Flow Thinking: Value Realization and Organizational Dynamics

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Accomplished Technology-Business leader. Record of distinct value creation using disruptive tech and whole-systems approaches. Expertise in distributed info systems & vendor ecosystems, maximizing emergent technology value, PBM, e-Commerce, pharma, medical devices, consumer packaged goods businesses.

Former VP of EA, Tech Strategy, Enterprise Data & Commercial Systems at Johnson and Johnson and VP, Enterprise Transformation & CTO and VP, IT Strategy for Medco Health Solutions.

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Mr. Gangopadhyay plays a key role in the design and implementation of GalaxE's services, products, client solutions and its continued worldwide expansion and operational success. His experience spans 30 years in information technology and pharmaceutical manufacturing in Asia, Europe and the US. He set up one of India's first private Software Technology Parks, designed and implemented highly fault tolerant platforms from the OS up for e-commerce platforms and invented a gravitational feed manufacturing process and system for acetaminophen. He is a member of the Indian Institute of Chemical Engineers and is certified in the Governance of Enterprise IT. He holds a Bachelor's degree in Computer Engineering from Bombay University.

Very often our local goals, neglected renewal/ maintenance, and local actions become the limit

Technology Spend

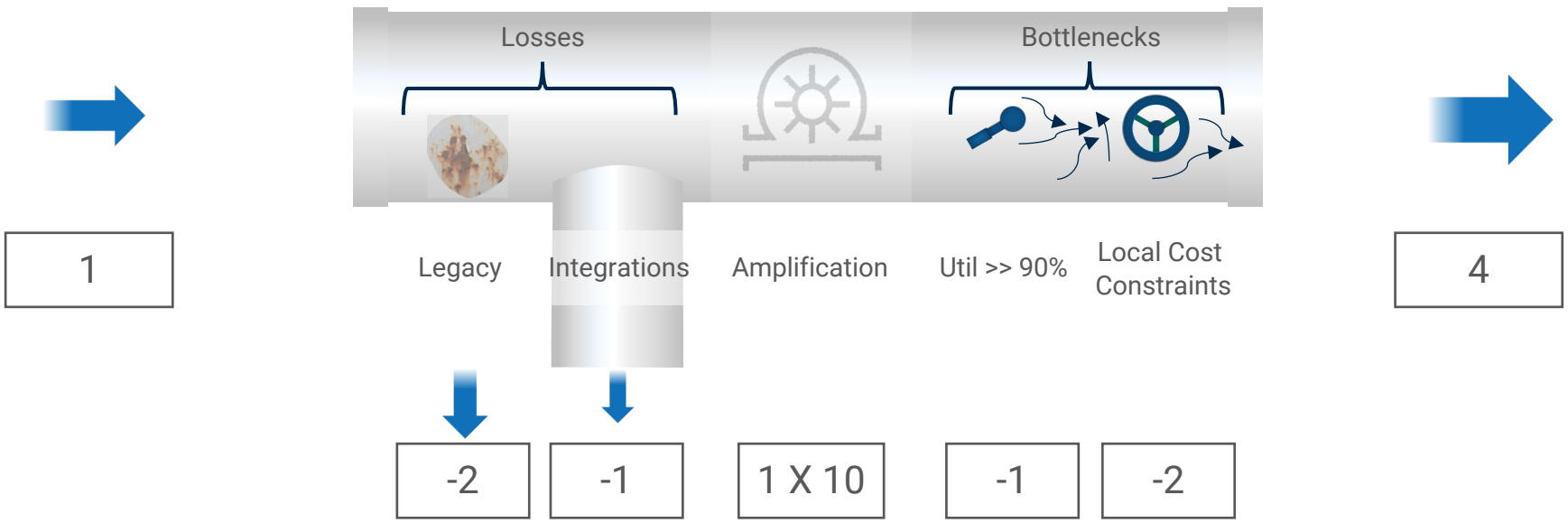
Spend to acquire, operate, and renew technology

Value Loss and Bottlenecking

Bottlenecks gate value
Losses leak value

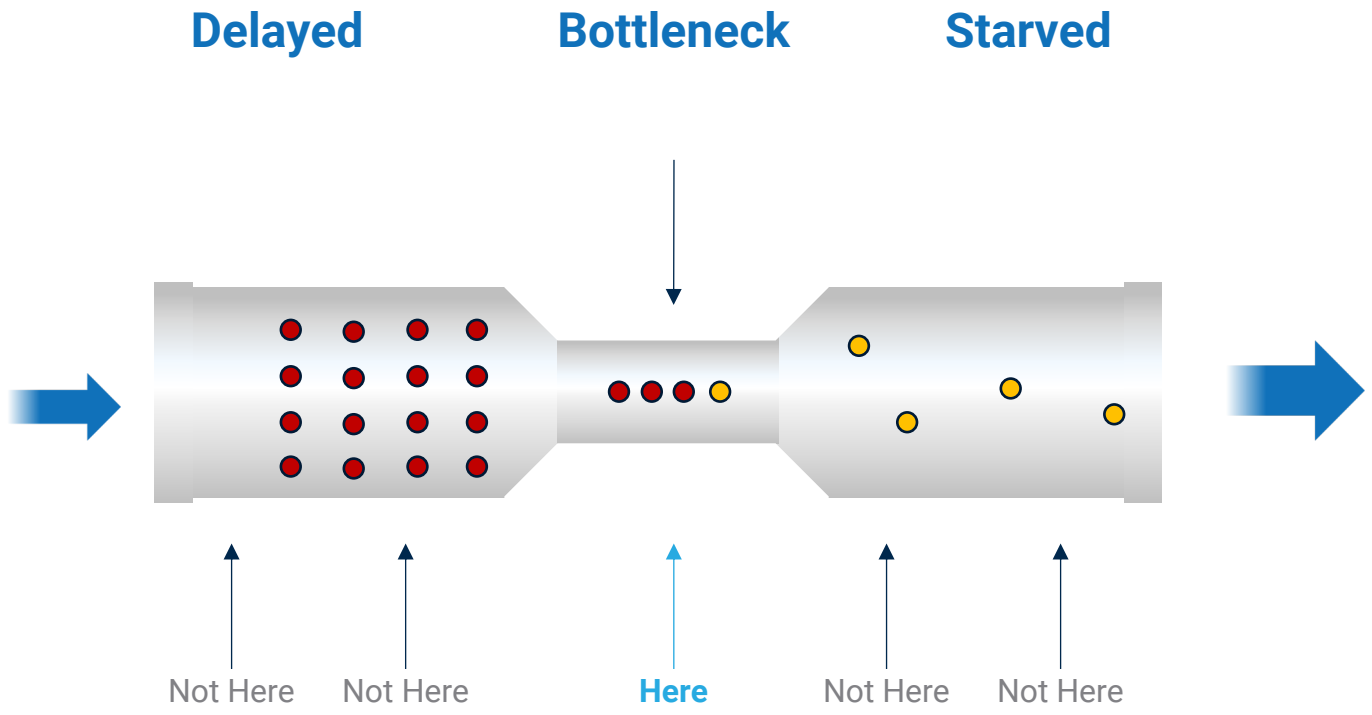
Resulting Economic Value

Less due to losses and bottlenecks



A shared service cost center which allocates costs to services typically will operate to satisfy local goals over global goals

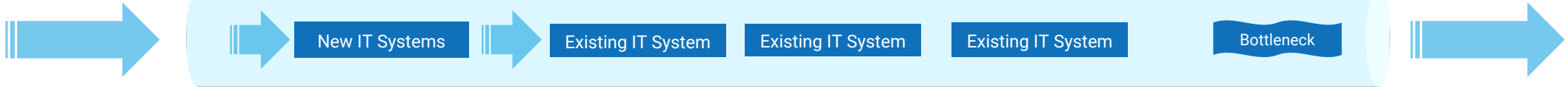
Solving for “other than” a bottleneck impedes value



Economic Value ($) Generated by Technology in a Business

Generative Flow

Input
(usiness operations)



Output
(business value)

Flow increases as bottleneck effects are diminished or removed
Bottlenecks are removed or diminished one at a time, biggest to smallest

Business Transactions (N)
- Queries
- Sales
- Payments

Technology Value Realized ($)
- Revenue
- Ops/SGA Savings
- Positive Market Cap
- Offset by Tech Costs ($)

Ratio of Technology Expense to Revenue typically is 2% to 4%. Varies by Industry and Size. >>10BLN Revenue

Defects in Generative Flow show up as increased cost, capacity limits, or errors.

Defects in Generative Flow can and often do become improvement changes in the next funding year, or failure changes in the current year.

Technology is a benefit if, and only if, it diminishes a limitation.

- ELI GOLDRATT

Systems Thinking

A company, institution, or any organization is a **system**

Flow, like water in a riverbed, can also describe economic value. Where does it begin and end?

Information technology (IT) infrastructure, apps, governance, and operations are all **systems**

A challenge with the **system** we know of as IT, is that it is **invisible**, in terms of its role in the flow of value generation

So, IT is treated not as a key **system**, but as a set of assets, cost allocated to company units

Any organization that designs a system (defined broadly) will produce a design whose structure is a copy of the organization's communication structure.

- MELVIN CONWAY

Key Beliefs

How anyone in the system can help the system

- Increase situational awareness, visualize our work and decisions
- Hypotheses and Experiments over Technology Roadmaps
- Directionally correct over On Time and On Budget
- Use data to inform direction
- Small batch sizes of value to the customer
- Focus on optimizing for flow of value
- Learning: **Probe, Sense, and Respond**

Thank you!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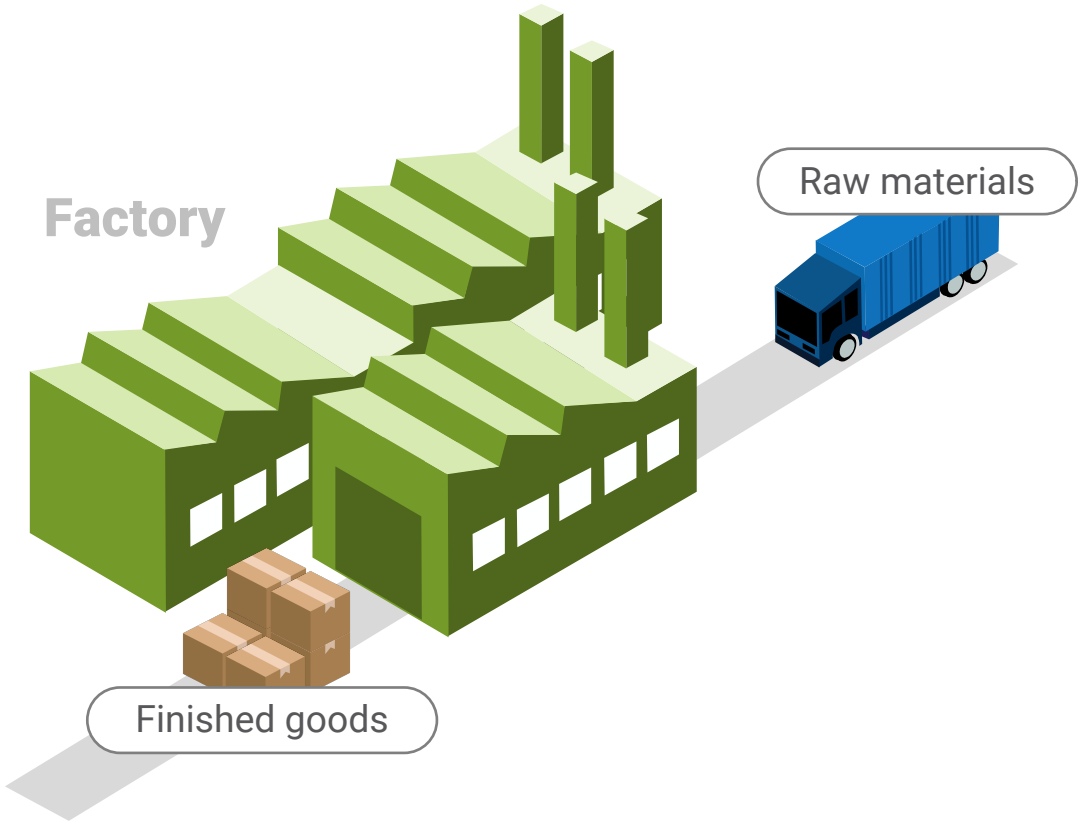
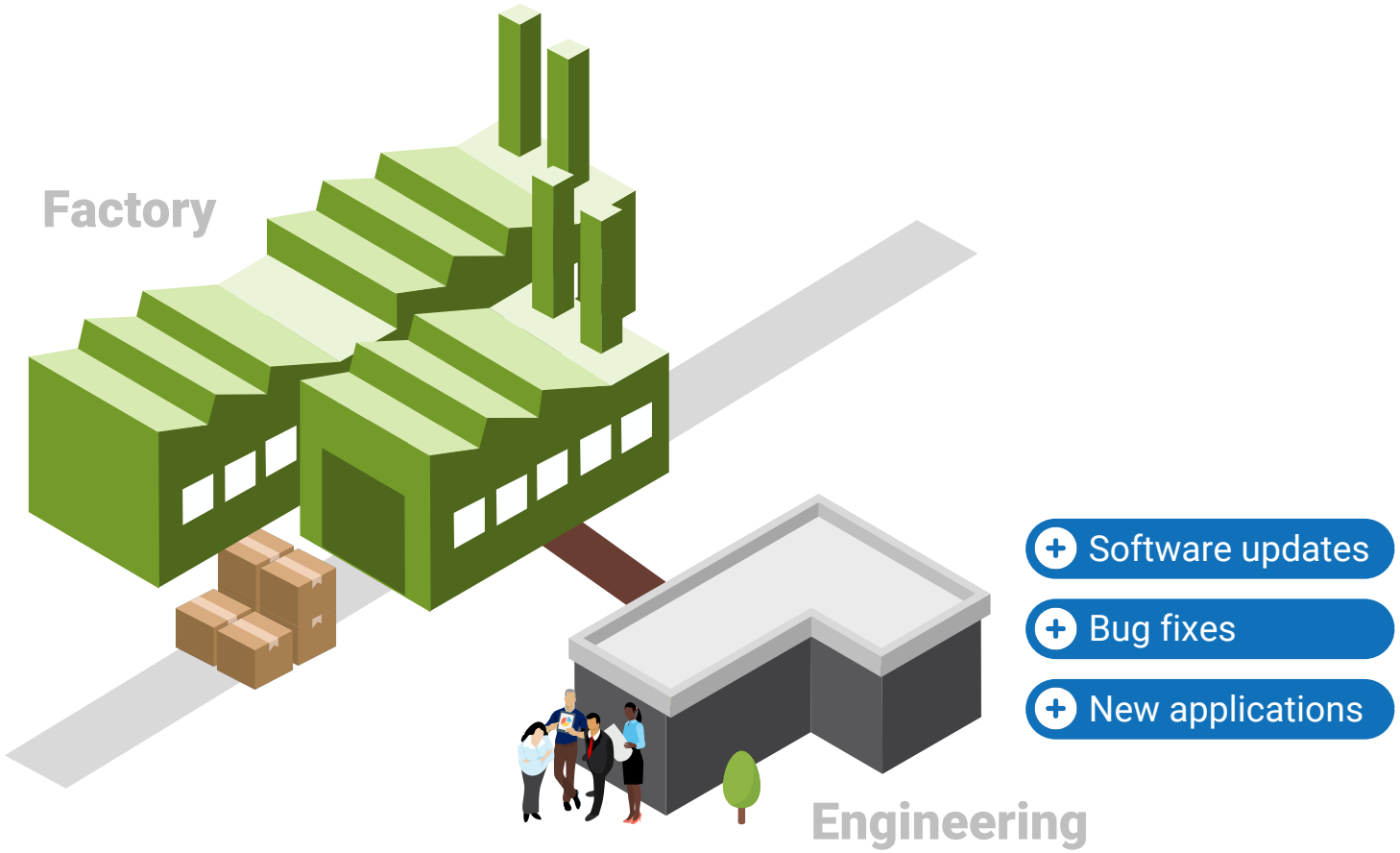
engage™
quality™
prime™
trace™
wave™
capture™
care™
claims™

Current Best Practice

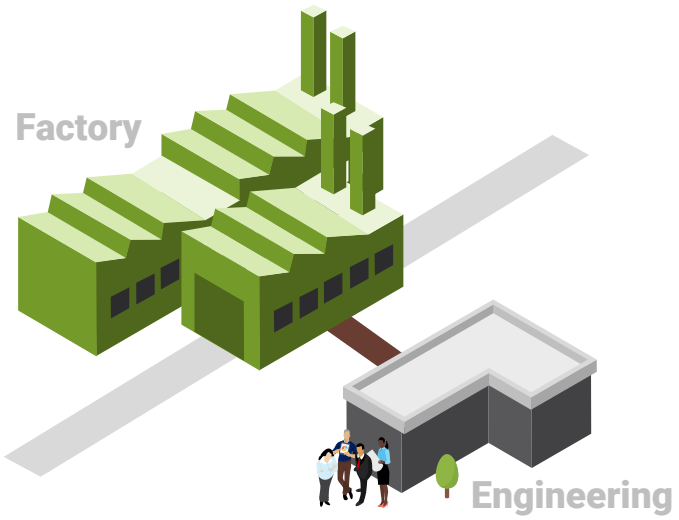


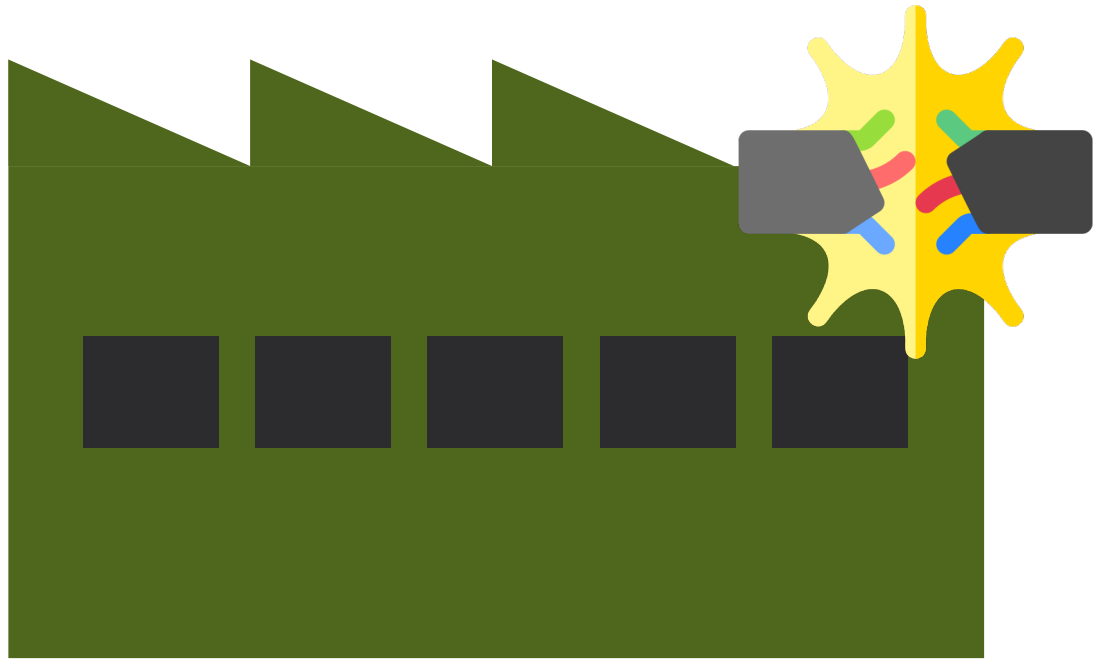
Current Best Practice



- Software updates
- Bug fixes
- New applications

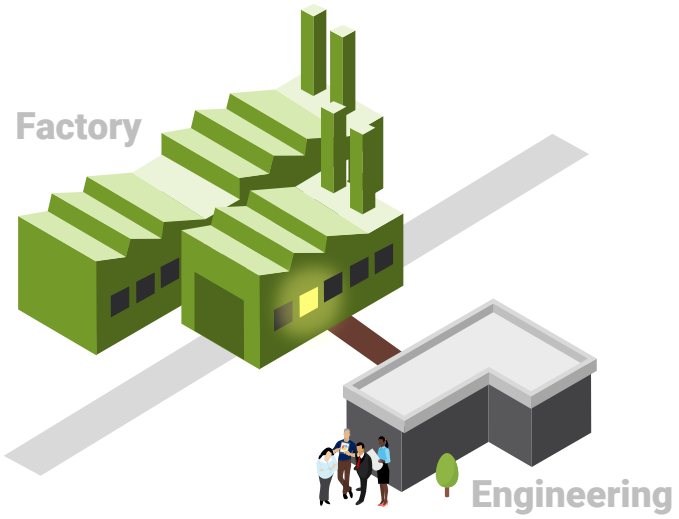
Current Best Practice

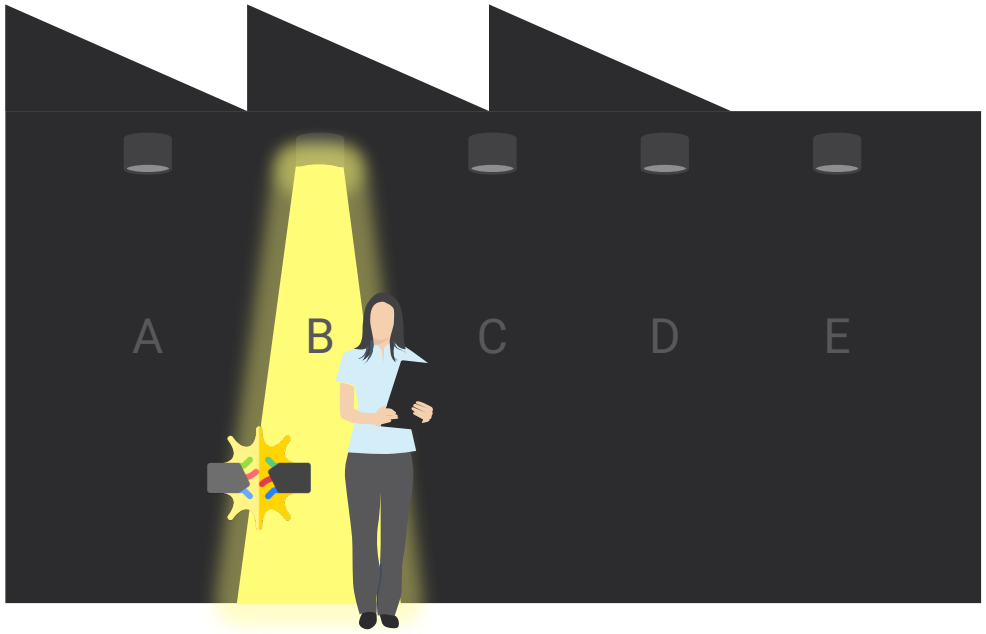




- Network issue
- Database issue
- Application issue
- Permissions issue

Current Best Practice





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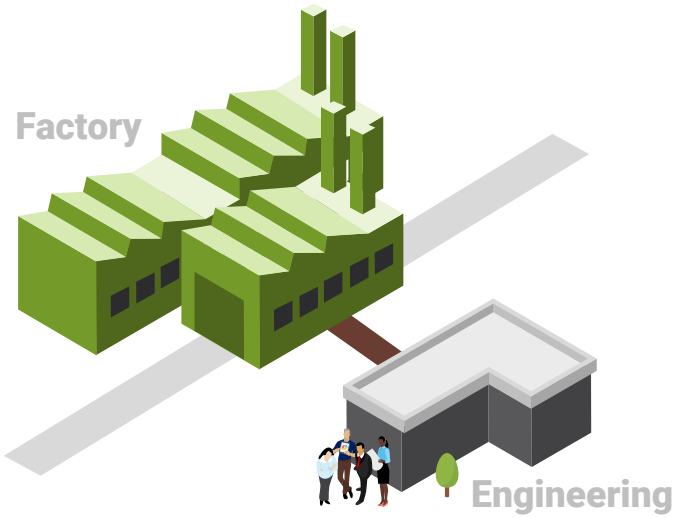
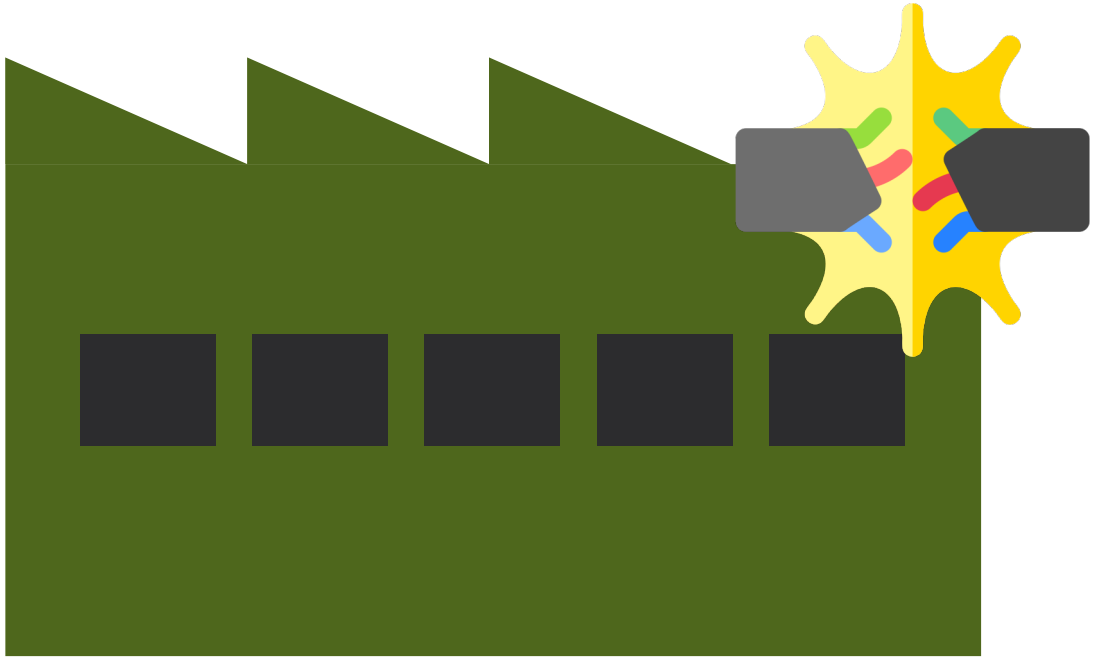
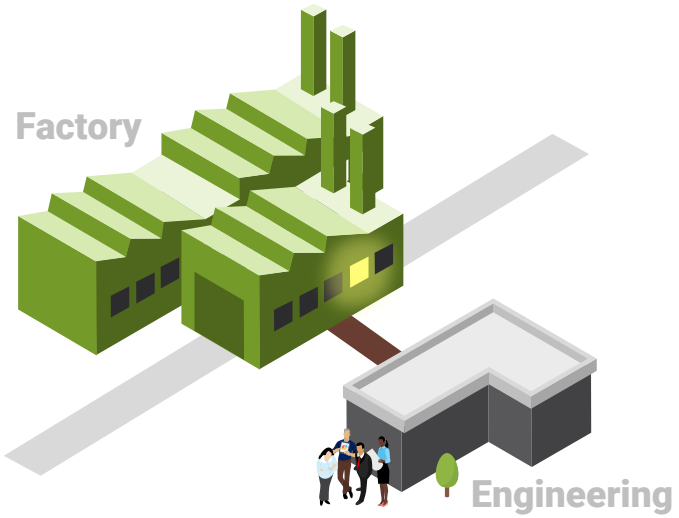
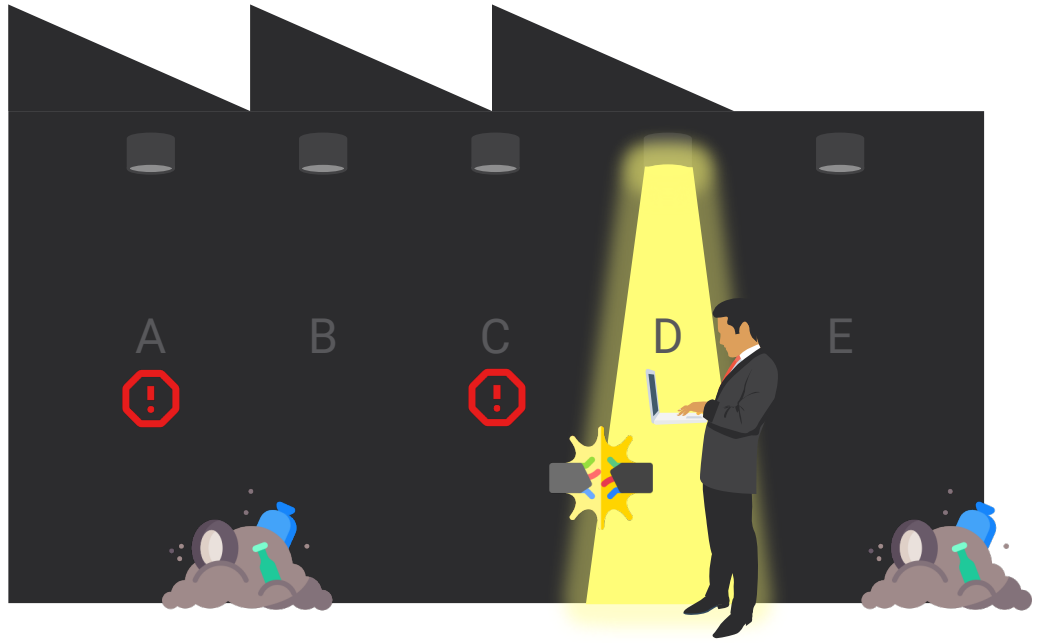


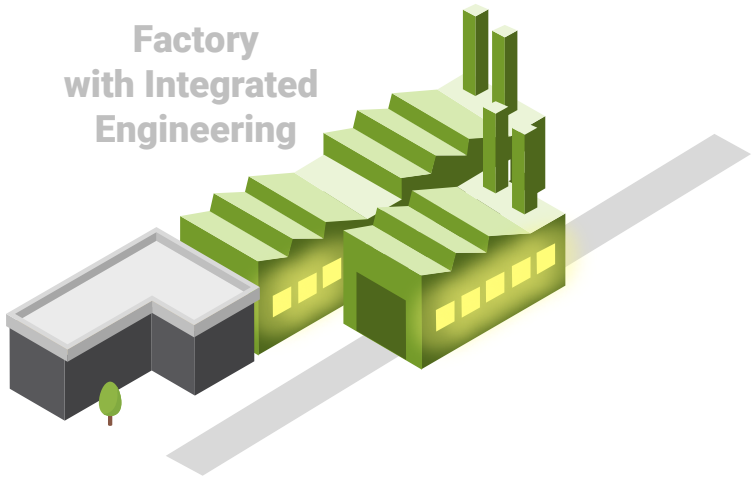


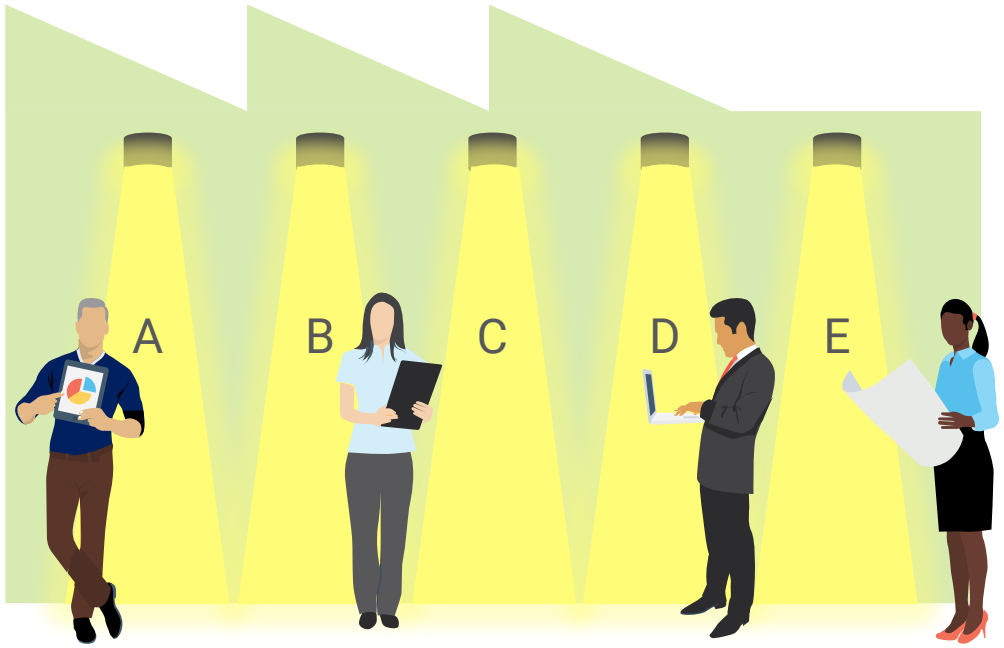
Current Best Practice





Future/Ideal State





Knowledge Kit

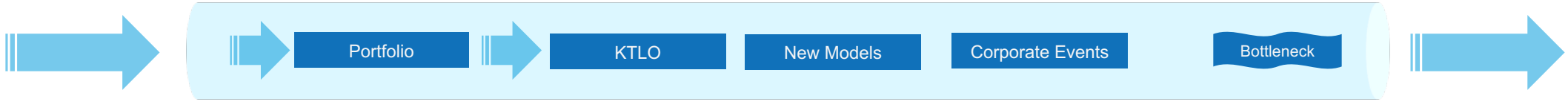
Examples from continued work which have demonstrated changes

- **Strategy Deployment** (Hoshin Kanri) for aligning work to purpose
  https://www.amazon.com/Art-Action-Leaders-between-Actions/dp/1857885597
- **Visual Enterprise** and managing workflow across the portfolio
  https://www.amazon.com/Fifth-Discipline-Practice-Learning-Organization/dp/0385517254
- **Theory of Constraints** throughput accounting, evaporating cloud
  https://www.amazon.com/Goal-Process-Ongoing-Improvement/dp/0884271951/ref=sr_1_1?dchild=1&keywords=the+goal&qid=1618491041&s=books&sr=1-1
- **Cost of Delay** for prioritizing our backlog
  http://leanmagazine.net/lean/cost-of-delay-don-reinertsen/
- **PDSA** (Plan-Do-Study-Act) – or OODA, as a discipline that holds all organizational processes together, A3 Problem Solving
  https://warroom.armywarcollege.edu/special-series/great-strategists/boyd-OODA-loop-great-strategists/
  and https://www.amazon.com/Boyd-Fighter-Pilot-Who-Changed/dp/0316796883/ref=sr_1_1?dchild=1&keywords=boyd+ooda&qid=1618491231&sr=8-1
- **Flow Thinking** and small batch sizes
- **Designing** safe-to-fail experiments
- **Real Options Theory** and commitments
- **Cynefin** and complexity science - sensemaking framework
  https://cdn.cognitive-edge.com/wp-content/uploads/sites/2/2020/10/24130536/Cynefin-book-SAMPLE_Ed01.pdf
- **Wardley Mapping** (Ben Mosier) to communicate more effectively across boundaries
  https://learnwardleymapping.com/
- **MODEL Office** – Creation and operation of mockup or full scenario simulators for customer – company interactions, makes work visible

Changes that Alter a Technology or its Relationship with Business Operations will Impact Generative Flow

Improvement Flow

Input
(business operations)



Output
(business value)

Flow of change increases as bottleneck effects are diminished or removed
Bottlenecks are removed or diminished one at a time, biggest to smallest

Business Change (Improvements)
- Projects
- Corporate Events
- Market Change
- …

Generative Flow
- Ideal: Positive changes implemented
- Failure: Negative changes

KTLO: Keep The Lights On

Half of Tech Spend can be Change Related

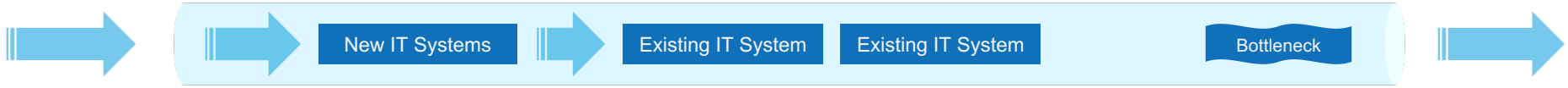
As Generative Flow becomes more Complex and Business Needs drive more Change, Failures can increase

By Shortening change feedback and isolating/abstracting common layers, Failures can be minimized

Economic Value ($) Generated by Technology in a Business Three Kinds of FLOW

Generative Flow – Happy case

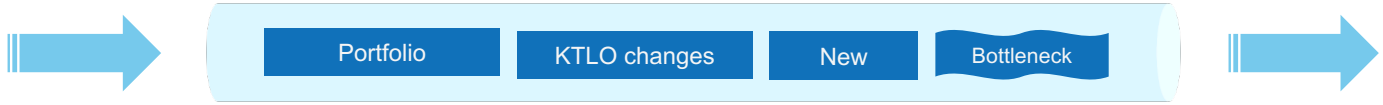
G



Flow increases as bottleneck effects are diminished or removed

Improvement Flow or “Value Demand”

I



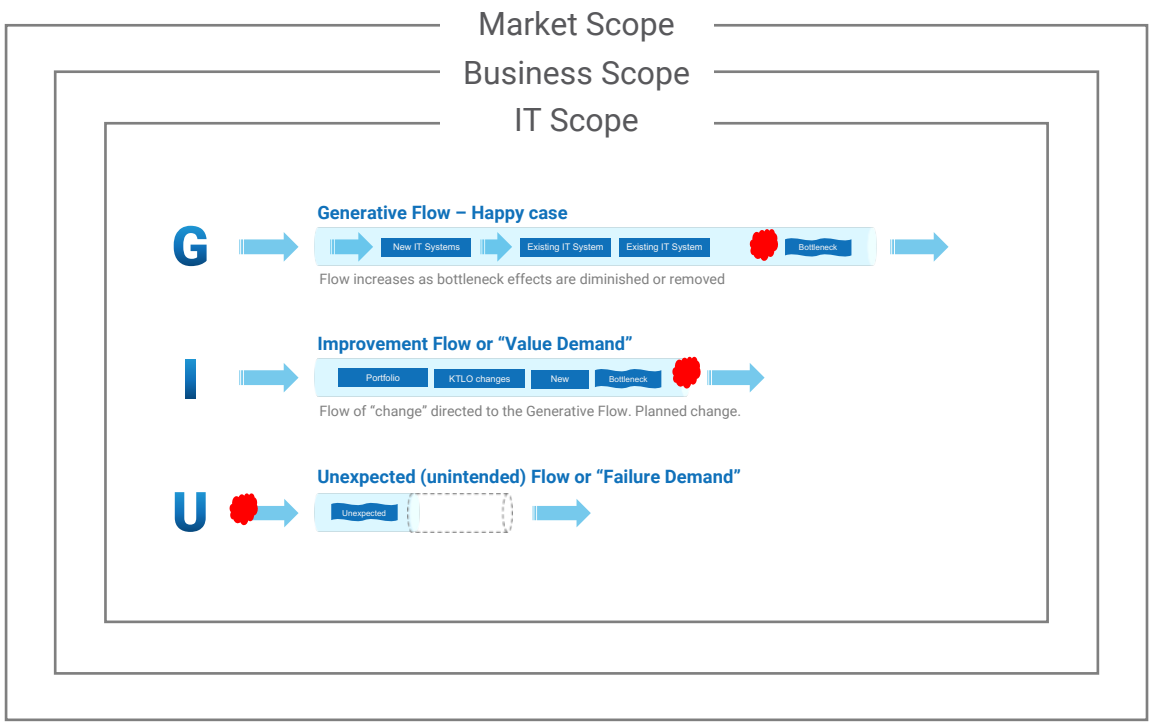
Flow of “change” directed to the Generative Flow. Planned change.

Unexpected (unintended) Flow or “Failure Demand”

U

Failures, Generative, or Improvement, our responses, and the disruptive re-sequencing impact. Can be as much as planned Improvements (worst case).

How do you know if you have the right bottleneck?



The key challenge and problem is that change emergence in more distant scopes usually entails more planning delay.

Creating more visible layers of value horizontal for API use directly decreases planning elements and delay.

- Bottlenecks to FLOW are unique to each FLOW type. But when a bottleneck is a technology platform or system/service, and it shows up in more than one FLOW, it's a good chance that it is the biggest bottleneck or the only bottleneck to focus on.
- **Generative Flow** A bottleneck here would create more costs or delay business operations processing or create rework.
- **Improvement Flow** A bottleneck here would show up as a system or service that was "too hard" or "too expensive" to change or carried too much risk for change. Also, ones that are shared by many consumers creating a "Tragedy of the Commons" condition.
- **Unexpected or Failure Flow** We are not looking for bottlenecks here. In fact, we don't want any FLOW. But if there is a system or service which is the root cause of failures both in Improvement and Generative. Again – its likely THE BOTTLENECK.

Market-wide Observations and Durable Understanding

Conway's Law

Observation coined in 1968 by Melvin Conway. "Any system which creates other systems is destined to create them in its own image". Practically, if one creates an application, it will bear a resemblance to the team communications structures which created it, including GL and P&L constraints and tremporal constraints.

TOC Theory of Constraints

Dr Goldratt's body of knowledge. Systems thinking and constraint management. Thoughtful and well tested methods for operations and manufacturing. I apply it to the IT-Business boundary.

Post-structured IT

Pre and Post structured IT. Pre structured is where IT efforts could directly be captured by well known requirements and bid to providers. Examples are ERP, and POS systems. Post structured IT is a platform of parts and examples where the user can create their own system and solution. It is emergent by definition and requirements are not known ahead of time. Network effect outcomes are accelerated by post structured IT, they often are held back by pre structured IT.

Cost Accounting

Generally used in reference to Throughput accounting. Cost accounting judges performance based on cost allocation per unit produced or worked. Throughput accounting judges Value per unit produced, cost is implied in value. Value is a superior metric for full-system decision making. Cost accounting only restricts leaders to only that which can reduce cost, even if it harms value.

My “So What”

30+ years of consistent and predictable findings

Opportunity

Because this core problem of localized, invisible work is portable across people and market conditions, and the impact(s) of its furtherance are largely invisible, and vendors / advisors benefit somewhat from the crisis-intervention model, one should not expect a change. Unless…(read on).

- 2019 total world tech spend was 14.1 trillion $
- IT is a FORCE multiplier. Or it should be. Every $1 in IT should create $10 of hard savings and/or $100 in incremental revenue and/or $1000 in market cap. We do not see nor do we assign the value to tech.
- A 1% improvement in SGA or Revenue for a fortune 100 company is material.
- This approach has delivered 22% and 30% SGA savings (hard) since 2012.

It is documented in the Defense Business Board task group read out referenced on page 2.

Still unable to achieve light bulb moments in vast amounts of leaders.

Areas of Un-Realized Value

- Transformations either one of a kind or resets and recoveries (fixer team)
- Hedges amongst competitors in market based on public and semi public / paid research