



Improving Compliance Using Digital Transformation

Raimund Laqua, PMP. P.Eng

Chief Compliance Engineer

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DEFINITIONS

What is technology?

Dictionary.com

1. the branch of knowledge that deals with the creation and use of technical means and their interrelation with life, society, and the environment, drawing upon such subjects as industrial arts, engineering, applied science, and pure science.
2. The application of this knowledge for practical ends.
3. The terminology of an art, science, etc.; technical nomenclature.

Merriam-Webster

1. a: the practical application of knowledge especially in a particular area

   b: a capability given by the practical application of knowledge.
2. a manner of accomplishing a task especially using technical processes, methods, or knowledge.
3. The specialized aspects of a particular field of endeavor.

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Improving Compliance Using Digital Transformation

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We are <u>really</u> bad at <u>adopting</u> new technology

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We are even worse at exploiting new technology



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It is impossible to design a system so perfect that no one needs to be good

– T.S. Eliot



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OUTLINE

What we are going to cover

1. Digital Transformation
2. Compliance Landscape
3. Improvement Opportunities
4. Effective Strategies



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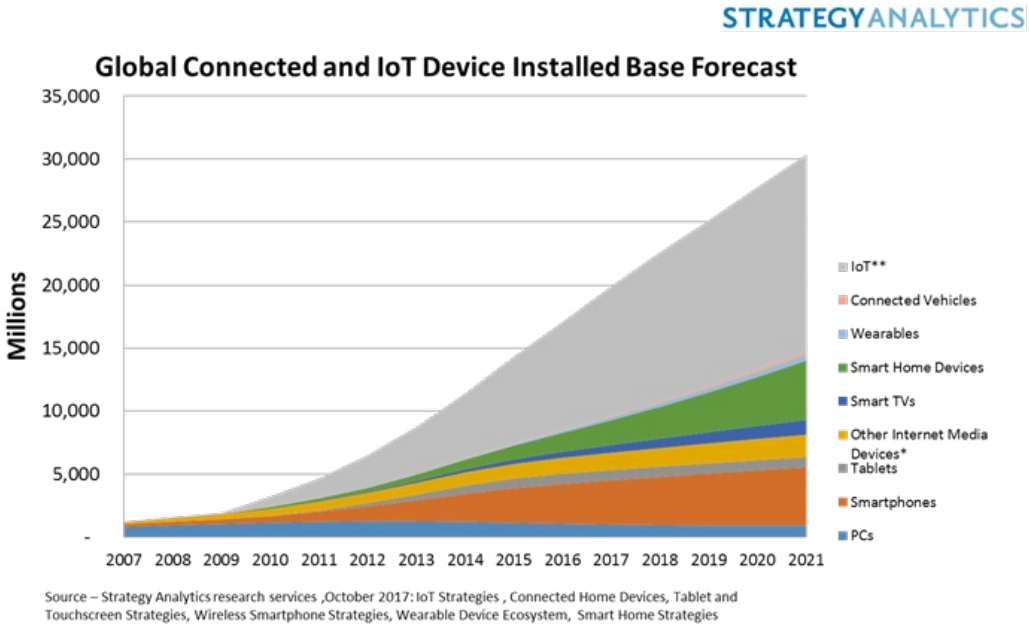
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DIGITAL TRANSFORMATION

We are in the midst of a transition towards a digital economy and society.

- 40% of the world population now connect to networks
- The number of cell phones in the world > 7 Billion
- 33 Billion connected devices by 2020





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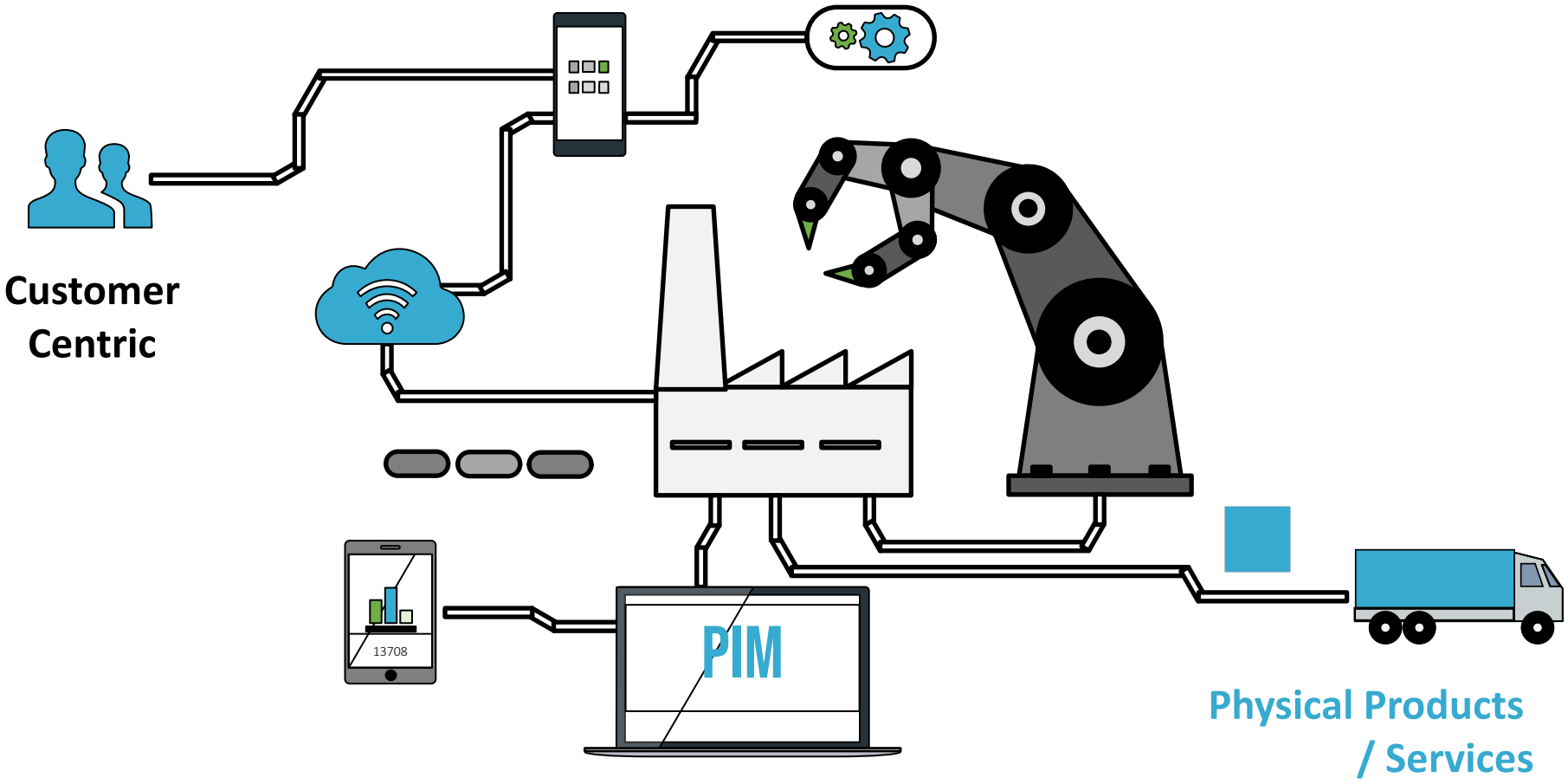
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DIGITAL TRANSFORMATION

Connected factory – Industry 4.0





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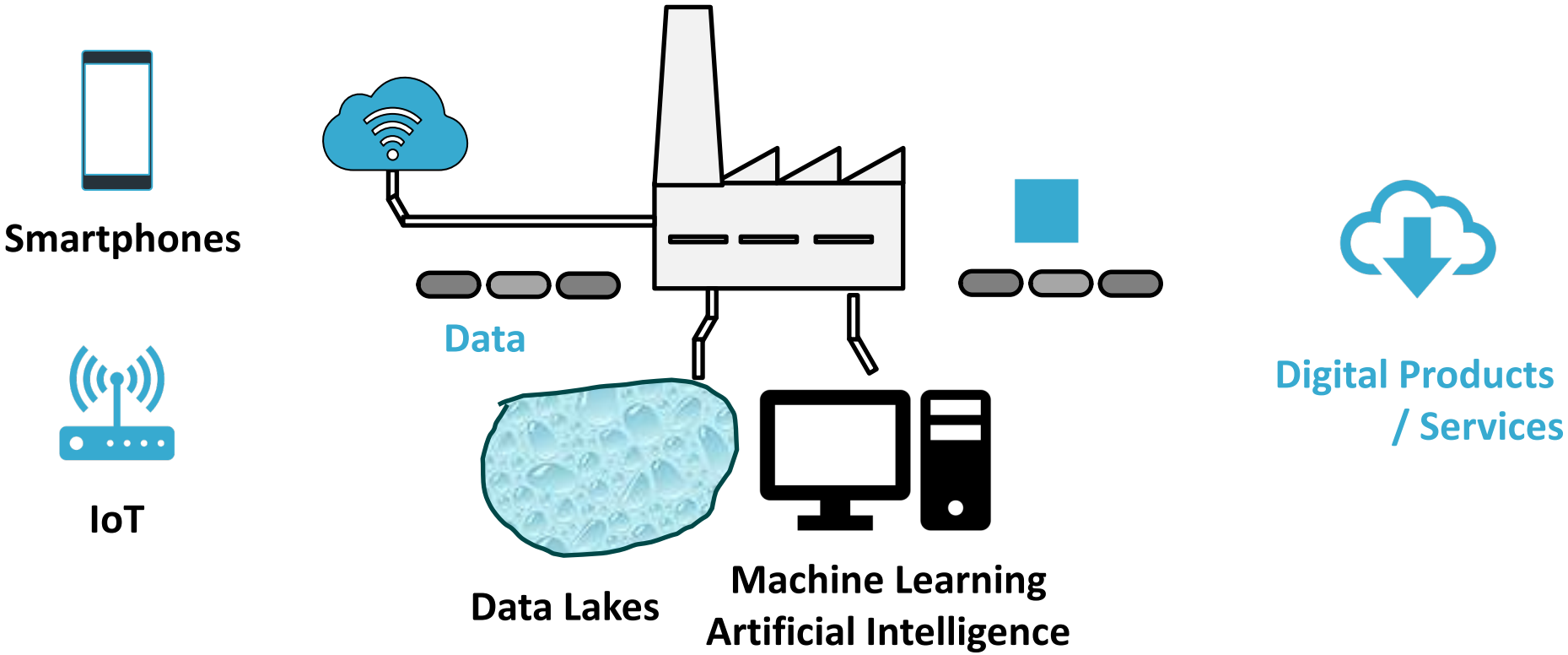
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DIGITAL TRANSFORMATION

Information factory





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DIGITAL TRANSFORMATION

Key shifts

- Wireless replacing wires
- Images replacing reports
- Automation replacing manual processes
- Machines replacing human labor
- Marginal costs replacing fixed costs
- Global reach replacing local reach
- Digital replacing physical
- Digital augmenting reality

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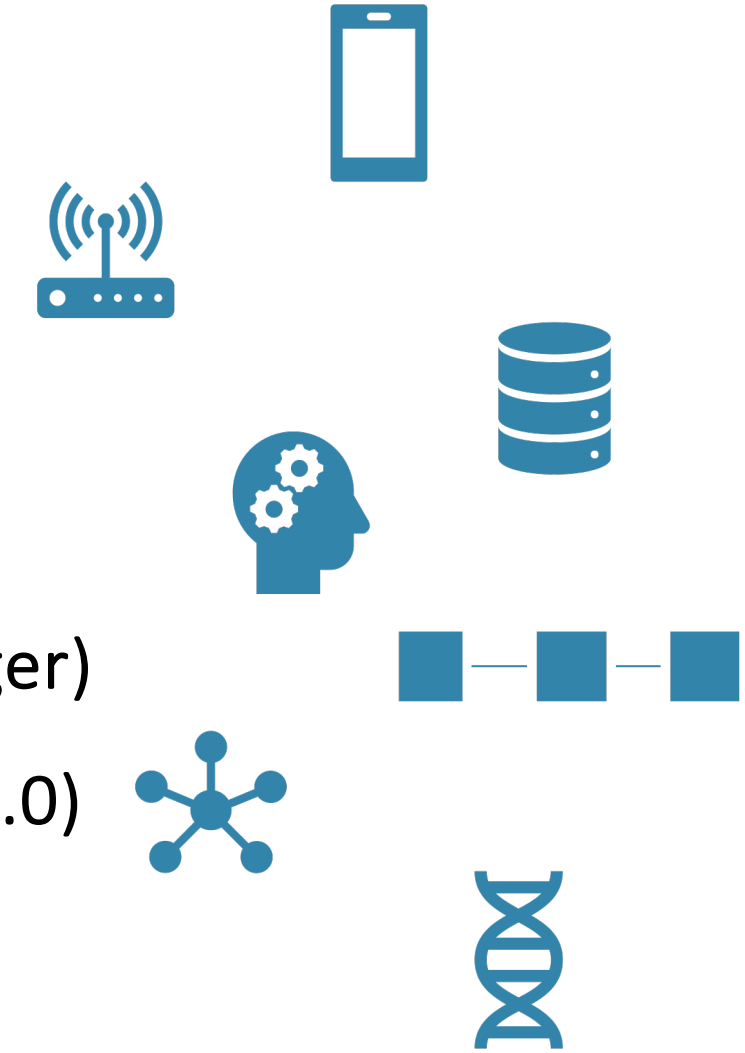
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Key enablers

- The Smartphone
- The Internet of Things (IoT)
- Big Data Analytics
- Artificial Intelligence
- Blockchain (or distributed ledger)
- Connected Devices (Industry 4.0)
- Augmented Reality



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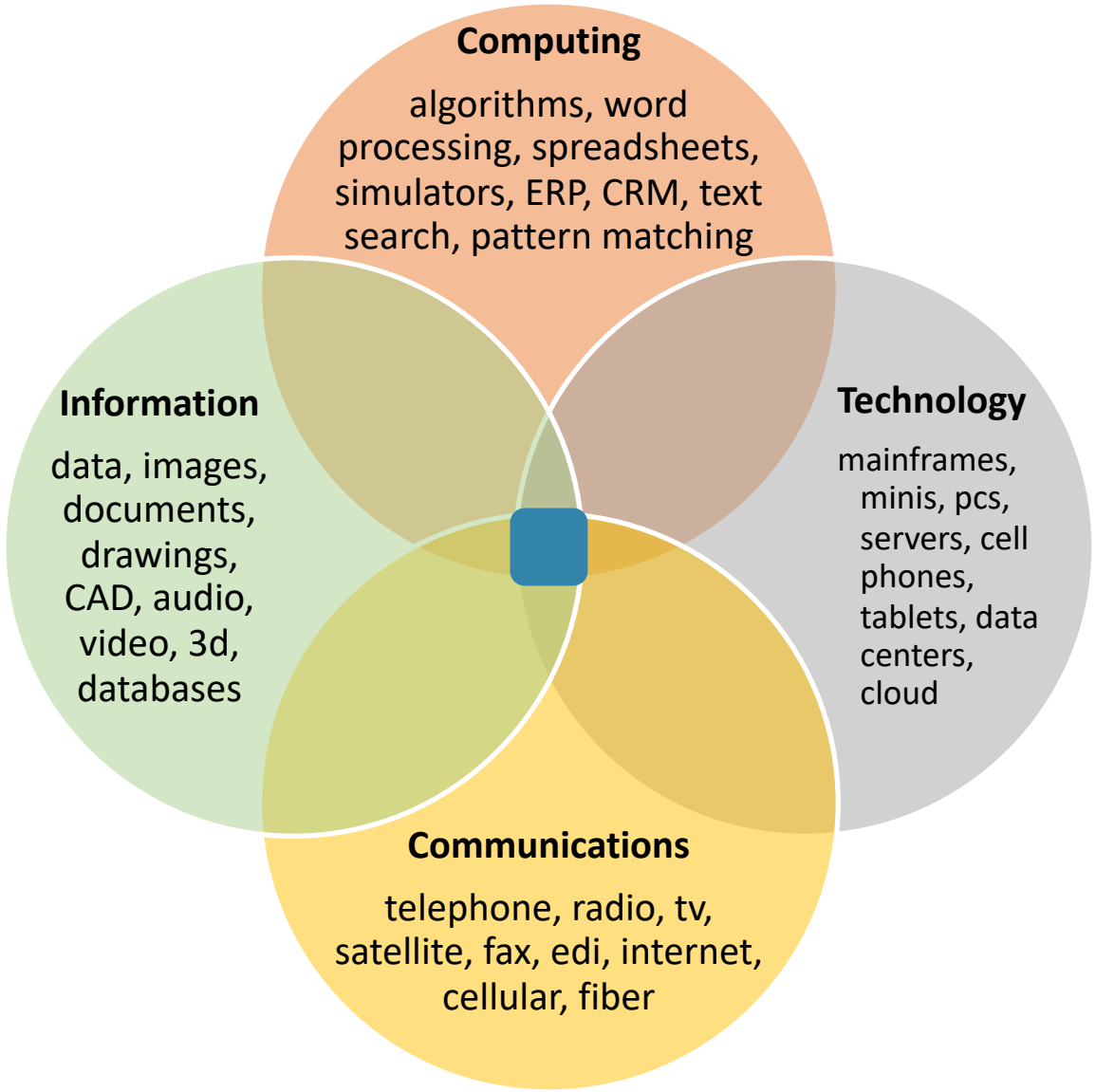
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Something **OLD**



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Something **OLD**

IoT

Augmented Reality

Something **NEW**

Robotics

Machine Learning

Computing

algorithms, word processing, spreadsheets, simulators, ERP, CRM, text search, pattern matching

Information

data, images, documents, drawings, CAD, audio, video, 3d, databases

Technology

mainframes, minis, pcs, servers, cell phones, tablets, data centers, cloud

Automation

Artificial Intelligence

Communications

telephone, radio, tv, satellite, fax, edi, internet, cellular, fiber

Connected Devices

Blockchain



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Digital transformation is the profound transformation of business and organizational activities, processes, competencies and models to fully leverage the changes and opportunities of a mix of digital technologies and their accelerating impact across society in a strategic and prioritized way, with present and future shifts in mind.

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“A digital frontier to reshape the human condition” - TRON

The grid …
A digital frontier …

I tried to picture clusters of information,
As they move through the computer…
What did they look like?
Ships? Motorcycles?
Where the circuits like freeways?
I kept dreaming of the world,
I thought I would never see

And then one day
I got in ..



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DIGITAL TRANSFORMATION

Digital twin – the power of 2





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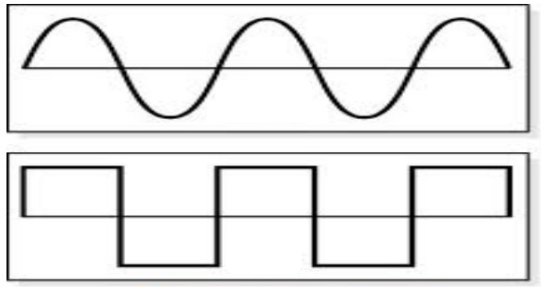
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Digital twins are not new

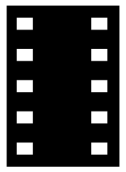
















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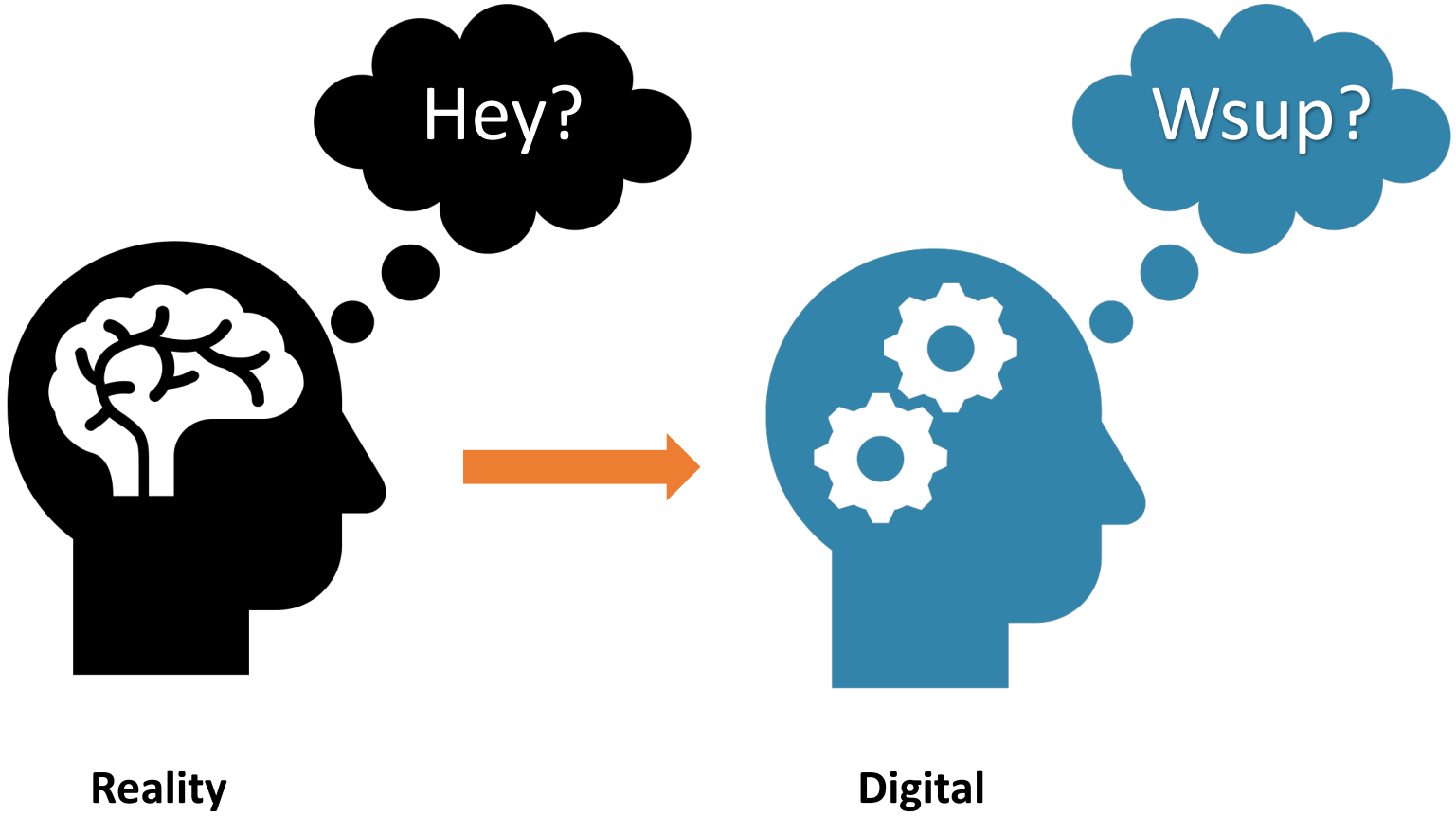
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Digital twins are now more capable





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DIGITAL TRANSFORMATION

Purpose of the digital twin

Purpose	Goal	Capabilities	Technologies
Models Reality	Prediction	Computation	IoT, data collection, algorithms, databases, spreadsheets, pattern recognition, AI
Replaces Reality	Efficiency	Digitization	Conversions, management systems, automation, virtual reality, robotics
Augments Reality	Effectiveness	Digitalization	Monitoring, nudging, augmented reality, GPS, decision support, scorecards
Changes Reality	New Value	Transformation	All the above

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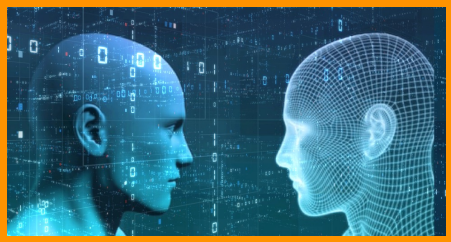


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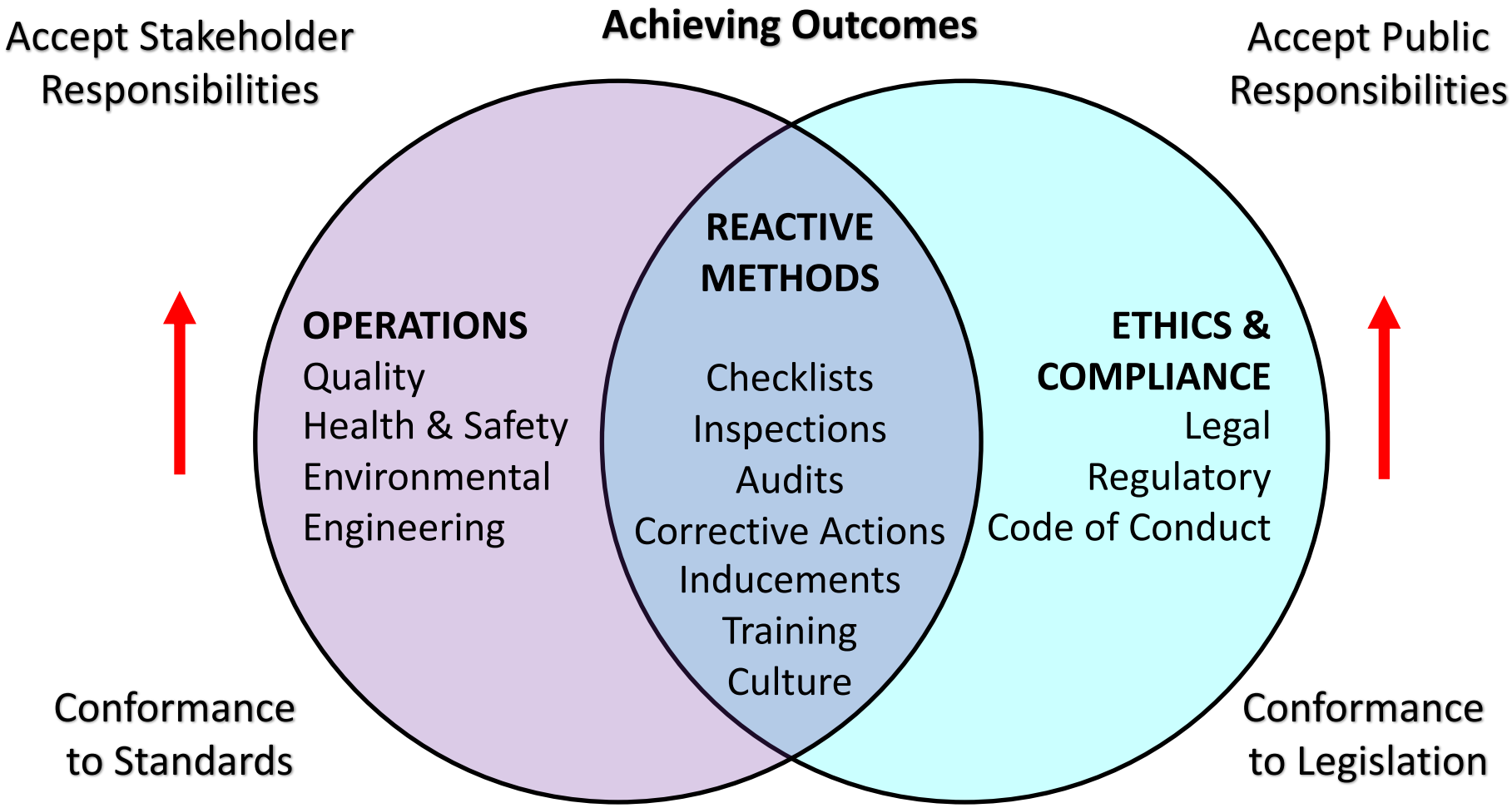
- Compliance is either a state of being in accordance with established guidelines or specifications, or the process of becoming so.
- The definition of *compliance* can also encompass efforts to ensure that organizations are abiding by both industry regulations and government legislation.
- Meeting stakeholder obligations to achieve specific outcomes.

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COMPLIANCE LANDSCAPE

Shows up in all areas of the organization



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COMPLIANCE LANDSCAPE

Manifests itself as committees, programs, systems, and processes



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COMPLIANCE LANDSCAPE

Key drivers

- Lack of effectiveness
  - 70% of companies do not measure the effectiveness of their compliance programs
  - Incomplete and invalid metrics
  - Mistaking legal accountability for compliance effectiveness
  - Self-reporting and self-selection bias
- Lack of efficiency
  - Compliance alone is estimated to be between 8%-10% of a FTE (time and salary)
  - Compliance can be 2 to 3 times that in highly-regulated, high-risk sectors (ex. oil&gas, energy, etc.)

70%





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COMPLIANCE LANDSCAPE

Regulations and standards have changed

Prescriptive-based Compliance

Reactive Thinking



Proactive Thinking

Performance-based Compliance

Standards Based	Audit Based	Continuous Improvement Based	Risk Based
What should I do?	What must I do?	How can I improve?	How can I ensure objectives?

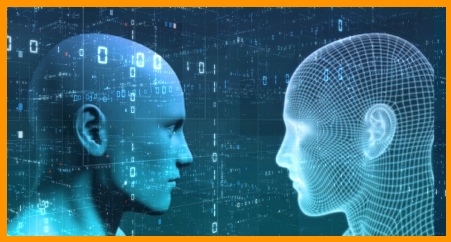
Findings / Lagging Actions

Feed-back

Ownership / Leading Actions

Feed-forward

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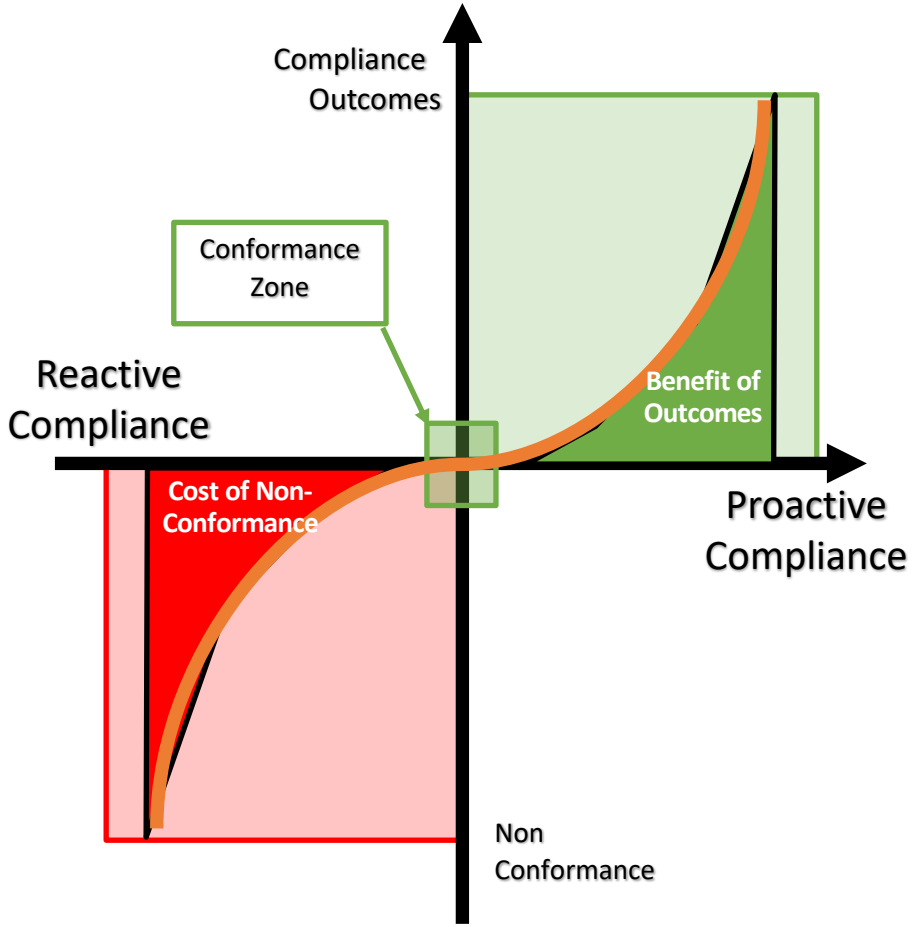
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COMPLIANCE LANDSCAPE

The audit-fix cycle is a reactive process that reinforces reactive behaviors

REACTIVE

- No Objectives & Goals
- Lagging indicators
- Uncertain and Surprised
- Focused on Symptoms
- Forced Timeline
- Always Behind
- Focused on Output
- Sunk Cost



PROACTIVE

- Clear Objectives & Goals
- Leading indicators
- Certain and Anticipating
- Focused on Root Cause
- Plan Timeline
- Always Ahead
- Advancing Outcomes
- Return on Investment

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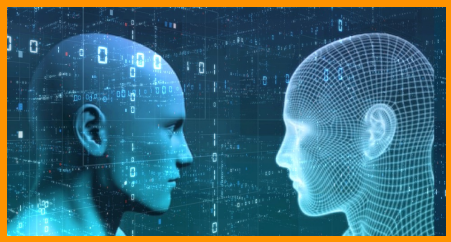
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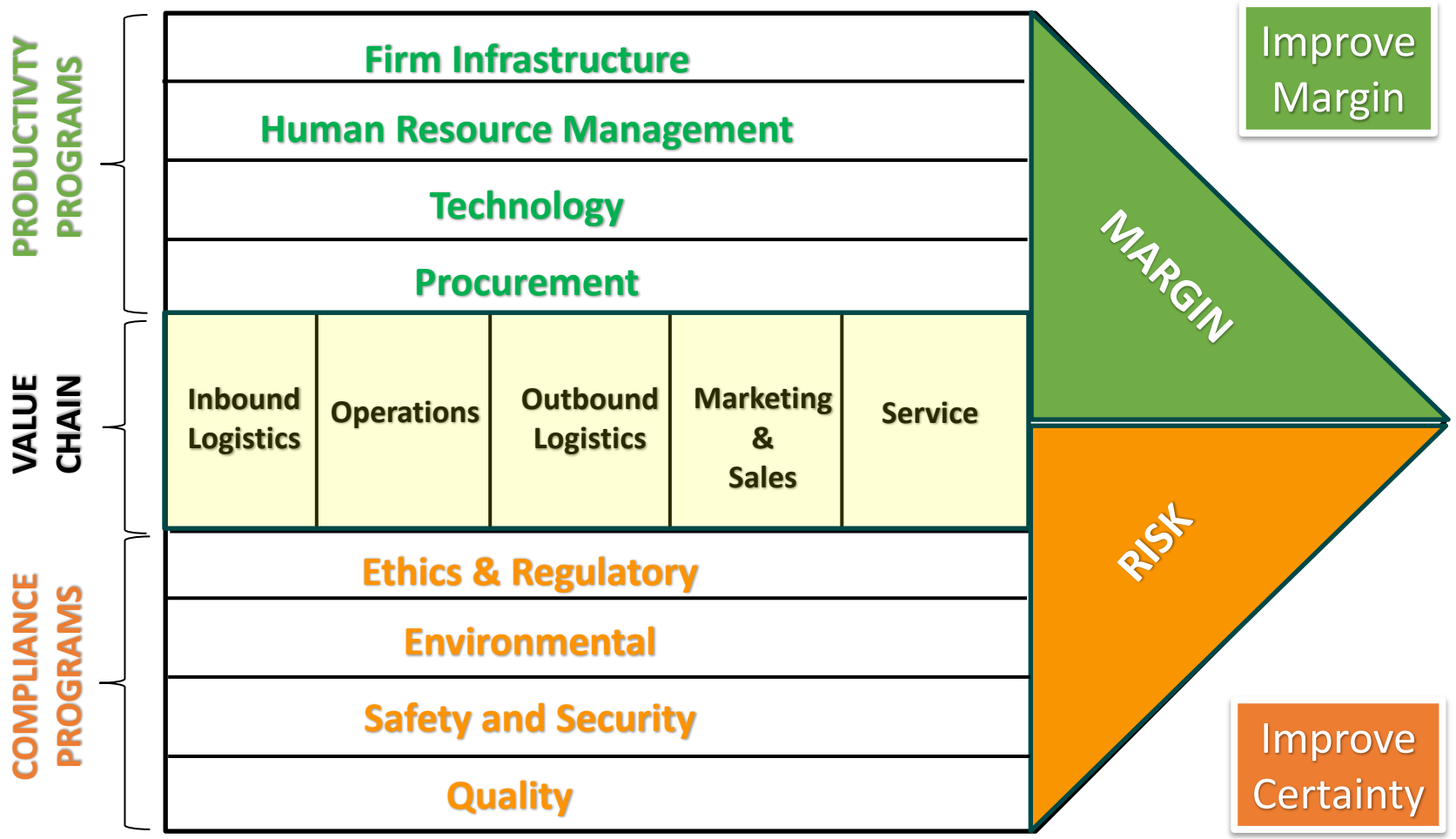
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IMPROVEMENT OPPORTUNITIES

Combined value and compliance chain





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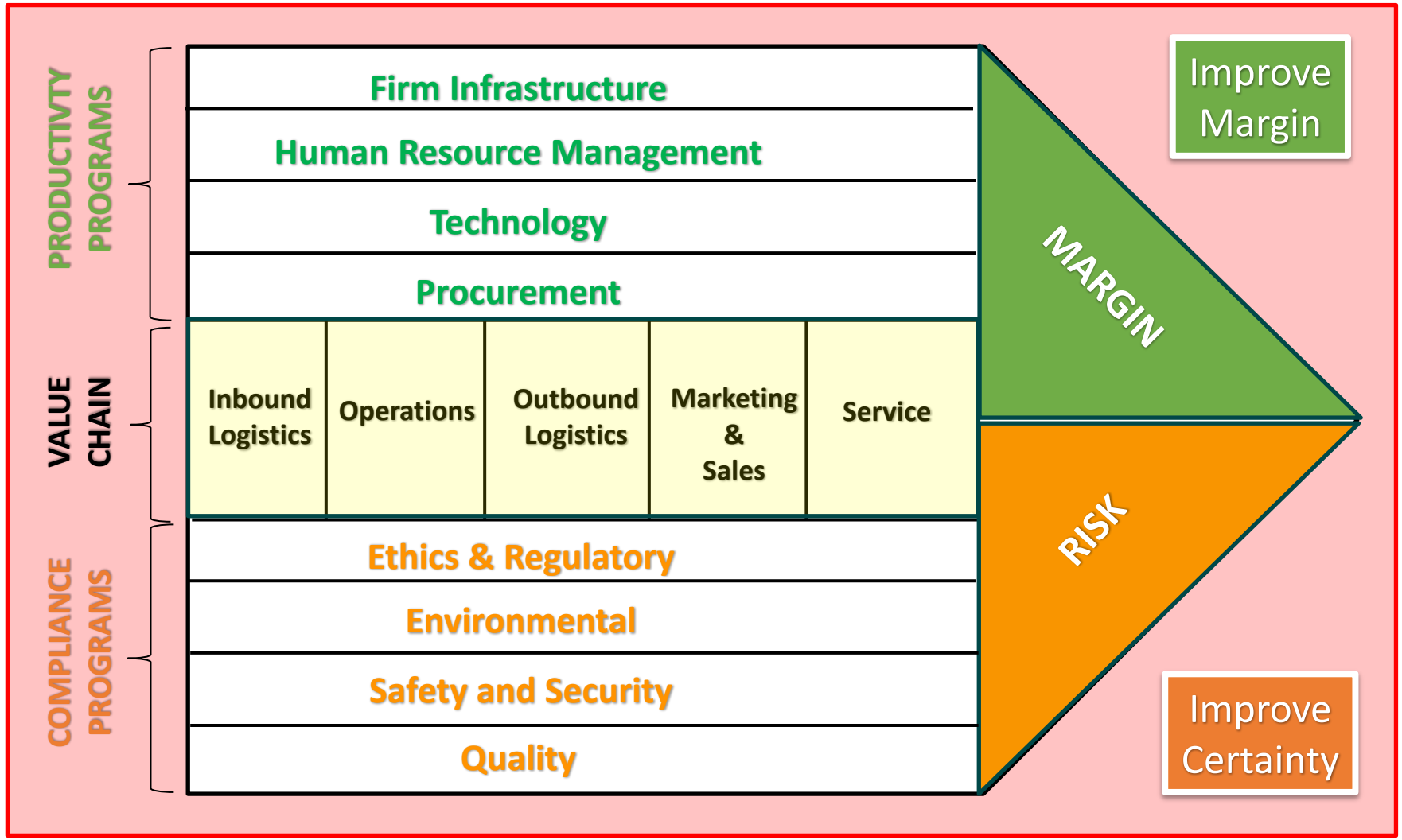
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IMPROVEMENT OPPORTUNITIES

1. Computation (improve models)



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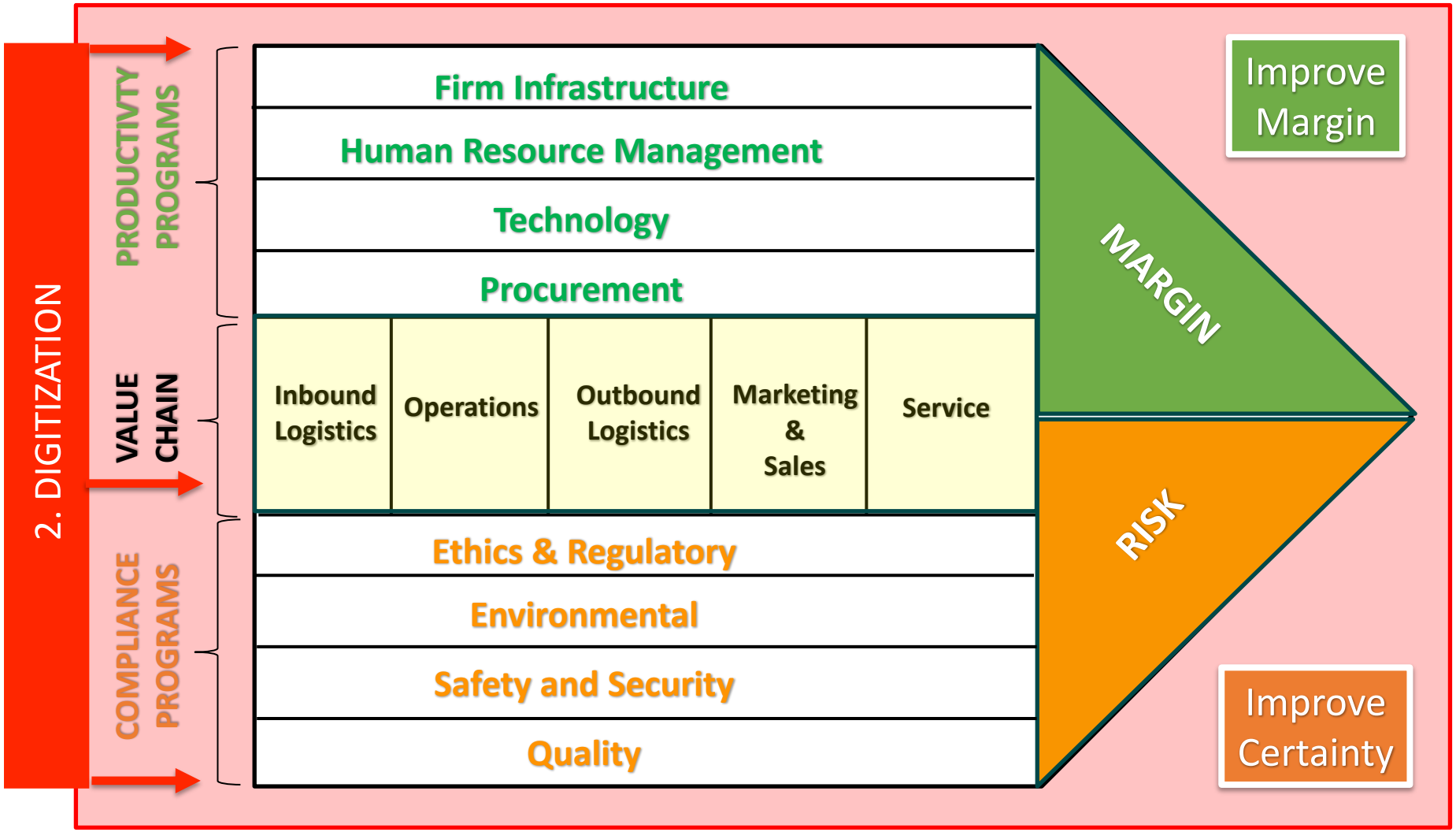
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IMPROVEMENT OPPORTUNITIES

2. Digitization (improve efficiencies)



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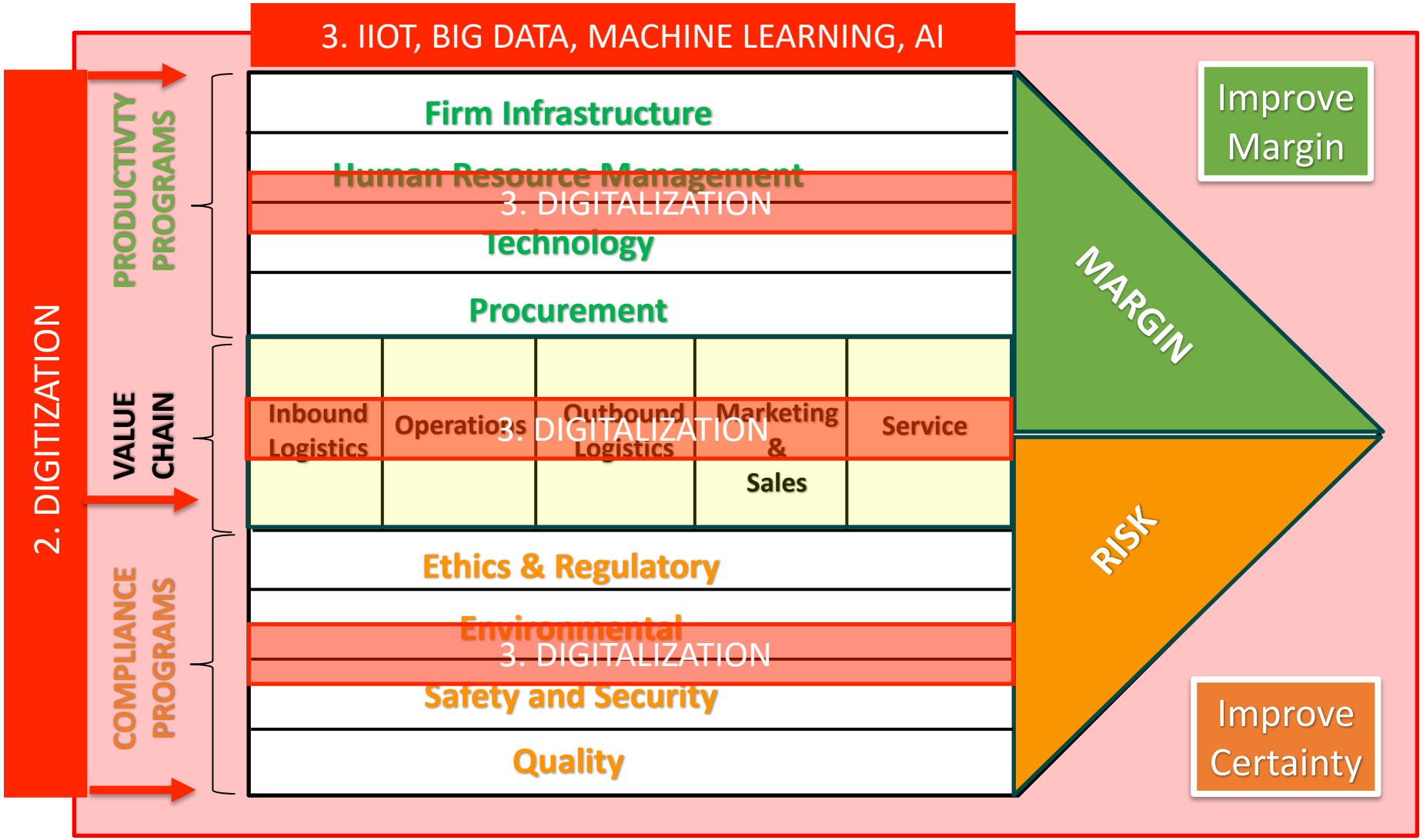
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IMPROVEMENT OPPORTUNITIES

3. Digitalization (improve effectiveness)



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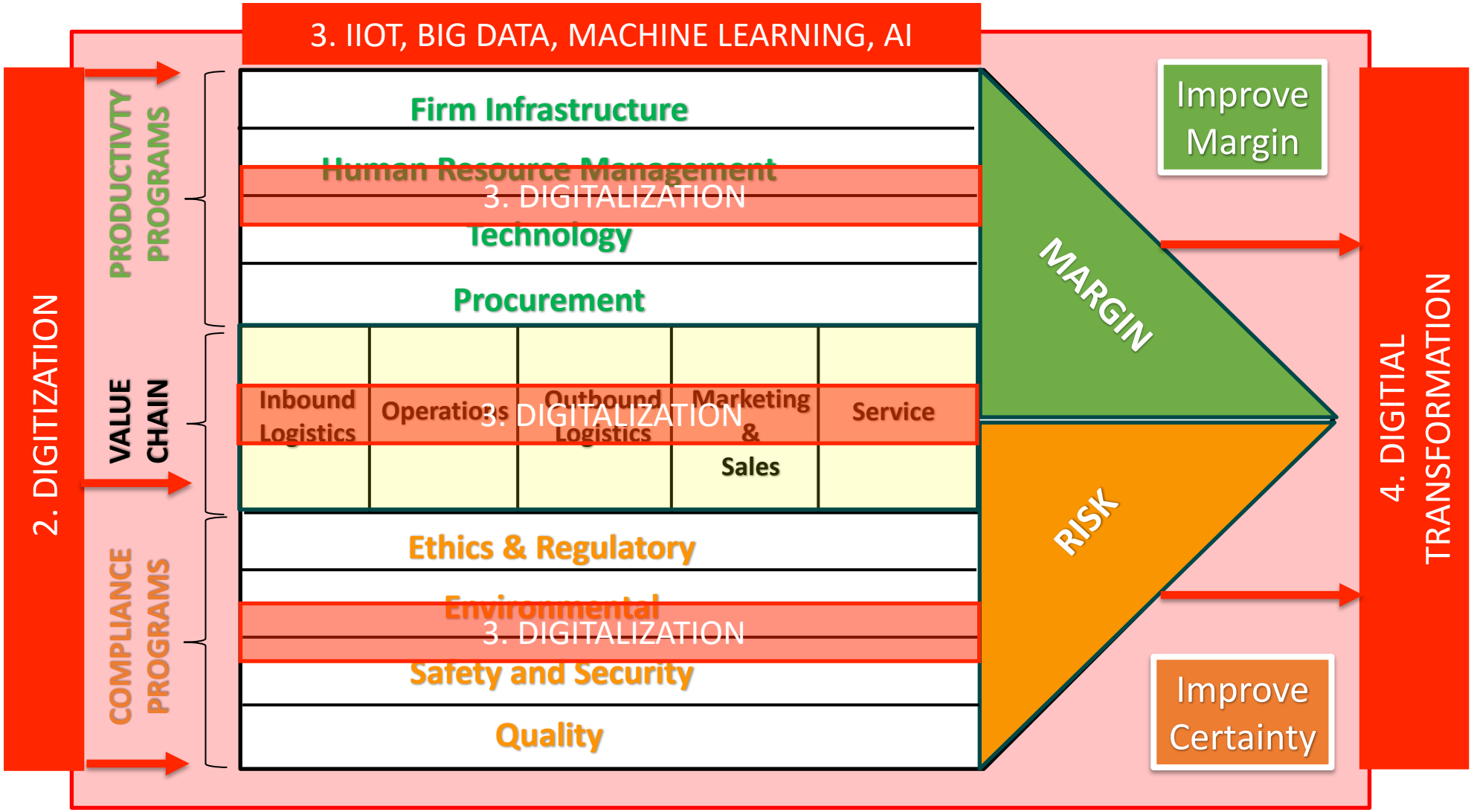
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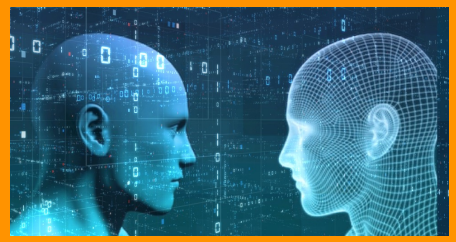
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IMPROVEMENT OPPORTUNITIES

4. Transformation (new value)



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1. Your Destination

3. The terrain

2. Where you are



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6. Your Constraints

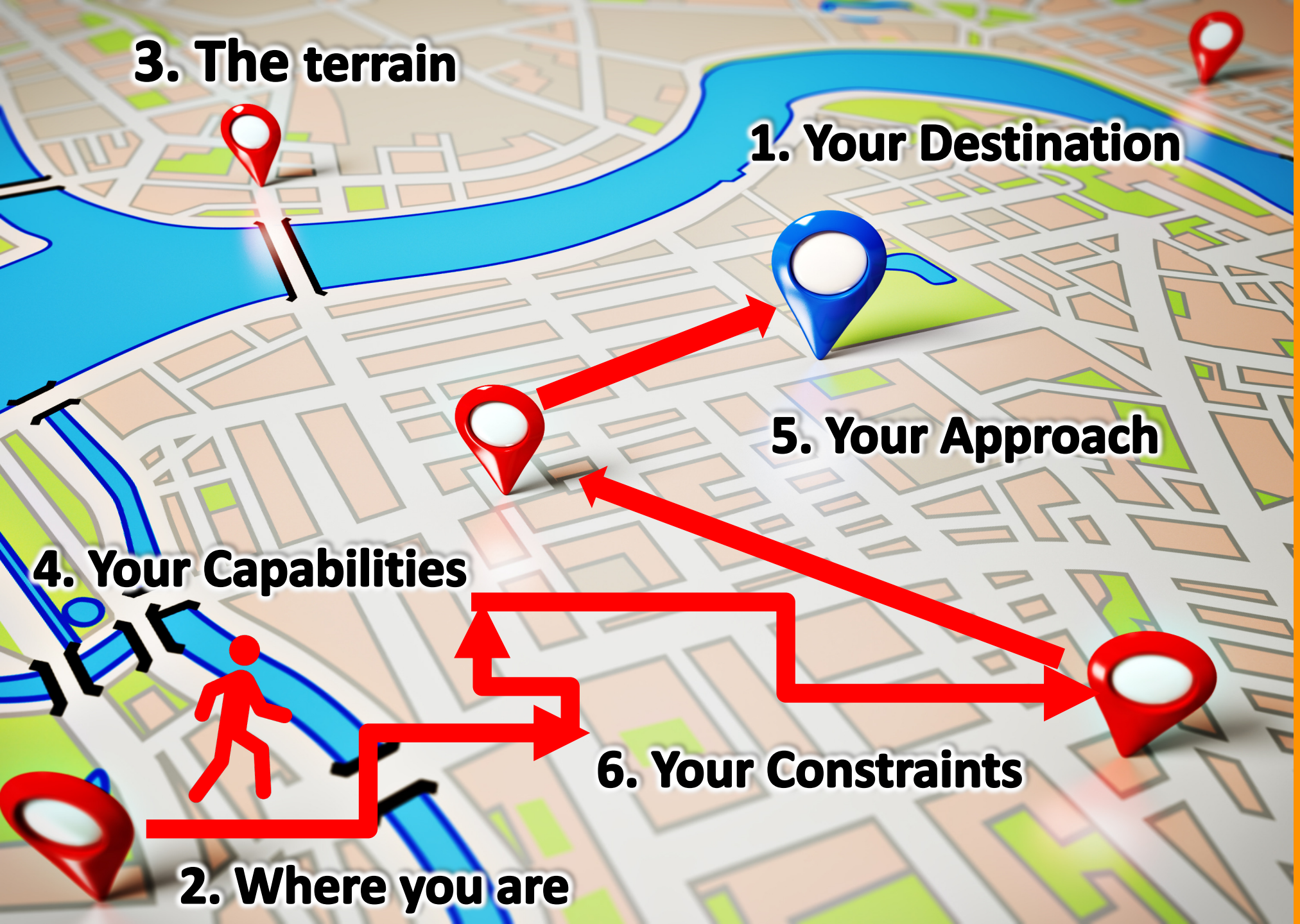


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Technology can bring benefit if, and only if, it diminishes a limitation.

Long before the availability of technology, we developed modes of behavior (policies, measurements and rules) to help us accommodate our limitations.

But what benefits will any technology bring if we neglect to change the rules?

- Dr. Eli Goldratt (developer of the Theory of Constraints)



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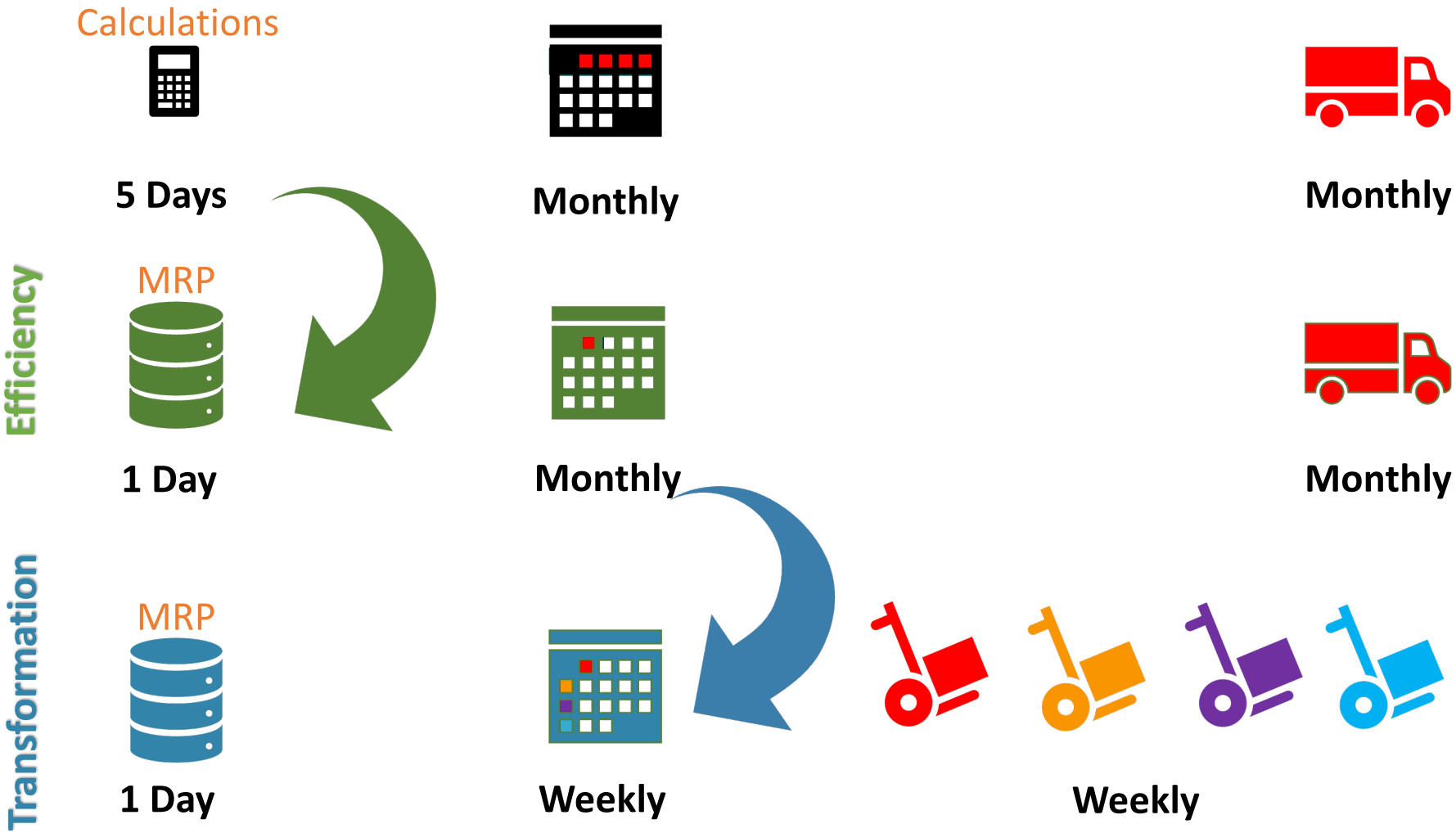
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EFFECTIVE STRATEGIES

Example: production schedule



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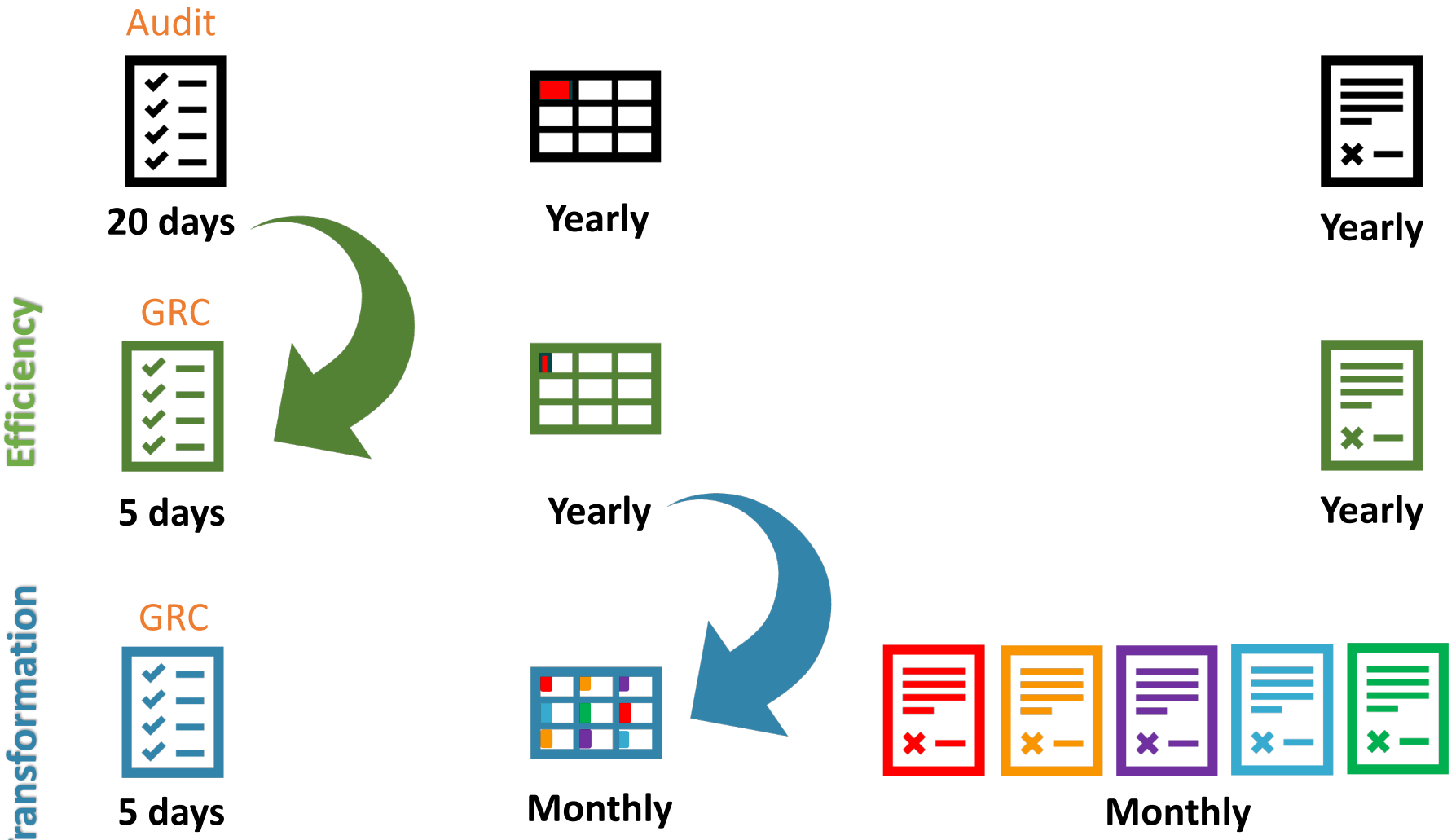
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EFFECTIVE STRATEGIES

Example: audits



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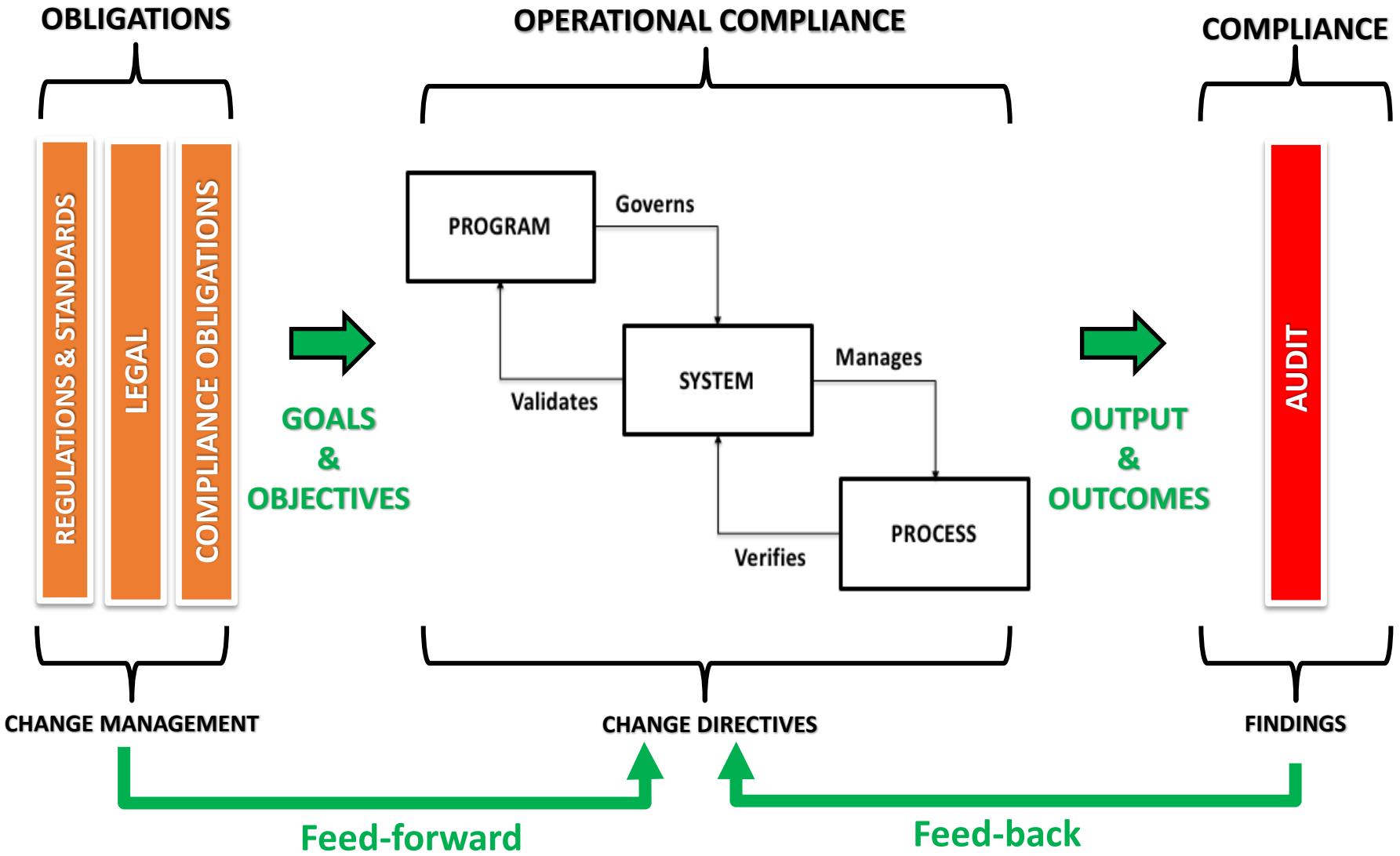
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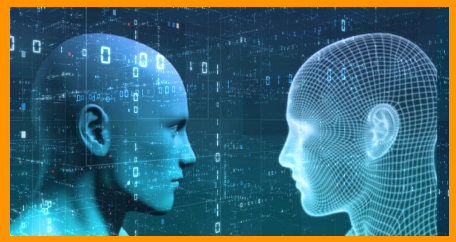
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EFFECTIVE STRATEGIES

Embed compliance to achieve continuous compliance





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DIGITAL TECHNOLOGIES

1. MANAGE OBLIGATIONS
- Mandatory and Voluntary
- Critical to Compliance
- Risk – threats and opportunities
- Outcomes, Goals, Objectives
- Programs

3. EMBED COMPLIANCE
- Critical to Compliance Actions
- Evidentiary Actions and Documentation
- Best Practices

5. IMPROVE CONTINUOSLY
- Monitor MoE, MoC, MoP
- Establish continuous improvement process
- Move from yearly to monthly improvement cycle

MANAGE OBLIGATIONS → INCREASE CAPABILITIES → EMBED COMPLIANCE → EXPLOIT CONSTRAINTS → IMPROVE CONTINUOSLY

2. INCREASE CAPABILITIES
- Make room for compliance
- Eliminate Non-Value Added Activities
- Free up resources to work on improvements
- Exploit existing technologies
- Fill gaps in capabilities

4. EXPLOIT CONSTRAINTS
- Remove bottlenecks
- Eliminate work arounds
- Exploit constraints

IMS, GRC	Data Analytics	Workflow / Automation	Program / System Management	Change Management System
Obligation Management System (ISO 19600)	Integration	Checklists , Audit Mgt. , Bots	Policy / Process Management	Models / Simulation
Audit Management	Program & System Management	Risk Management (31000)	Risk Management	Data Analytics, Balanced Scorecard
Databases	Risk Management (31000)	Data & Document & Records Management	Change Management	Feed-forward, Feed-back Systems
Intelligence / Insights	Data & Document& Records Management	Connected Devices, IoT	Data Analytics	Audit / Case Management
Bots	Operational Systems	Blockchain	Bots	Machine Learning, ML, AI, Insights



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EFFECTIVE STRATEGIES

Manage risk throughout transformation project

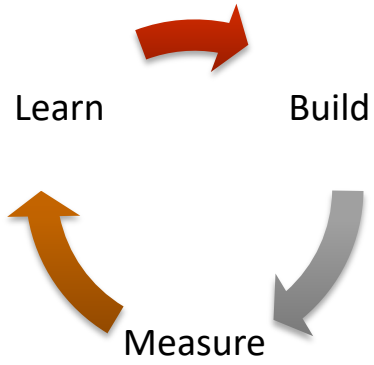
TRANSFORMATION MAPPING
Kick Off Meeting
Review project scope, approach, timeline, and deliverables
Conduct Deep-dive Transformation Mapping Session
Define and approve MVP Baseline

MVP ITERATION BUILDS
Follow Build-Measure-Learn (MVP1, MVP2, MVP3)
Conduct MVP assessments
Approve Final (MVP3) Configuration

Lean Startup

Start → MVP Base → MVP Iterations (MVP1, MVP2, MVP3) → Transition

MVP BASELINE BUILD
Setup platform environment
Build and configure MVP
Conduct MVP Baseline Assessment
Lessons learned



SOLUTION TRANSITION
Deploy and verify solution
Conduct Training
Validate transformational outcomes
Lesson learned
Monitor and improve (PDCA)

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EFFECTIVE STRATEGIES

Digital Transformation Roadmap for Compliance Improvement

1. CHOOSE DESTINATION

- **IMPROVE PRODUCTIVITY** — INCREASE MARGINS
- **IMPROVE COMPLIANCE** — ENSURE OUTCOMES
- **CREATE VALUE** — IMPROVE OUTCOMES

2. DEFINE OUTCOMES

- Improve safety
- Improve quality
- Reduce violations
- Reduce emissions
- Reduce cost
- Improve Efficiencies
- Improve Effectiveness

3. SELECT STRATEGY

- **DIGITAL TWIN/THREADS** — MODEL REALITY



- **DIGITIZATION** — CONVERT ANALOG TO DIGITAL



- **DIGITALIZATION** — CREATE INSIGHTS



- **TRANSFORMATION** — CHANGE REALITY

airbnb UBER ebay amazon.com

4. IDENTIFY CONSTRAINTS

- Workarounds
- Limitations
- Bottlenecks

5. IDENTIFY RISKS

- Threats
- Opportunities

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Improving Compliance Using Digital Transformation

Raimund Laqua, PMP. P.Eng

Chief Compliance Engineer

LEAN COMPLIANCE

1. CHOOSE GOAL

IMPROVE PRODUCTIVITY

INCREASE MARGINS

REDUCE UNCERTAINTY

ENSURE COMPLIANCE

CREATE VALUE

IMPROVE OUTCOMES

2. DEFINE OBJECTIVES

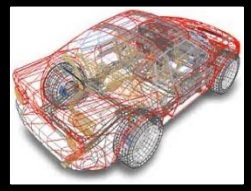
OBJECTIVES

Improve safety
Improve quality
Reduce violations
Reduce fines
Reduce emissions
Reduce third-party risk
Reduce cost
Improve efficiencies
Improve effectiveness

3. SELECT STRATEGY

DIGITAL TWIN/THREADS

MODEL REALITY



DIGITIZATION

CONVERT ANALOG TO DIGITAL



DIGIDALIZATION

CREATE INSIGHTS



TRANSFORMATION

CHANGE REALITY



4. IDENTIFY CONSTRAINTS

Workarounds
Limitations
Bottlenecks

5. IDENTIFY RISKS

Threats
Opportunities



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THE DIGITAL TRANSFORMATION PROGRAM

Get ready for the next wave of digital transformation



TRANSFORMATION MAPPING SESSION™

Get ready for the next wave of digital transformation.

Ready. Set. Go.

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