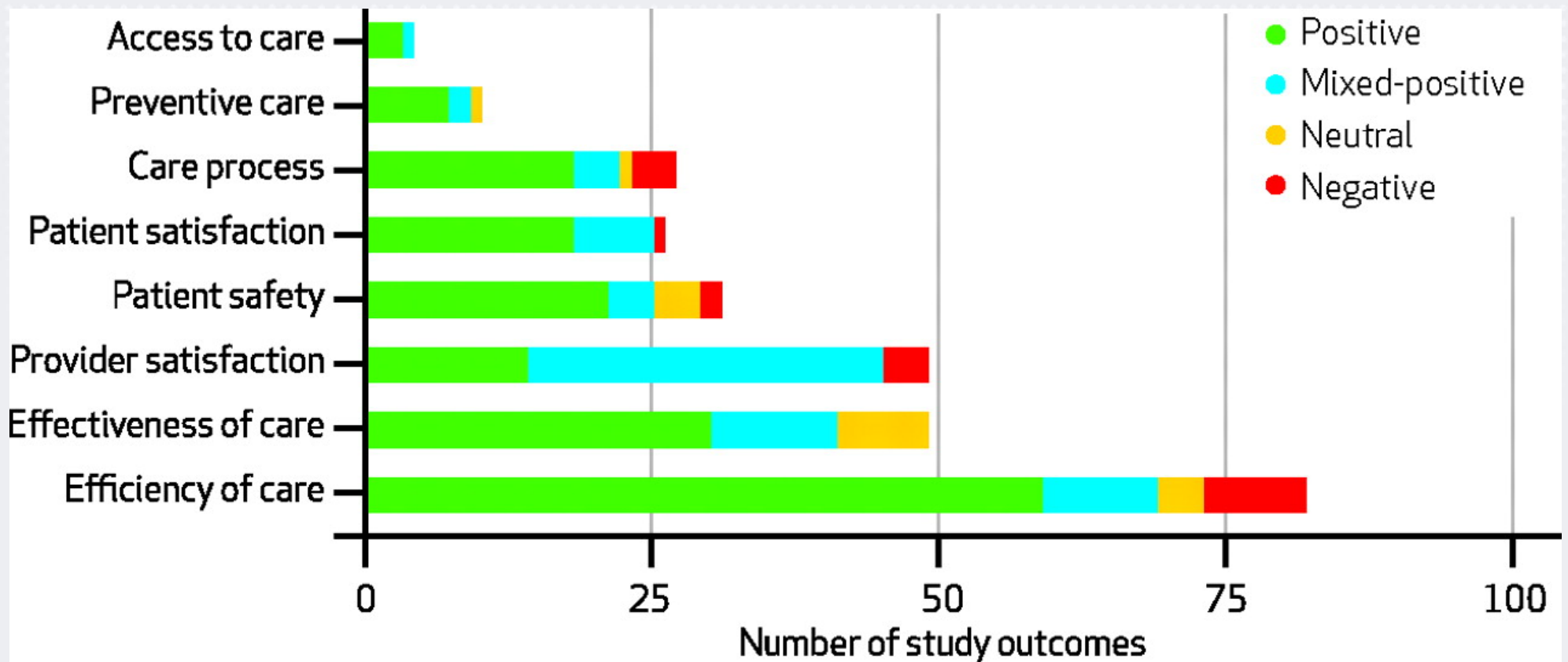# Healthcare: Areas for Improvements

Evaluations Of Outcome Measures Of Health Information Technology, By Type And Rating.

Melinda Beeuwkes Buntin et al. Health Aff 2011;30:464-471

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Business Process Management (BPM)

What is it?

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Business Process Management

- A disciplined approach to

  - identify, design, execute, document, measure, monitor and control (both automated and non-automated) business processes

 - to achieve consistent, targeted results aligned with an organisation's strategic goals

  (Ref: Association of Business Process Management Professionals-ABPMP)

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Business Process Management

- Involves
  - the collaborative and **technology** aided **mechanisms**,
  - improvement, innovation and management of end-to-end business processes
  - examining business processes that drive business results, **create value** and enable an organisation to meet its business objectives with more **agility**

- Enables an enterprise
  - to align its business processes to its **business strategy**,
  - to improve overall company **performance** through improvements of specific work activities either within a specific department, across the enterprise or between organisations

  (Ref: Association of Business Process Management Professionals-ABPMP)

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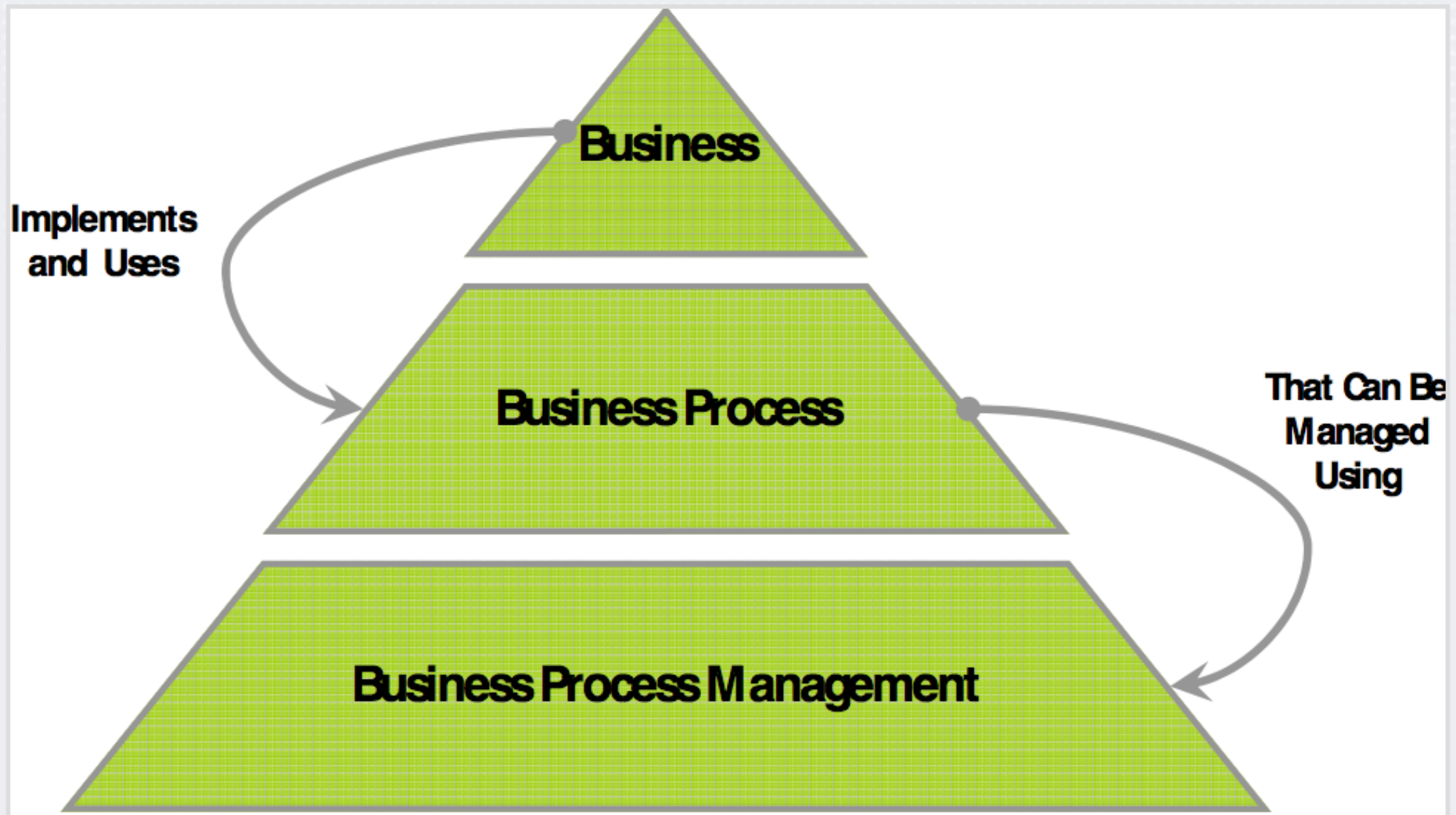
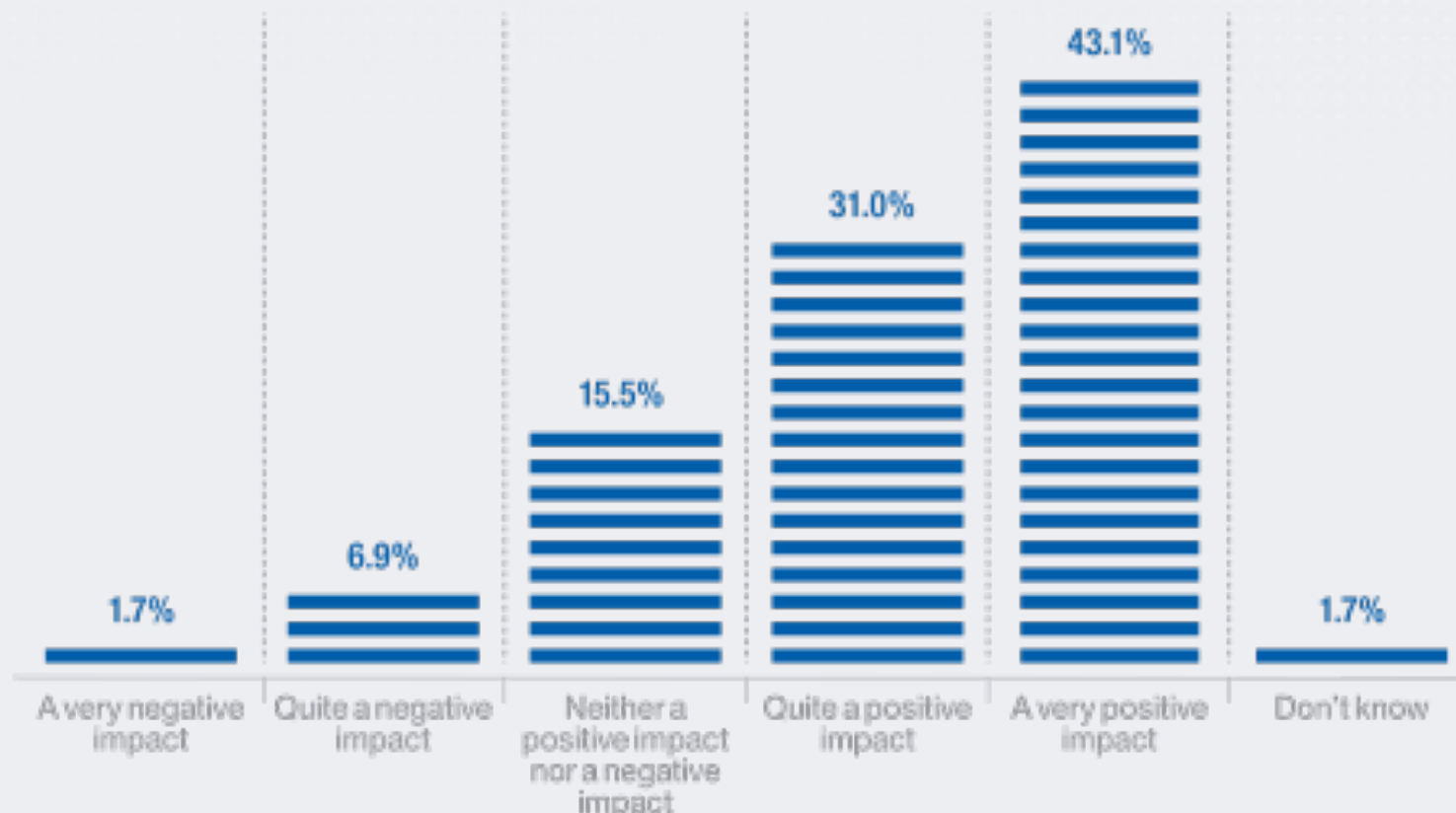# Business Process Management

Motivation: Why BPM?

- To identify key benefits of BPM
- Capgemini, and FreshMinds, conducted a quantitative and qualitative study [capgemini, 2012]
  - in 11 EU markets/countries,
  - in 10 sectors, including,
    - telecommunications, media and entertainment , utilities, energy and chemicals, professional services, and *Healthcare*
  - involved 1000 employees

Cost-efficiency

74% of businesses that introduced BPM to **reduce manual work** and **increase automation** reported a positive impact

What impact has this BPM initiative had on your business from the following perspective: Improving process performance by reducing manual work and increasing automation?

A very negative impact	Quite a negative impact	Neither a positive impact nor a negative impact	Quite a positive impact	A very positive impact	Don't know
1.7%	6.9%	15.5%	31.0%	43.1%	1.7%

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Business Agility

78% of businesses believe their BPM investment improved the **flexibility** of the organisation

What impact has this BPM initiative had on your business from the following perspective: Improving the flexibility of the organization?

A very negative impact	Quite a negative impact	Neither a positive impact nor a negative impact	Quite a positive impact	A very positive impact	Don't know
0.0%	6.8%	12.5%	39.5%	38.6%	2.3%

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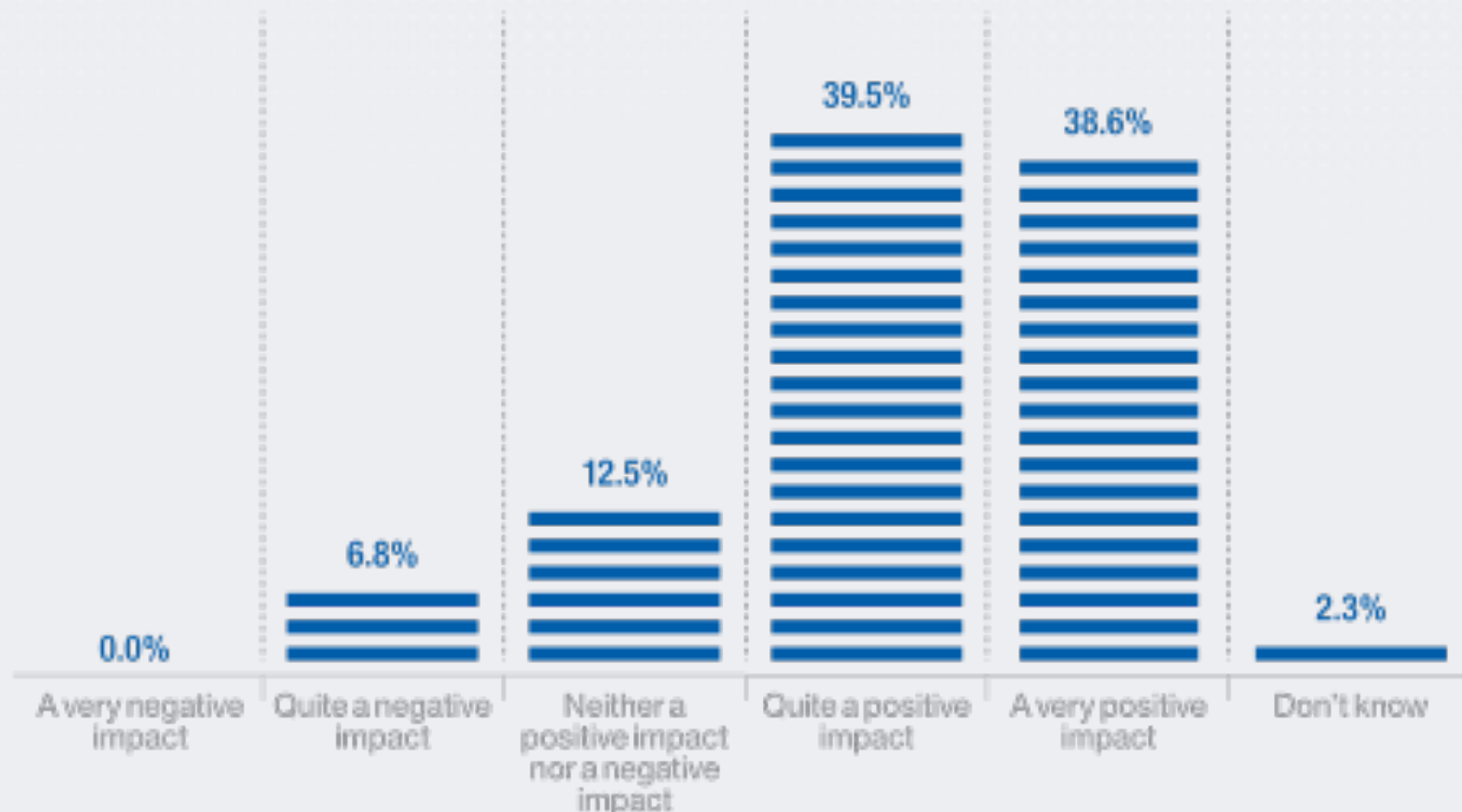
Compliance and Risk management

77% of businesses that introduced BPM to improve **compliance** and **risk management** reported a positive impact
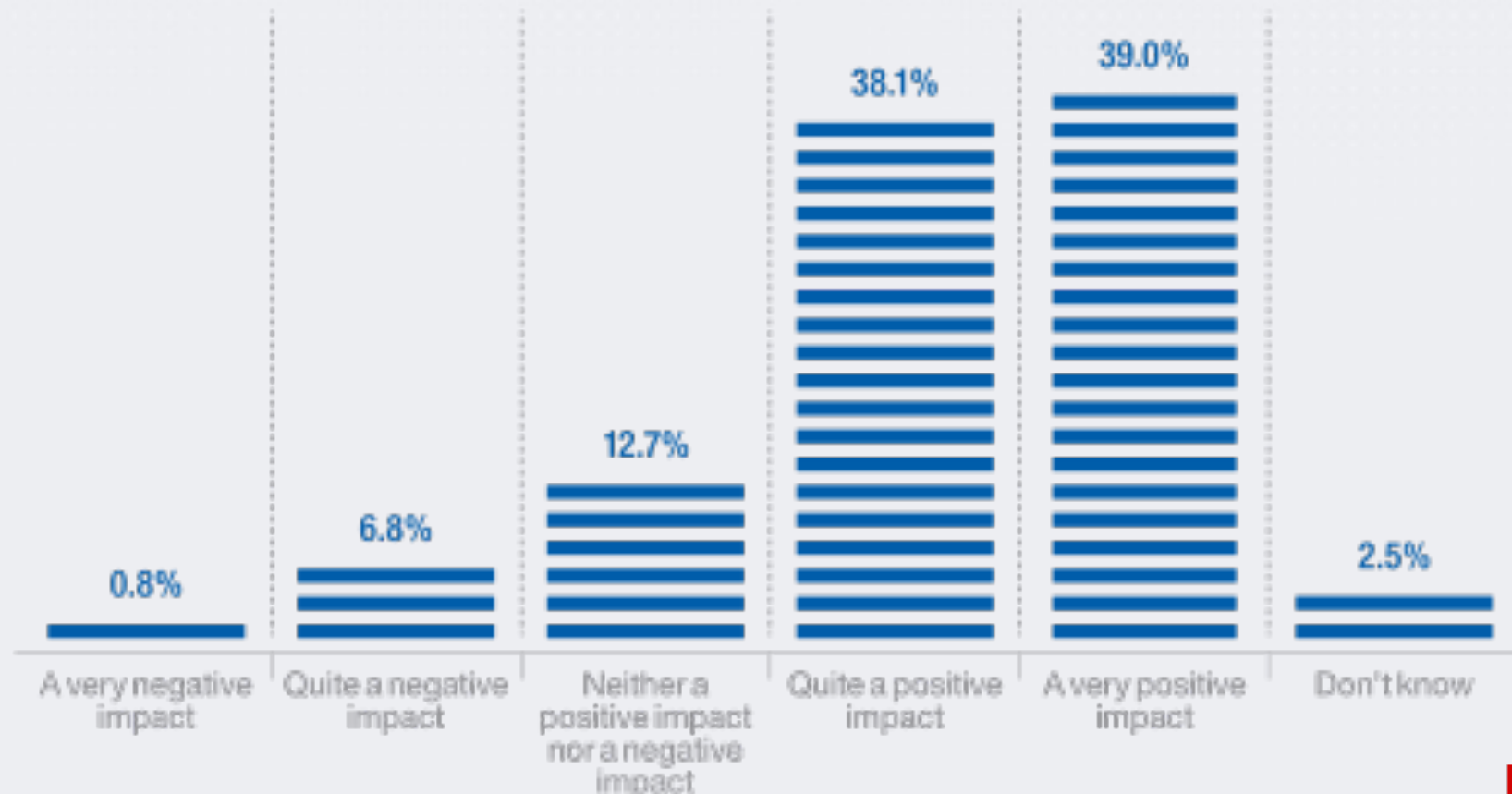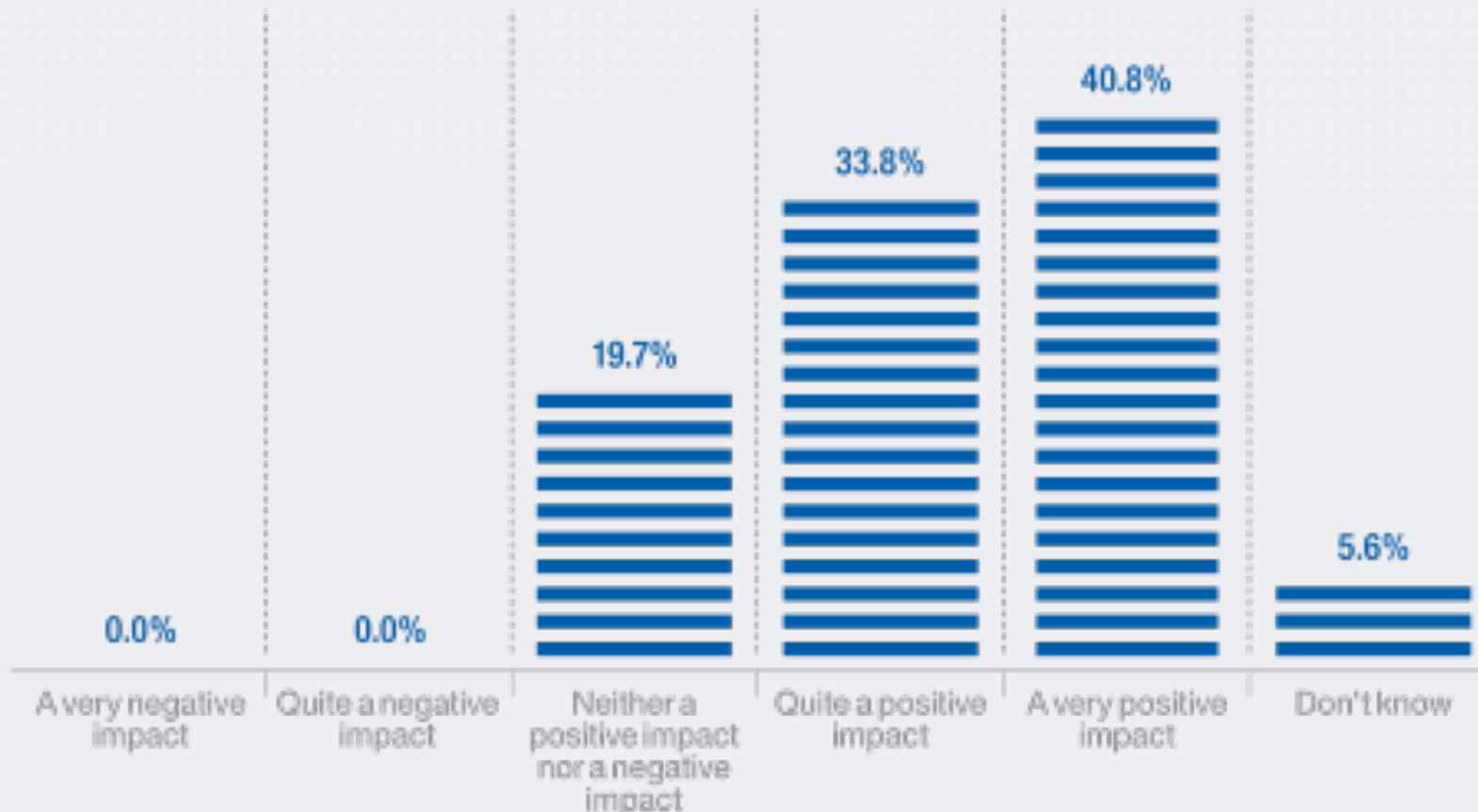
What impact has this BPM initiative had on your business from the following perspective: Improvement of compliance and risk management?

A very negative impact	Quite a negative impact	Neither a positive impact nor a negative impact	Quite a positive impact	A very positive impact	Don't know
0.8%	6.8%	12.7%	38.1%	39.0%	2.5%

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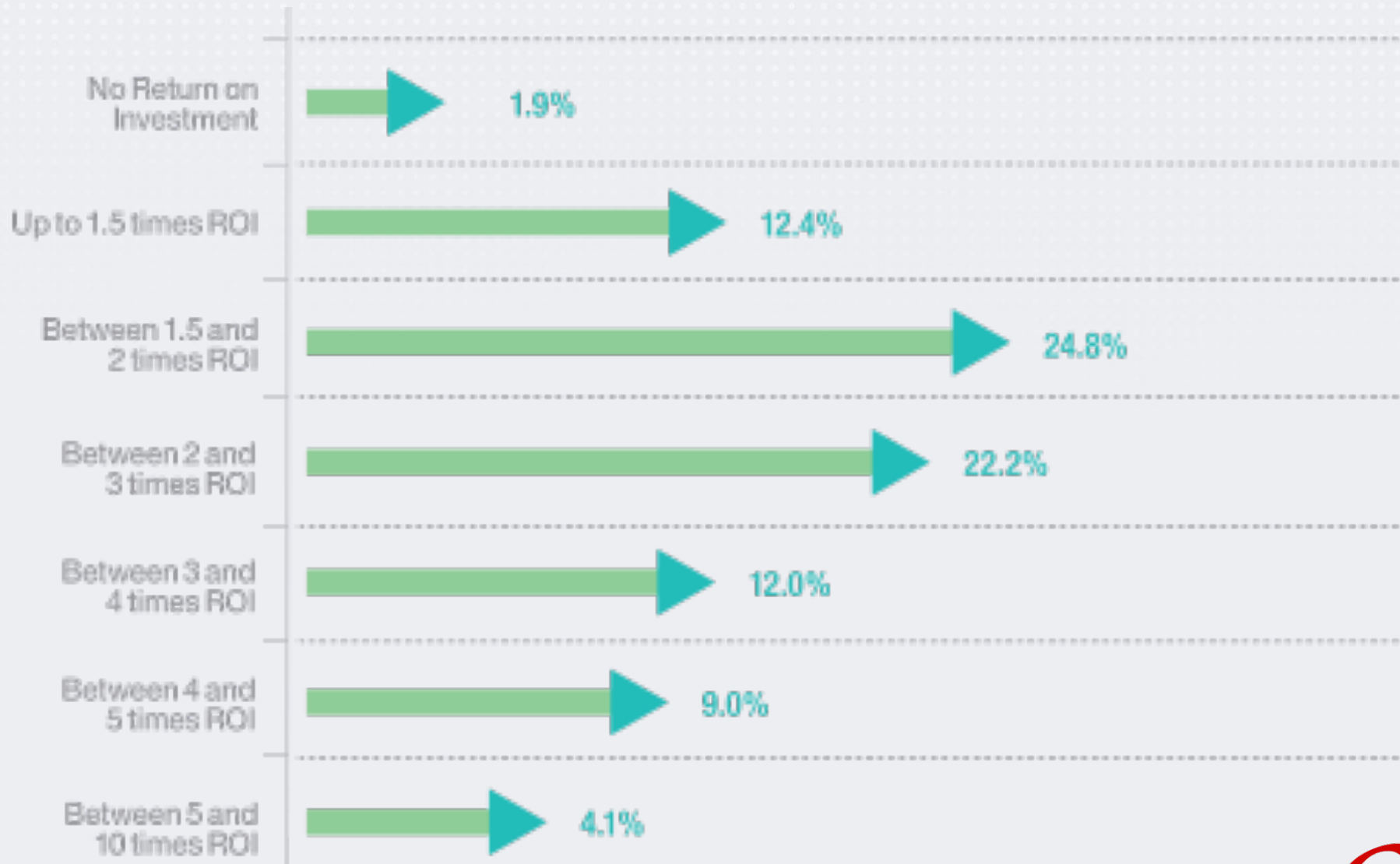Excellence in Health Informatics Integrated Curricula

Staff Satisfaction

75% of businesses that implemented BPM to improve **staff satisfaction** reported a positive impact

What impact has this BPM initiative had on your business from the following perspective: Improving staff satisfaction?

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BPM: Return on Investment

ROI Category	Percentage
No Return on Investment	1.9%
Up to 1.5 times ROI	12.4%
Between 1.5 and 2 times ROI	24.8%
Between 2 and 3 times ROI	22.2%
Between 3 and 4 times ROI	12.0%
Between 4 and 5 times ROI	9.0%
Between 5 and 10 times ROI	4.1%

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BPM can help with

- Economical situation
  - Globalisation / competition
  - Cost reduction
  - Merge/Acquisition
  - Performance

- IT Adoption
  - Decentralised/centralised
  - Web services/BPML
 - Integration
  - Multiple platform

Teaching method

- Lectures **(~ 2.5hrs per week)**

- Independent Student Reading
- Practical work: **(+ Group project)**

- Tutorials/Case study discussion **(in lectures)**

-------------------- **Course Assessment** --------------------
- Mid-term exam   **25%**
- Project   **30%**
- Assignments   **15%**
- Final exam   **30%**

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Recommended Course Textbooks

- Weske M. *Business Process Management: Concepts, Languages, Architectures*. 2nd Ed, Springer-Verlag (2012). ISBN: 978-3-642-28615-5

- Sharp A. and McDermott P., *Workflow Modeling : Tools for process improvement and application Development* 2nd edition. Artech House, Boston | London (2009). ISBN: 13: 978 1 59693 192 3

- White, S.A., Miers, D.: **BPMN Modeling and Reference Guide: Understanding and Using BPMN**. Future Strategies Inc. (2008)

- Sliver, B, BPMN 2.0 handbook, 2nd Ed, 2012.

- Charles Webster, BPM in Healthcare 2nd Edition

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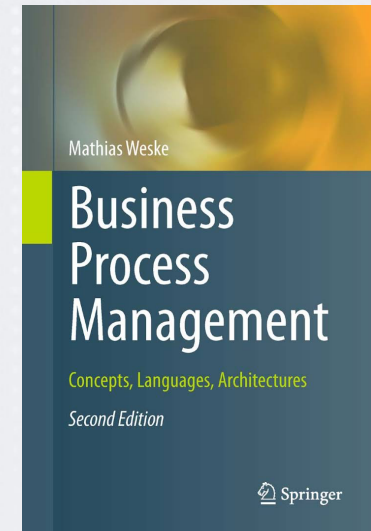
Definitions

What is Business Process Management?

its terms and body of knowledge

Process

- a series of actions, changes, or functions **bringing about** a <u>result</u> (*Oxford English Dictionary*, 2002);

- a series of operations performed in the **making** or **treatment** of a <u>product</u> (*Oxford English Dictionary*, 2002);

- a set of interrelated activities, which **transforms** inputs into <u>outputs</u> (ISO/IEC 15504, 2004).

- Process, is **unit of work** with clear <u>output</u>, may be achieved through a set of activities, performed by one or more stakeholder roles.

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Business Process

- "A collection of **activities** that takes one or more kinds of **input** and creates an **output** that is of <u>value</u> to the customer. A business process has a **goal** and is affected by events occurring in the external world or in other processes." [Burattin, 2015]

- "A structured, measured set of activities designed to produce a specified **output** for a particular customer or market. A process is thus a specific **ordering** of work activities across <u>time</u> and <u>place</u>, with a <u>beginning</u>, an <u>end</u>, and clearly identified <u>inputs</u> and <u>outputs</u>: a structure for **action**." [Burattin, 2015]

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Business Process

- *"A **business process** consists of a set of **activities** that are performed in **coordination** in an organizational and technical environment. These activities jointly realize a **business goal** "* [Weske, 2012]
  - e.g. production line of a car manufacturer, procedures for buying tickets on- line
- A **business goal** defines a target that an organisation aims to achieve by conducting a set of business **processes**.
- Each set of business processes defines **flow of work** to provide a business **output** or **service**. These may involve the participation of human, information, technology and systems to realise a business objective.

Process terms

- ***Process definition***
  The basic algorithm or behaviour of the process.

- ***Process instance***
  An occurrence of a process for specific input.

  e.g. Each instance of the travel reservation process, for example, is specific to a customer's itinerary.

- ***Activity or task***
  A step in a process, e.g. sending a flight request to the airline.

- ***Automated activity or task***
  A step in a process that is performed directly by the **execution engine**.

- ***Manual activity or task***

  A step in a process that is meant to be performed by a **human** process participant

Automated activities

- **Automated** activities generally fall into two categories:
  - Interaction with external systems: e.g. sending a booking request to an airline.
  - Arbitrary programmatic logic: e.g. calculating the priority of a task

- The <u>external system</u> interface requires the process runtime engine to have enterprise application integration (EAI) capabilities

- <u>Arbitrary programming logic</u> requires support for embedded code or the ability to call code. Fine-grained programming is best performed in
  - a lower-level language such as Java

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BPM-Body of Knowledge