Real-Time Management:
When AI goes Fast & Flow

Omar A. El Sawy & Pernille Rydén

Artificial intelligence and the next generation of competences :
How Digital – and Artificial Intelligence will impact jobs and competences profiles?

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Time Issues in Strategy and Organization

Edited by:
T. K. Das, *City University of New York*

A volume in the series: Research in Strategy Science. Editor(s): T. K. Das, *City University of New York.*

This volume will bring together some of the latest thinking on the key issues concerning the role and significance of time in strategy and organization. By selecting a number of cutting-edge research perspectives, frameworks, models, theories, and empirical findings that inform the subject, the chapters in this book will serve as a compendium of promising ideas to provide some rigorous impetus for a critical area of research in strategy science.

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Strategy and Organization

How Managers Perceive Real-Time Management:
THINKING FAST & FLOW

Pernille Rydén[1] and Omar A. El Sawy[2]

SUMMARY
A new era of disruptive technologies and changing business practices is moving a number of industries toward the "real-time" enterprise. With the increased capabilities of online digital platforms, managers need to deliver goods and services faster and respond rapidly to customers. It is therefore critical to ask what "real time" means to managers, what real-time management entails, and learn how enterprises capture business value through real-time management, especially when the ability to adjust and operate in real time must be ingrained in an organization's culture, structures, and processes. This article shows that managers who use "real time" in different ways can articulate different facets of experience and practices, leading to the "Fast & Flow" framework. Thinking of real time as "Fast & Flow" provides managers with insights for transitioning to real-time management that is better attuned to the organization, the market, and a technology-driven state of flux.

KEYWORDS: organizational change, organizational design, process innovation, strategic management, technological change, information technology, time-based competition, time pressure, agility, cognitive psychology

Since the scientific management days of Frederick Taylor and Henry Ford, managers have sought to increase business efficiency, to reduce unproductive time usage by analyzing temporal patterns of work behavior, and to adopt new technologies to move faster. "Real time" has been traditionally defined as the shortest amount of time it takes a system to

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What we know about real-time management

Agenda

1. Real-time management depends on the managers' interpretation of clock time

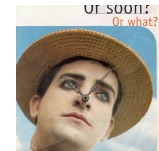**2. AI and real time: three scenarios**

Business as usual: more complexity – just faster

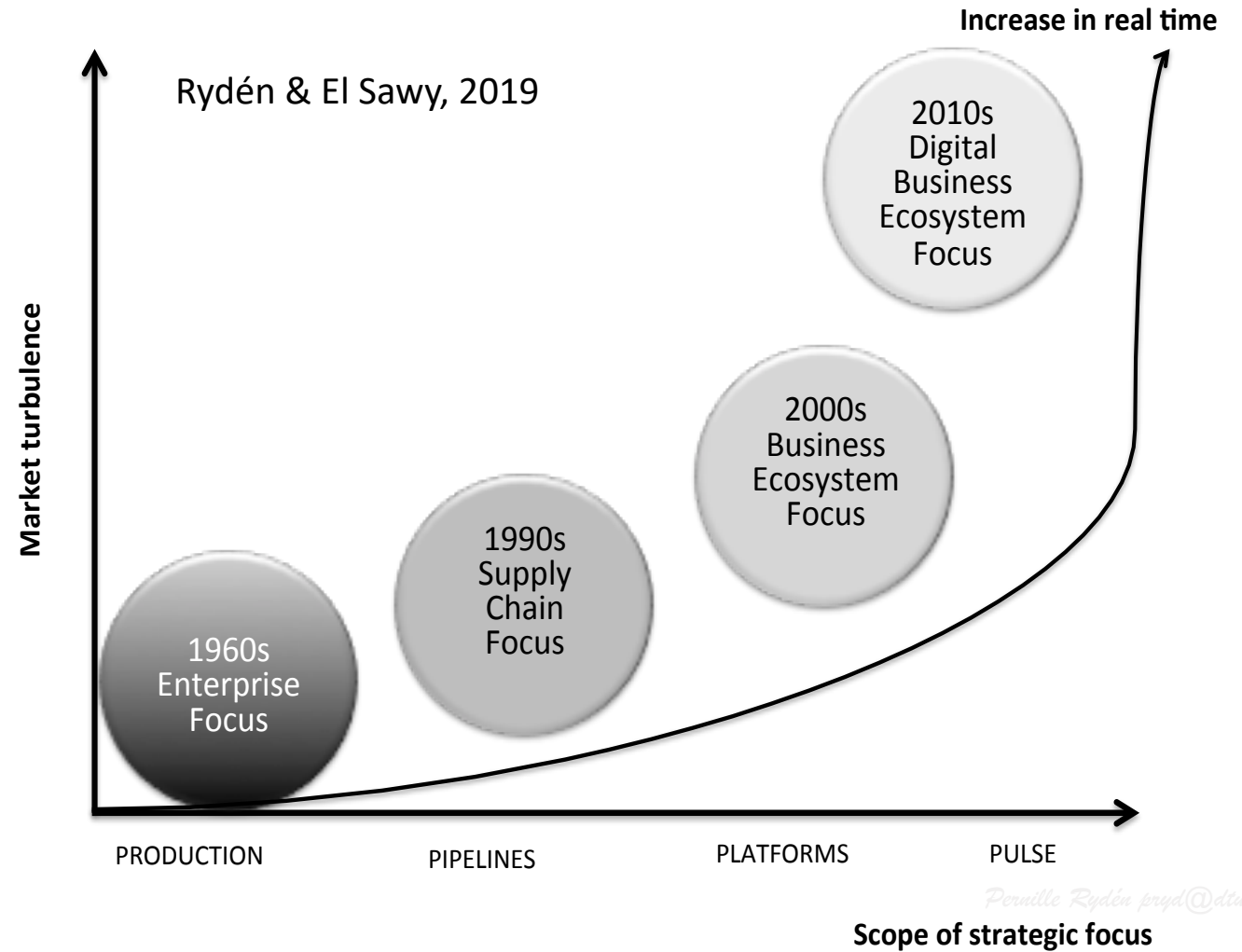Disruption: Extreme customization – experience

Distortion: Extreme dysfunctionality

3. How to manage and embrace real time

Real time - a driver of the 4th revolution

- Increased digital platform ecosystem connectivity leading to increased real-time interactions & transactions
- **Core of disruptive technologies (AI) leading to new business practices**
- enables managers to listen to the market rhythm and gain momentum of the moment

Increase in real time

Rydén & El Sawy, 2019

Market turbulence

2010s Digital Business Ecosystem Focus

2000s Business Ecosystem Focus

1990s Supply Chain Focus

1960s Enterprise Focus

PRODUCTION   PIPELINES   PLATFORMS   PULSE

Pernille Rydén pryd@dtu.dk
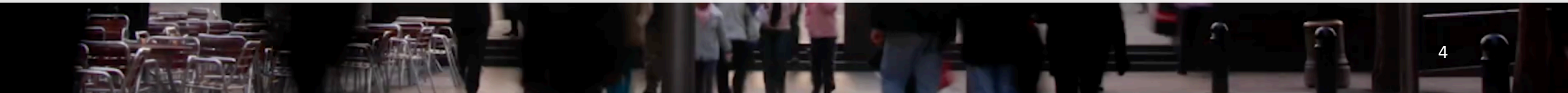
Scope of strategic focus

"Today's marketplace is no longer responsive to the strategies that worked in the past. There are just too many products, too many companies, and too much marketing noise."

Video introduction

https://www.youtube.com/watch?v=8_KFBS__Jqk

Background of Survey Respondents
(Position and Function)

Position/Role	Number	Percentage
Owner / CEO	178	17.7
Senior executive	325	32.4
Executive	207	20.6
Senior Manager	147	14.6
Manager or supervisor	147	14.6
Total	1,004	100

	Frequency	Percent
Marketing/Sales	334	33.3
Information Technology (IT) / Information Services	333	33.2
Research and/or Product Development (R&D)	337	33.6
Total	1,004	100

Source: CTM Enterprise Survey, December 2015

Background of Survey Respondents
(Industry and Company Size)

Industry	Frequency	Percent
Finance, Banking, and Insurance	254	25.3
Health Care and Social Assistance	249	24.8
Manufacturing	251	25.0
Retail Trade	170	16.9
Wholesale Trade	80	8.0
Total	1,004	100

	Frequency	Percent
500 - 999 employees	303	30.2
1000 - 4999 employees	369	36.8
5,000 -7,499 employees	128	12.7
7,500 - 9,999 employee	86	8.6
10,000 employees or more	118	11.8
Total	1,004	100

Source: CTM Enterprise Survey, December 2015

Analysis

- Focus on how managers in the US and Europe cognitively relate to real-time in a business context

- In-depth interviews with managers about both real-time and real-time management

- Photo Elicitation Technique

- Coding of transcripts

- Defining relevant questions for the quantitative survey to explore, and understanding nuances
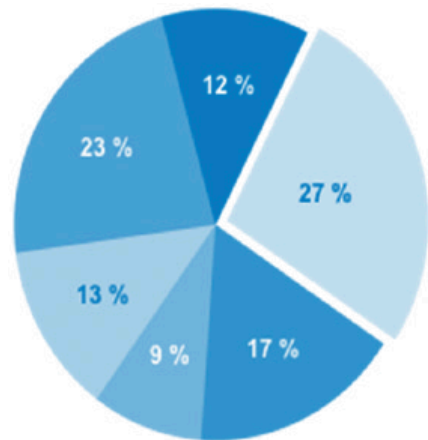
Real-Time Management Depends on the Managers' Interpretation of Clock Time

2. AI and real time:
three scenarios

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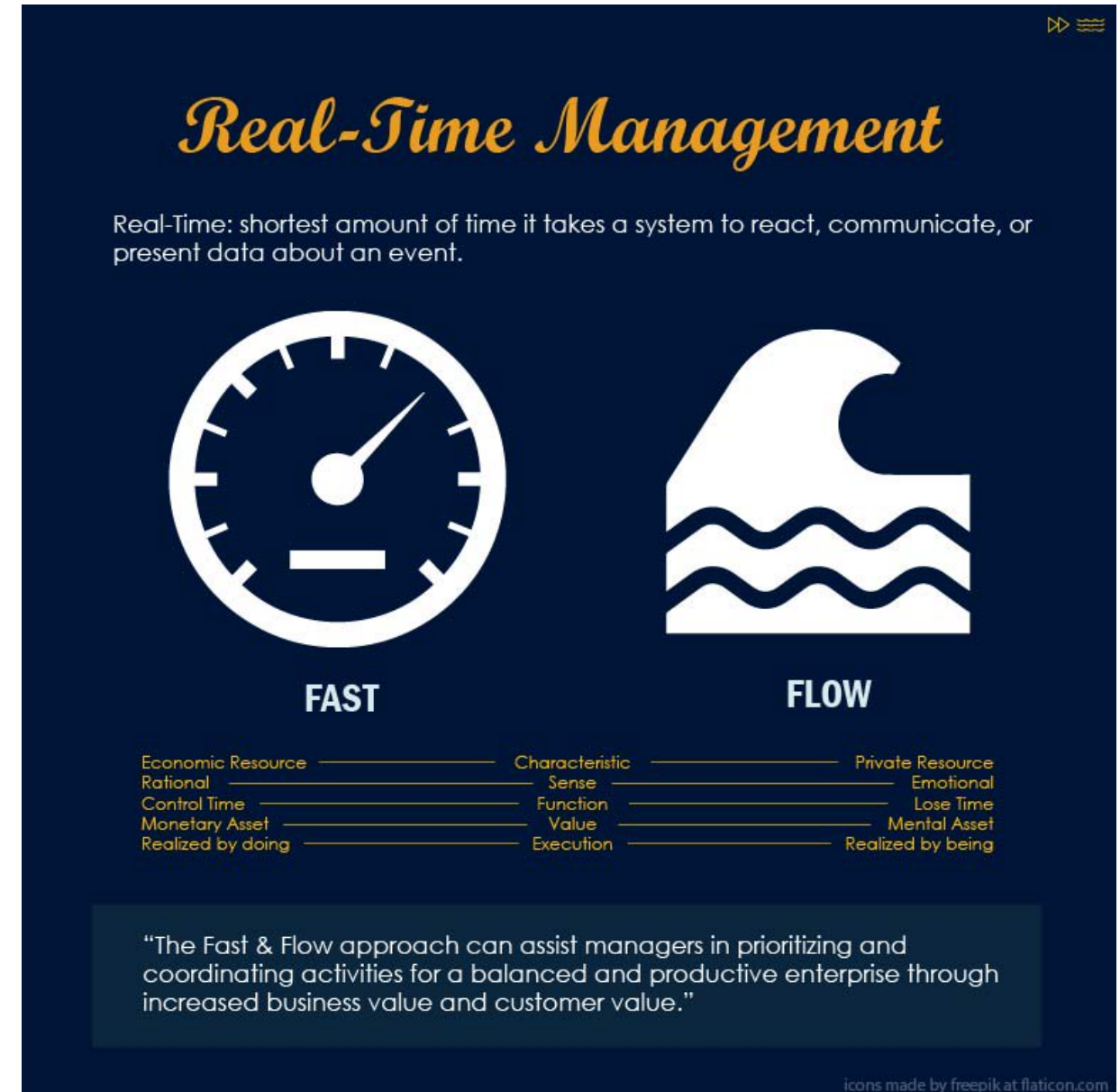- 15th Edition -

Scenario 1:
Business as usual – just faster and more complex ..

AI – increasing speed of intelligence should not stand alone

Fast & Flow management generates value in the enterprise

Real-time perception and maturity has an impact on enterprise profitability

Transitioning to real-time management is not a tech arms race

Real-Time Management

Real-Time: shortest amount of time it takes a system to react, communicate, or present data about an event.

FAST		FLOW
Economic Resource	Characteristic	Private Resource
Rational	Sense	Emotional
Control Time	Function	Lose Time
Monetary Asset	Value	Mental Asset
Realized by doing	Execution	Realized by being

"The Fast & Flow approach can assist managers in prioritizing and coordinating activities for a balanced and productive enterprise through increased business value and customer value."

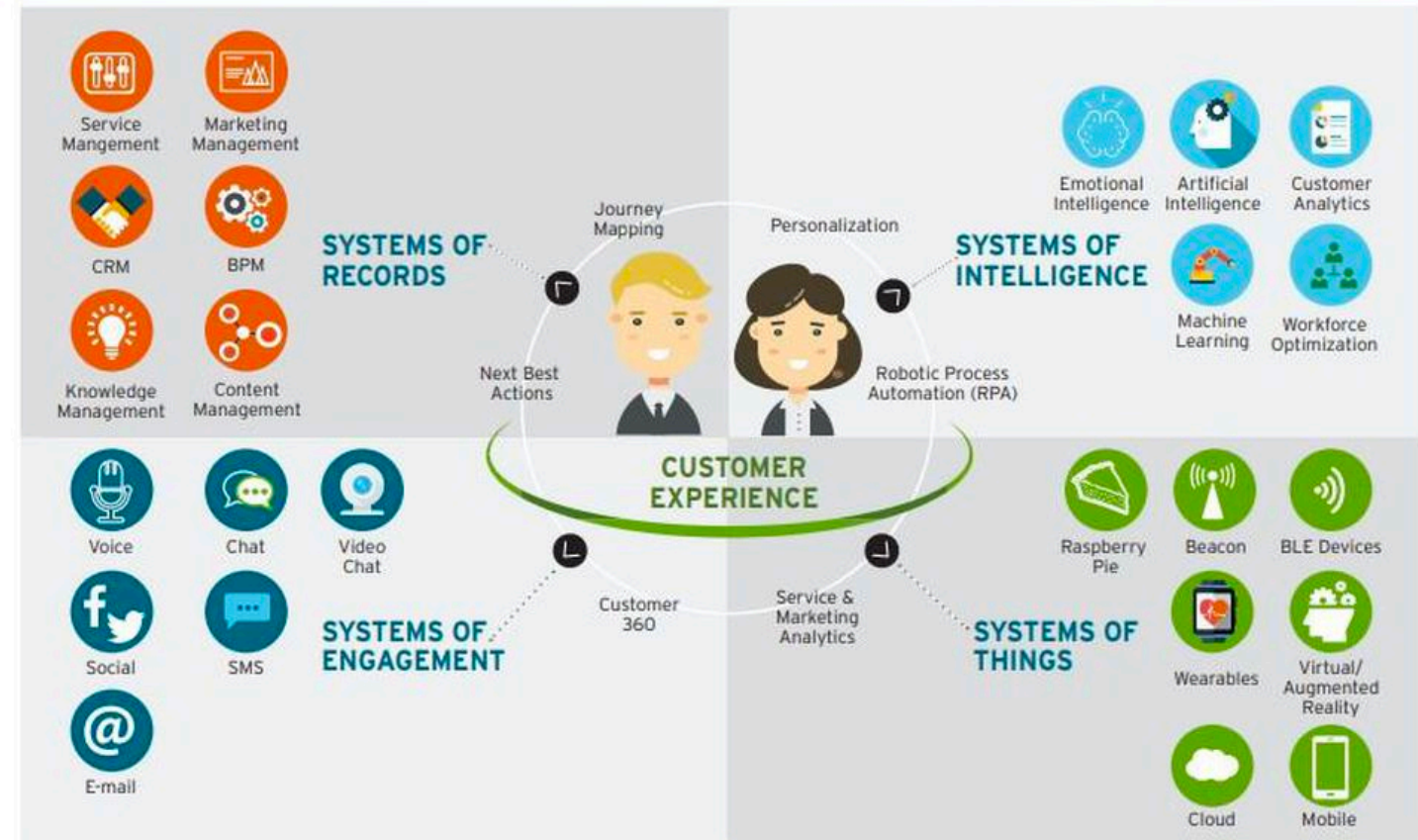icons made by freepik at flaticon.com

The perception of Real-Time in companies where profit is increasing versus companies where profit is decreasing

- *Ambition level on Real-Time Scale is Associated with Increasing Profits !*
- *.. It is flipped and 2X ... No statistical analysis needed here...*

	Companies where profits are increasing	Companies where profits are decreasing
Associated with time under an hour	30%	17%
Associated with time under a day	17%	28%

Synchronizing Systems Around the Customer

- https://www.youtube.com/watch?v=flSLI2JmWVE

https://towardsdatascience.com/ai-ml-revolution-to-scale-customer-experience-ec756fec4a56
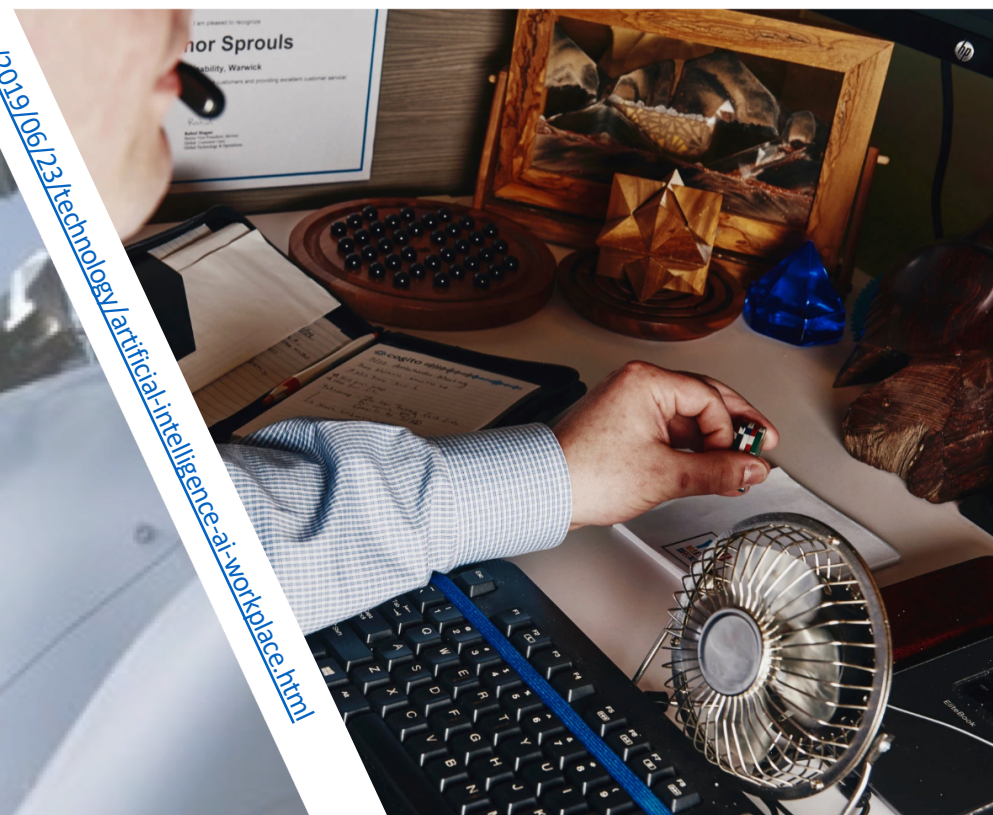
Scenario 3
Distortion: Extreme dysfunctionality

- 200 Hz <> 2 GHz: man against machine

- Intelligence explosion: AI goes **too fast** for the human race – from flow to technology **overflow** and loss of control

A Machine May Not Take Your Job, but One Could Become Your Boss

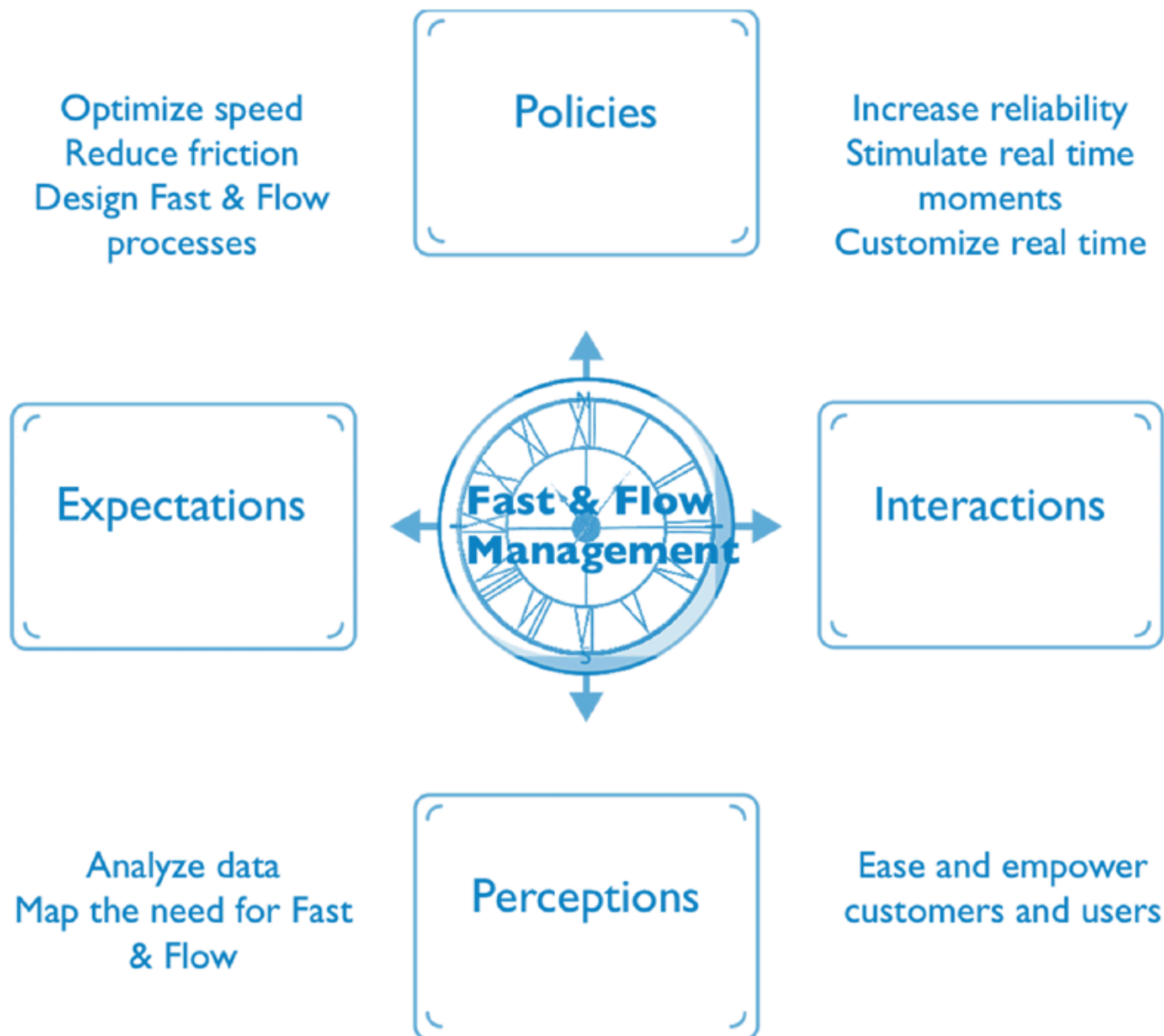e goal of automation has always been efficiency. What if ficial intelligence sees humanity itself as the thing to be ized?

https://www.nytimes.com/2019/06/23/technology/artificial-intelligence-ai-workplace.html

using artificial intelligence gives workers

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3. How to Manage & Embrace Real-Time

Is "now" now? Or soon? Or what?

Optimize speed
Reduce friction
Design Fast & Flow
processes

Policies

Increase reliability
Stimulate real time
moments
Customize real time

Expectations

**Fast & Flow
Management**

Interactions

Analyze data
Map the need for Fast
& Flow

Perceptions

Ease and empower
customers and users

The Ambi-temporal organization

Production focus | Customer focus

Internal real-time management

External real-time management
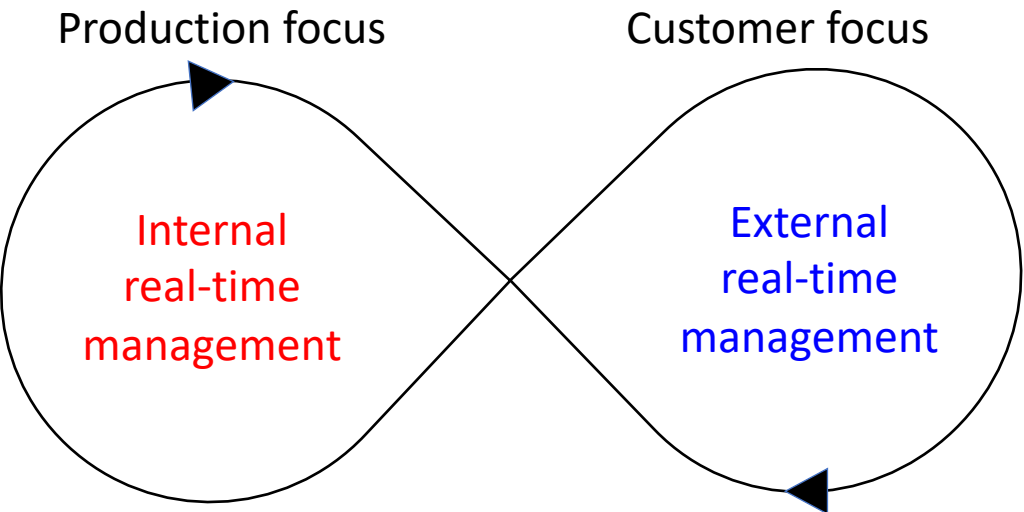
Process operation
Optimize speed
Reduce friction & costs
Analyze data to gain insight on the customer's real-time preferences
Map your customer reach (how far can you influence the customer experience)
Design the customer's real-time experience: fast, flow, or both?

Customer interaction
Customize the need for fast & flow
Increase product & service reliability
Stimulate moments of real-time experience through interaction (f2f, mobile, cloud, social media, etc.)
Ease the customers (rationally, emotionally, physically, and/or virtually)
Empower the customer by providing quality moments

At what stage do you think your company is at with Real-Time Management?

	Companies where profit is increasing	Companies where profit is decreasing
Early stage	28%	52%
Advanced stage	58%	31%

Stage of Real-Time Management is associated with Increasing Profits !
.. It is flipped and 2X … No statistical analysis needed here…

- Not thought about it, not high priority for now   11%
- Started experimenting   17%
- **Key part of our business strategy   34%**
- **Advanced, strategic, and enterprise-wide   24%**
- We are an exemplar!   14%

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