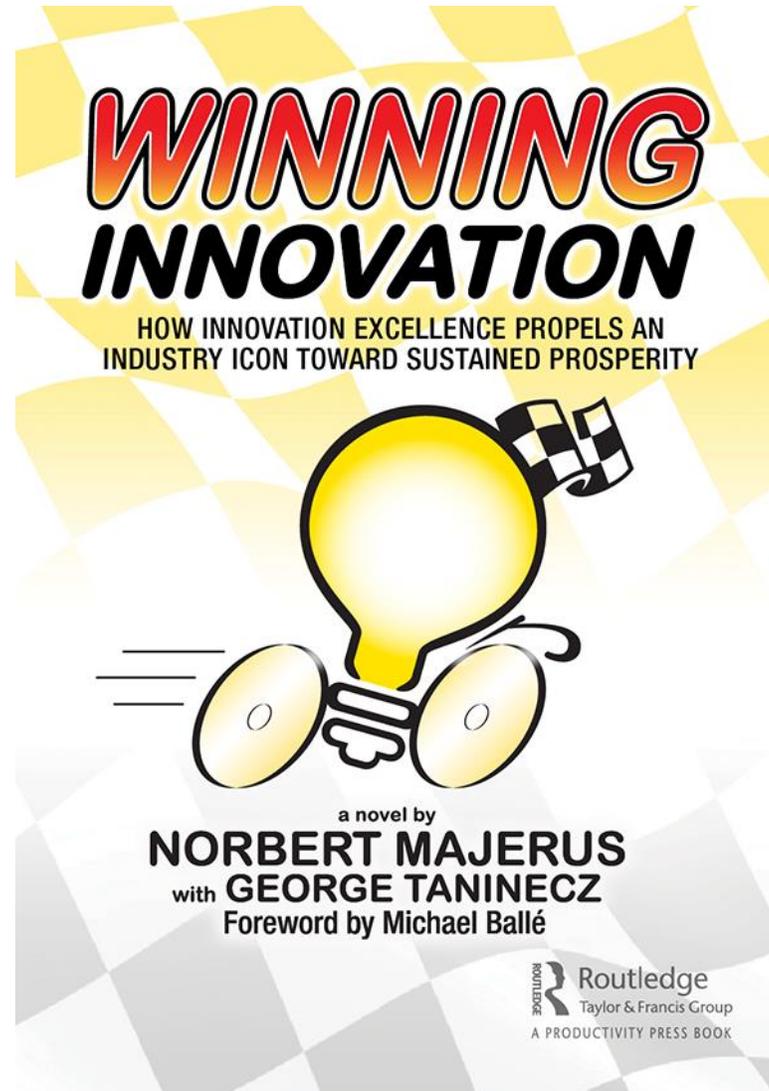


Building a Lean Culture of Innovation

Norbert Majerus



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INDUSTRY NEWS

Unlearning What Toyota Taught Us

Tesla applies fluid product-design process to Model Y.

Today, the automotive world is changing. EV startups, notably Tesla, have ripped Toyota's game plan to shreds. They're moving at lightning speed, taking daring steps with new technology and breaking the old business models.

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Tesla vs Toyota

- **Unlearning What Toyota Taught Us** OH - NO
- Today, the automotive world is changing. EV startups, notably Tesla, have ripped Toyota's game plan to shreds. They're moving at lightning speed, taking daring steps with new technology and breaking the old business models.

• And it's kind of funny to me, because all the arguments I hear in favor of clinging to the old way of doing things are exactly the same ones I heard decades ago, when it was the Toyota Production System that was disrupting the industry.

• *John McElroy (pictured above, left) is editorial director of Blue Sky Productions and producer of "Autoline Detroit" for WTVS-Channel 56, Detroit.*

This is nothing new ...

My Personal Opinion

- If a company is successful with innovation or fails at it, always comes down to CULTURE
- Culture (**process and values**) is how we do things how we have always done things (how we all got to where we are) and how we set ourselves up to continue to do things (what we do to assure our [personal] future).
- This robustness is part of nature assuring survival ***IF*** things do not change. But nature has also provided (some of) us with an **ability to change and adapt and teaches us a lot about innovation.**
 - Quote Shigeo Shingo

What is Innovation

- Process from an idea to the money in the bank
- Innovation is the effort to create purposeful, focused change in an enterprise's economic or social potential
- **Create something new to make a difference for somebody**
- **Not a flash of genius but the systematic exploitation of opportunities**

What Is Culture?

- How we do things, how we have always done things, how we will always do things through changes in leadership
- Anybody can be assigned to a project (??standard work)
- BUT what about continuous IMPROVEMENT?

- Combination of processes, values, behaviors to achieve **sustainable** results

Facts

- Lean/OpEx needs a change in culture to be sustainable
- It takes a culture for success with lean – same for innovation
- A lean culture does not automatically create a culture of innovation
- AND the two are not in conflict ...

Agenda

- What is a lean culture
- Cultural Elements Critical to Innovation
- Innovation Principles
- Innovation Processes
- Putting it all together - SUMMARY

Lean Culture

The *Shingo Model*[™] is not just another initiative; it is a new way of thinking.

Click on the links below to learn more.

Principles

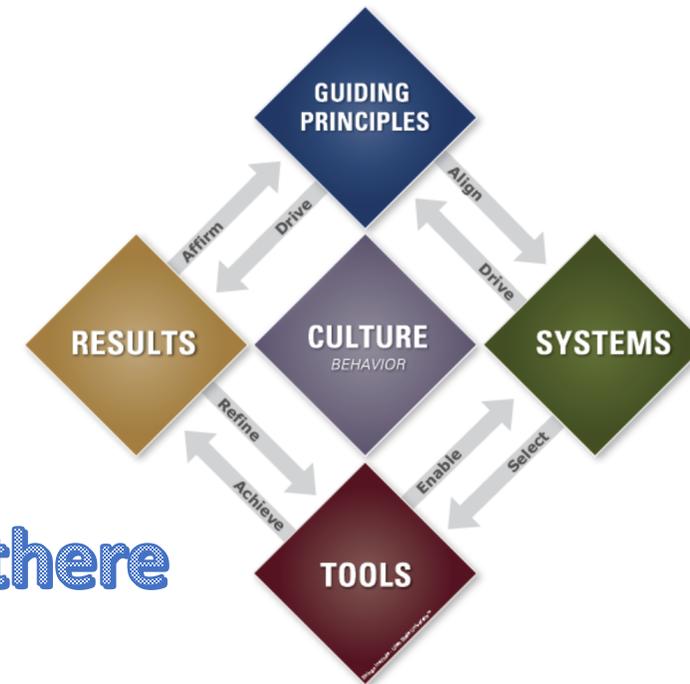
The *Shingo Guiding Principles* are the basis for building a sustainable culture of organizational excellence. In the Guiding Principles diamond, the principles are divided into three dimensions: Cultural Enablers, Continuous Improvement, and Enterprise Alignment. Each dimension and principle are presented in further detail below.

Tools

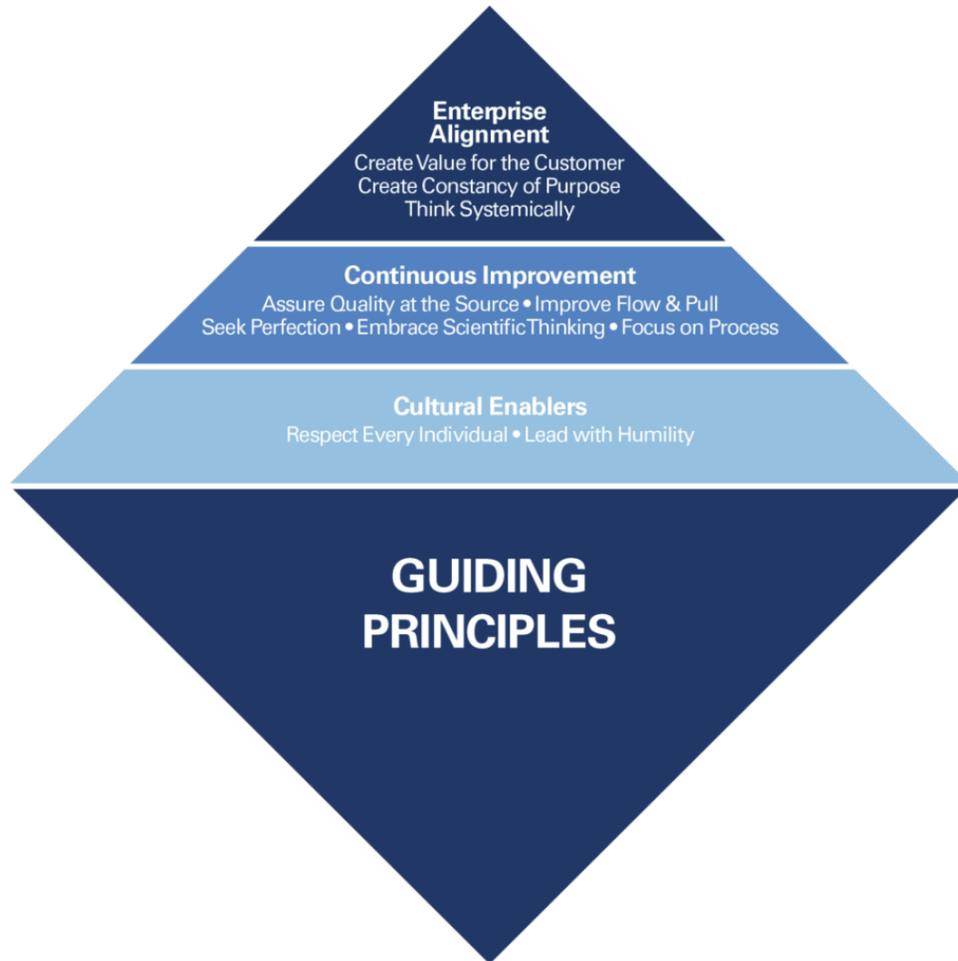
Systems

Results

Culture



... how it got there



Shingo Guiding Principles

Click on each principle for a detailed explanation.

[Respect Every Individual](#)

[Lead with Humility](#)

[Seek Perfection](#)

[Embrace Scientific Thinking](#)

[Focus on Process](#)

[Assure Quality at the Source](#)

[Improve Flow & Pull](#)

[Think Systemically](#)

[Create Constancy of Purpose](#)

[Create Value for the Customer](#)



What is a lean culture?

(MY Definition)

- Operating system based on lean principles
- Focus on continuous improvement (not how we always did things and will continue to do things)
- People centric
- Creating right results
- Sustainable

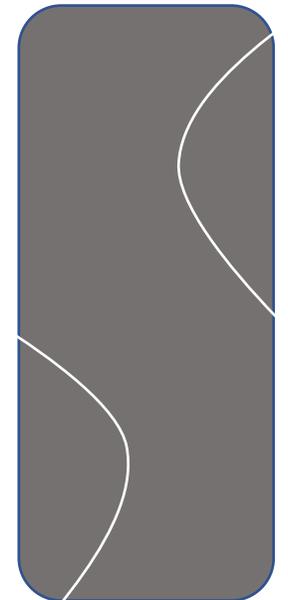
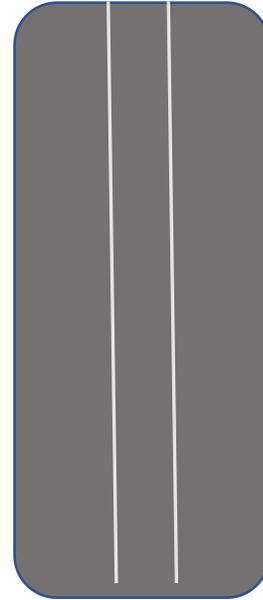
Cultural Elements **Critical to Innovation**

- **Education (about innovation) – Here NOW**
- Strategy/Metrics
- Collaboration
- **Eliminate Fear**
- Agility and speed - Later
- Create the environment
- **Leadership and Talent Management**

EDUCATION - EVERYBODY

- **NOT another “better brainstorming”**
- **NOT all entrepreneurship (patents, investments, raise capital**)
- **How creativity works - PRINCIPLES**
- **The BUSINESS rules of innovation**
- **The creation of the CULTURE**

My Innovation Experience



Innovation Fear

- Of the unknown (what leaders do not understand)
- We had to overcome this with lean
- Fear of every risk
- Fear of WASTE!!
- **PERSONAL** careers

How to DRIVE OUT FEAR?

- The right Hoshin Kanri and METRICS
- **The right GOALS for behaviors**
- A process to manage the risk (and the money) - **AGILE**
- The right **reward** for “courage”
- Make the uncertainty visible
- Comfortable at being uncomfortable
- **Eliminate intimidation (Respect, humility, trust)**

Cultural Elements **Critical to Innovation**

- Education (about innovation) – Here NOW
- Strategy/Metrics
- Collaboration
- Eliminate Fear
- Agility and speed - Later
- Create the environment for it to happen – do not force it
- **Leadership and Talent Management**

The Round Peg in the Square Hole

- Performance and behavior criteria
- Google, 3M
- Technical ladder – innovator ladder
- Corporate entrepreneurship
- Personal Experience

Humble Leadership

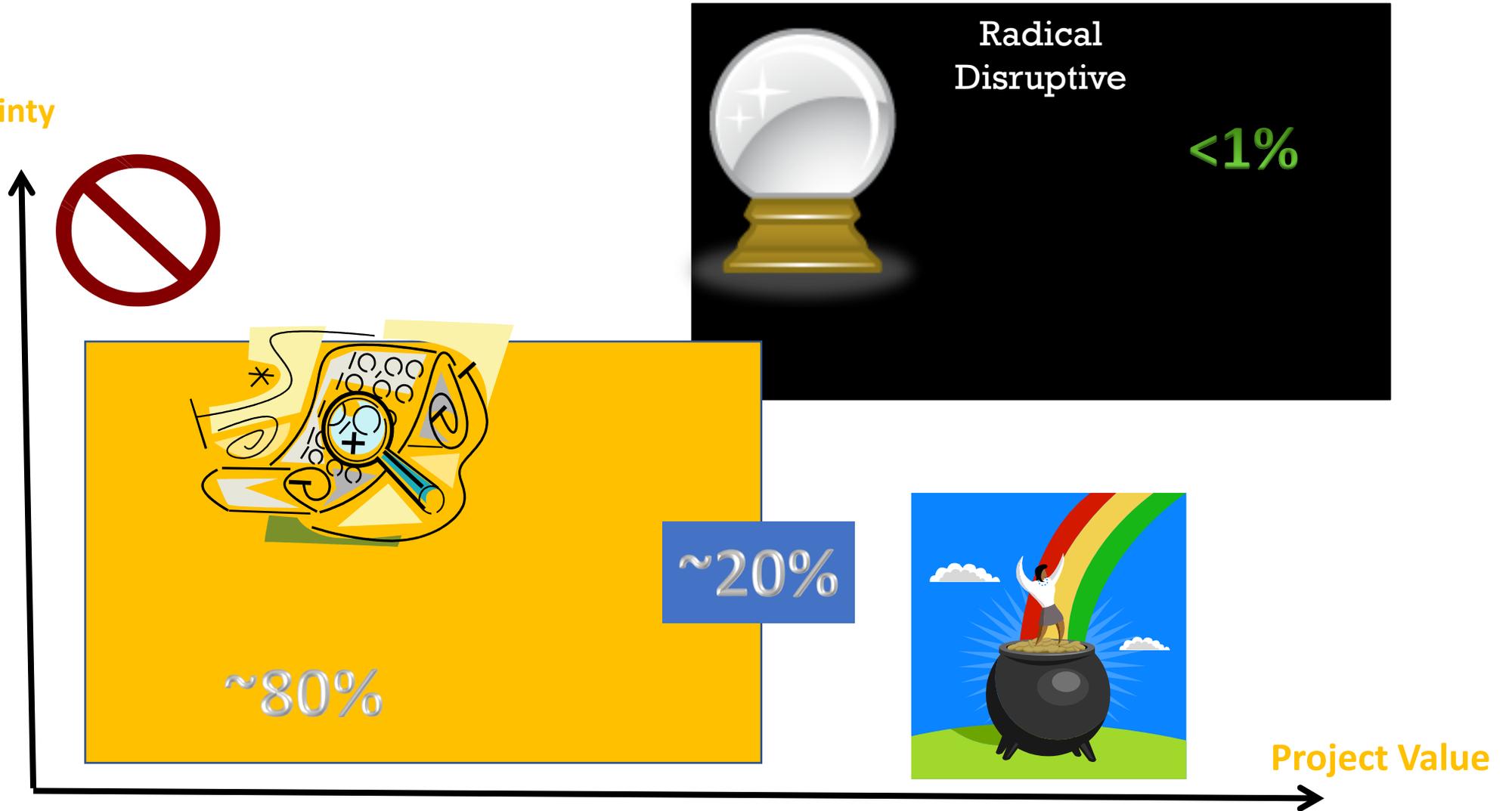
- Respect – including diversity
- You tell me - accountability
- HELP associates be successful
- Set example
- Trust – not control
- Ability to think right without all the facts

Innovation Principles

- How innovation works
- The MOTHER of Innovation
- Principles of Industrial Creativity
- Opportunities over gaps
- The Innovator's dilemma
- Risk Management
- Accounting
- Innovation Killers
- Interference with Lean
- Rethinking Customer Value

Innovation Grid

Project Uncertainty



Innovator Dilemma (Paradox)

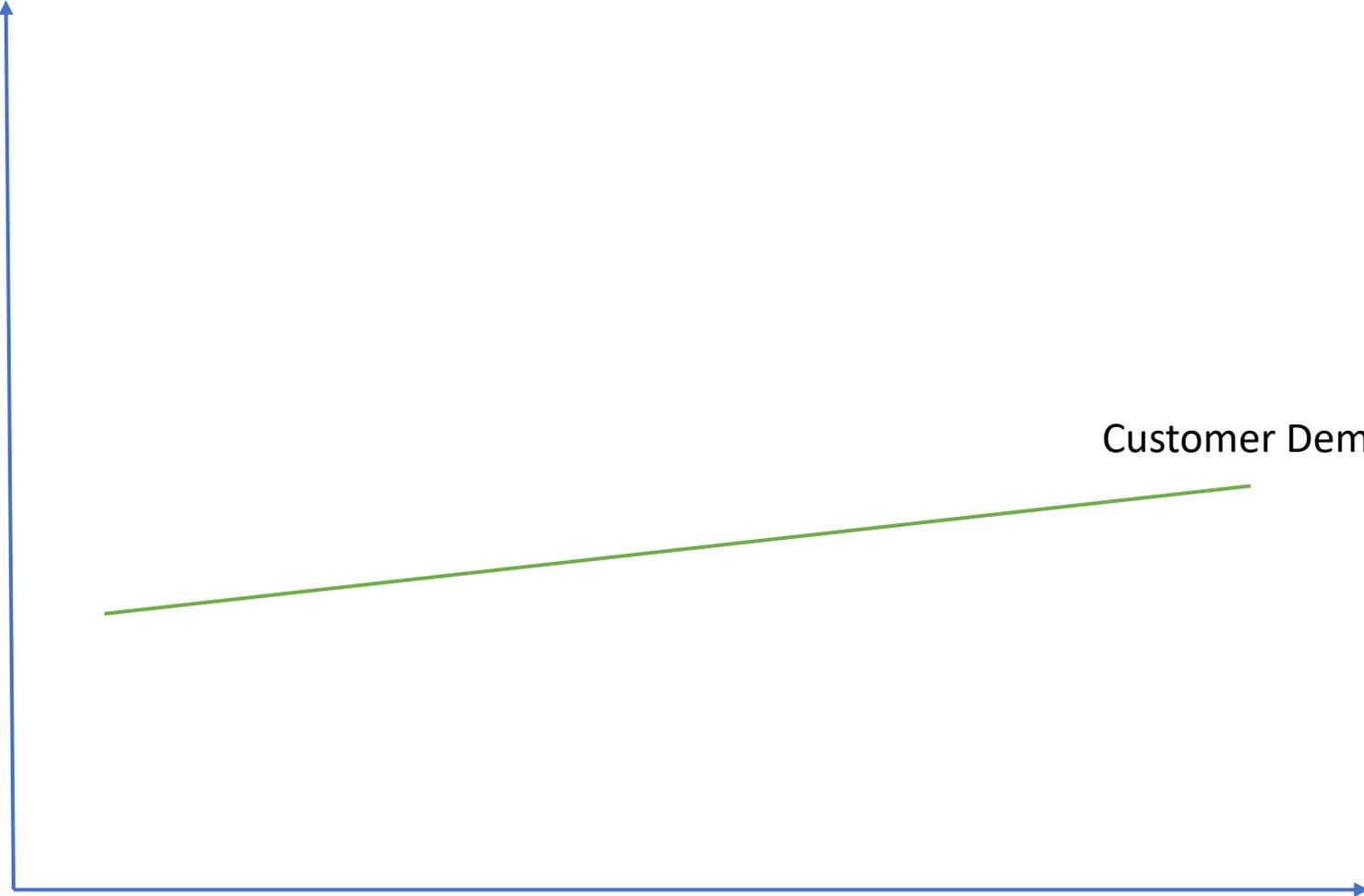
- Well researched/documentated (Clayton Christenson)
- Successful companies are least likely to succeed with disruptive innovation
 - They are comfortable with their current position and afraid to change
 - They invest in what their **current customers** want – even if they want faster horses
 - They rely on facts and data which are not available for disruptive innovation. Same for internal processes

Could this be the reason for the
Toyota/Tesla gap

The Innovator Dilemma (Paradox)

- The customers leave the established company as soon as a cheaper or better product is available even from a newcomer
- Examples: Film, Computers, Retail, Typewriters, Phone Service, Transportation, Healthcare, Financial Services, Education,
- Companies who I think understood disruptive innovation: ATT, 3M, P&G, Goodyear, Discover card, Akron Children's Hospital, Sony, HP

Innovation Potential

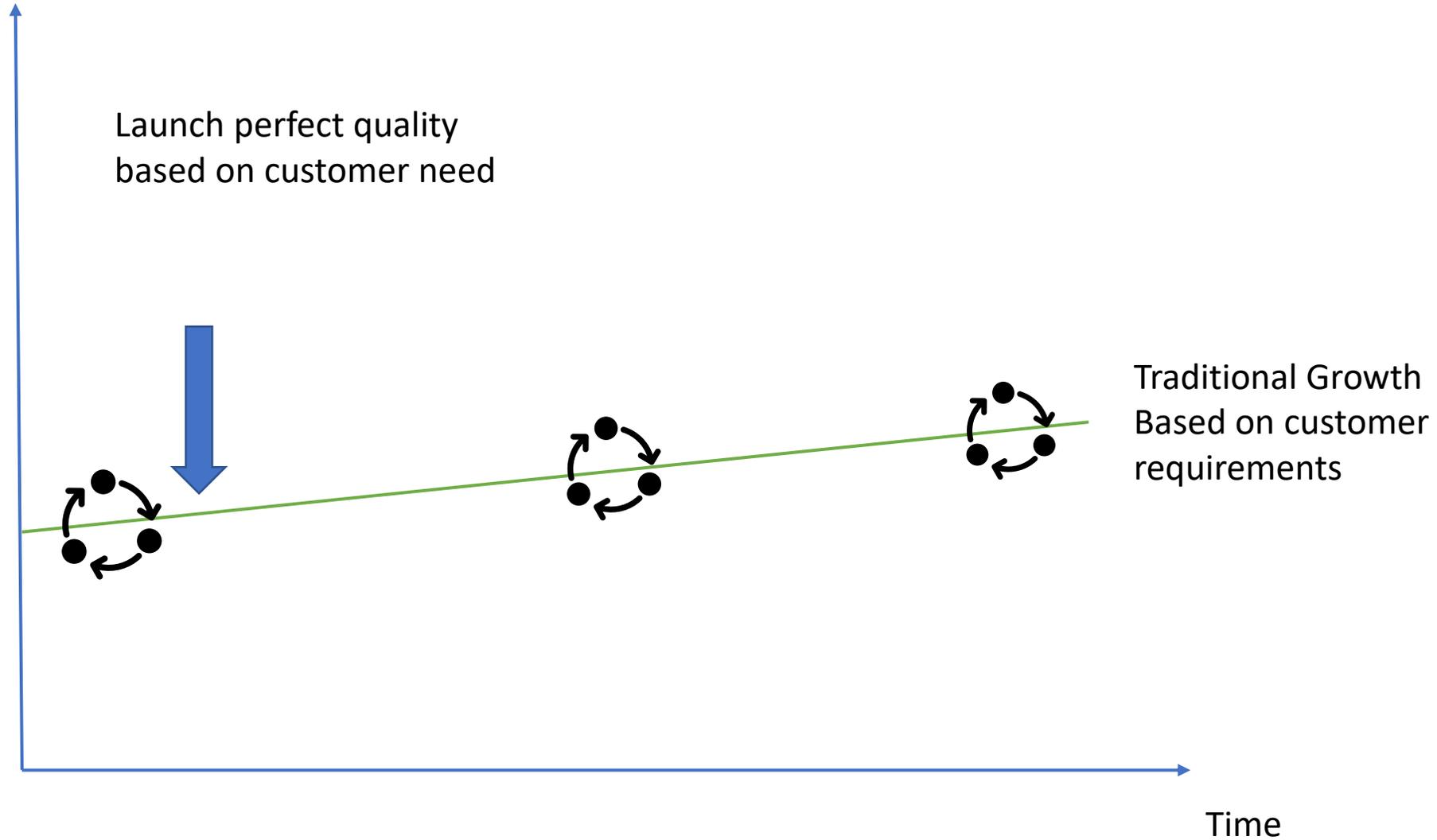


Traditional Growth
Based on customer
requirements

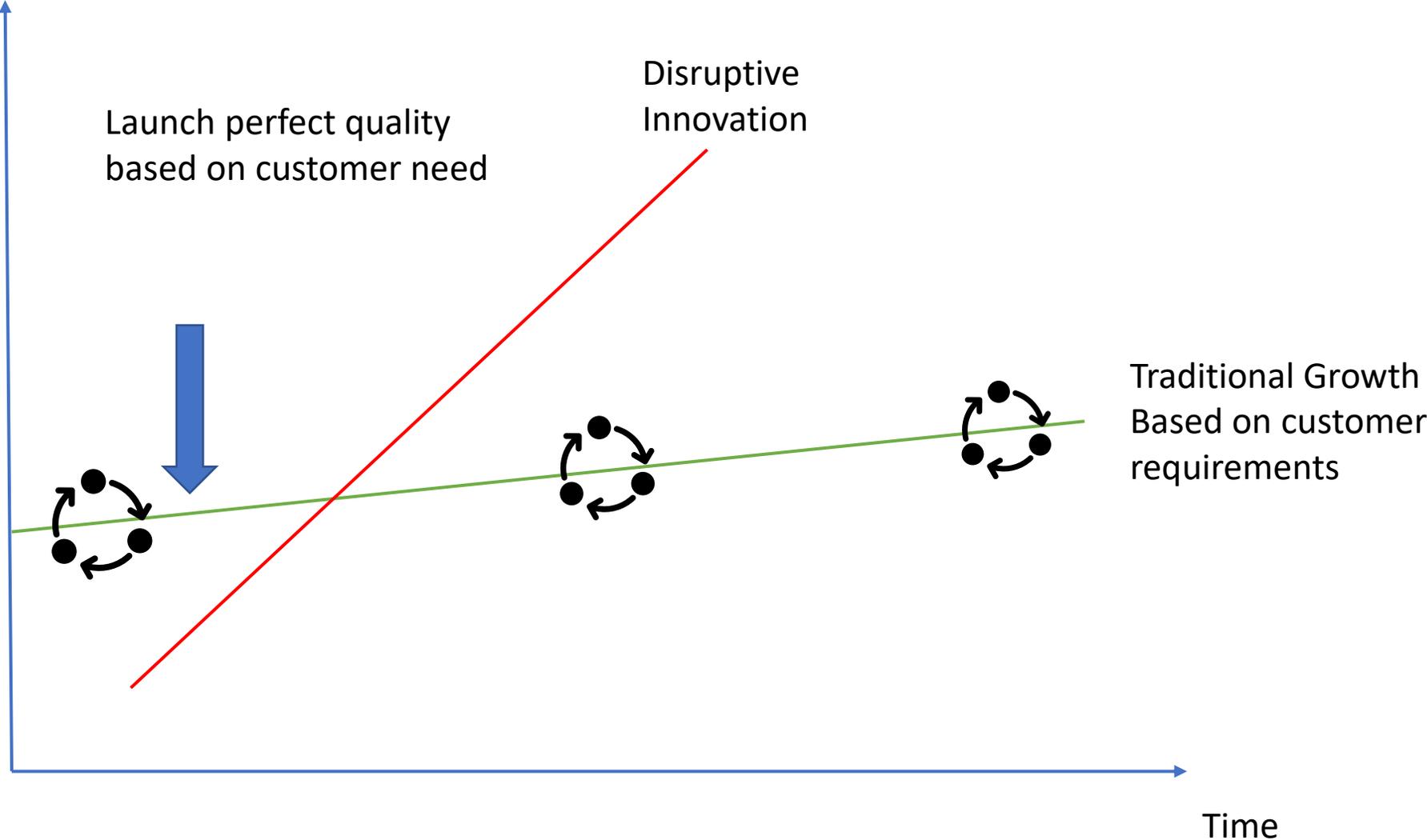
Customer Demand

Time

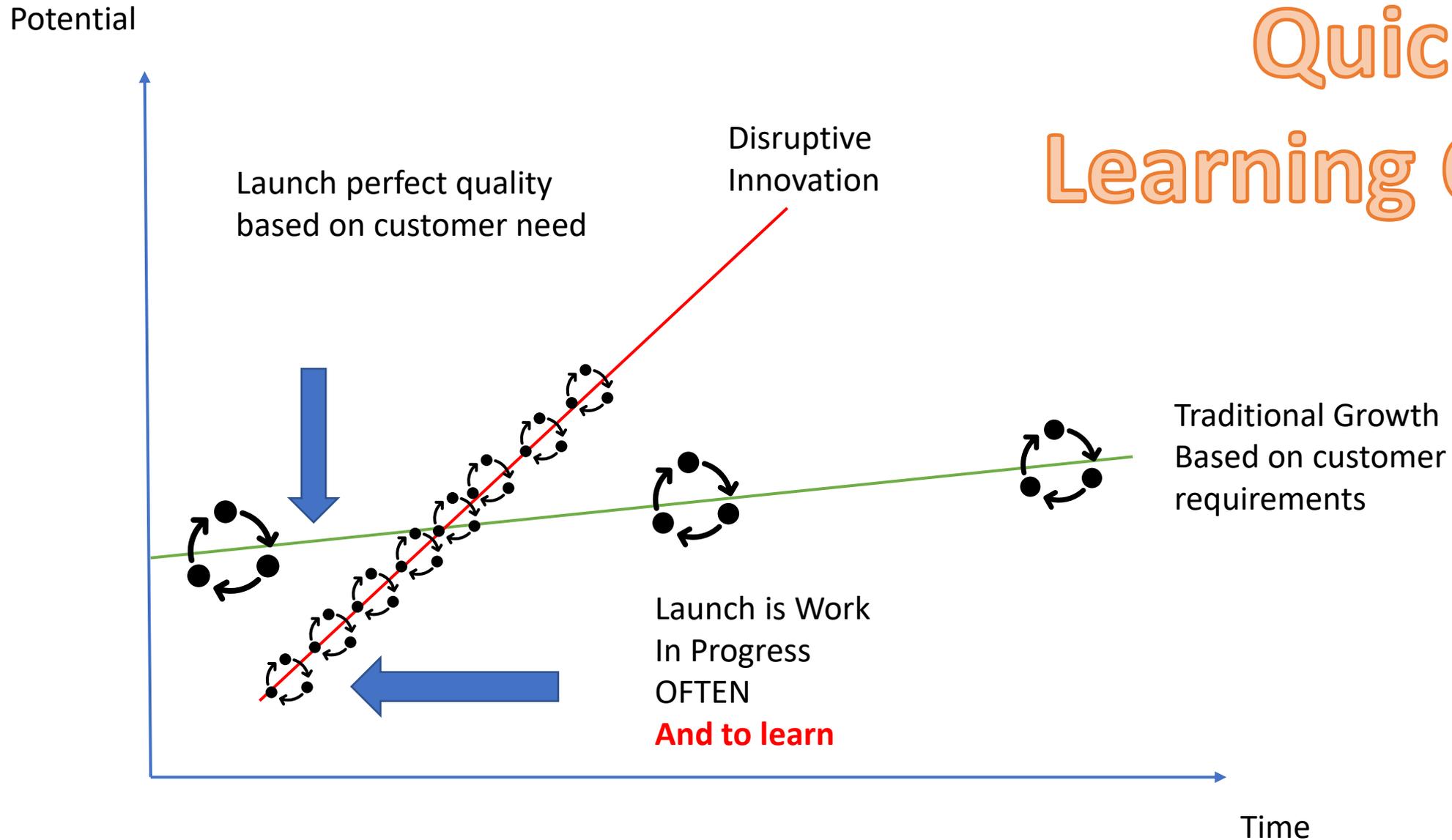
Potential



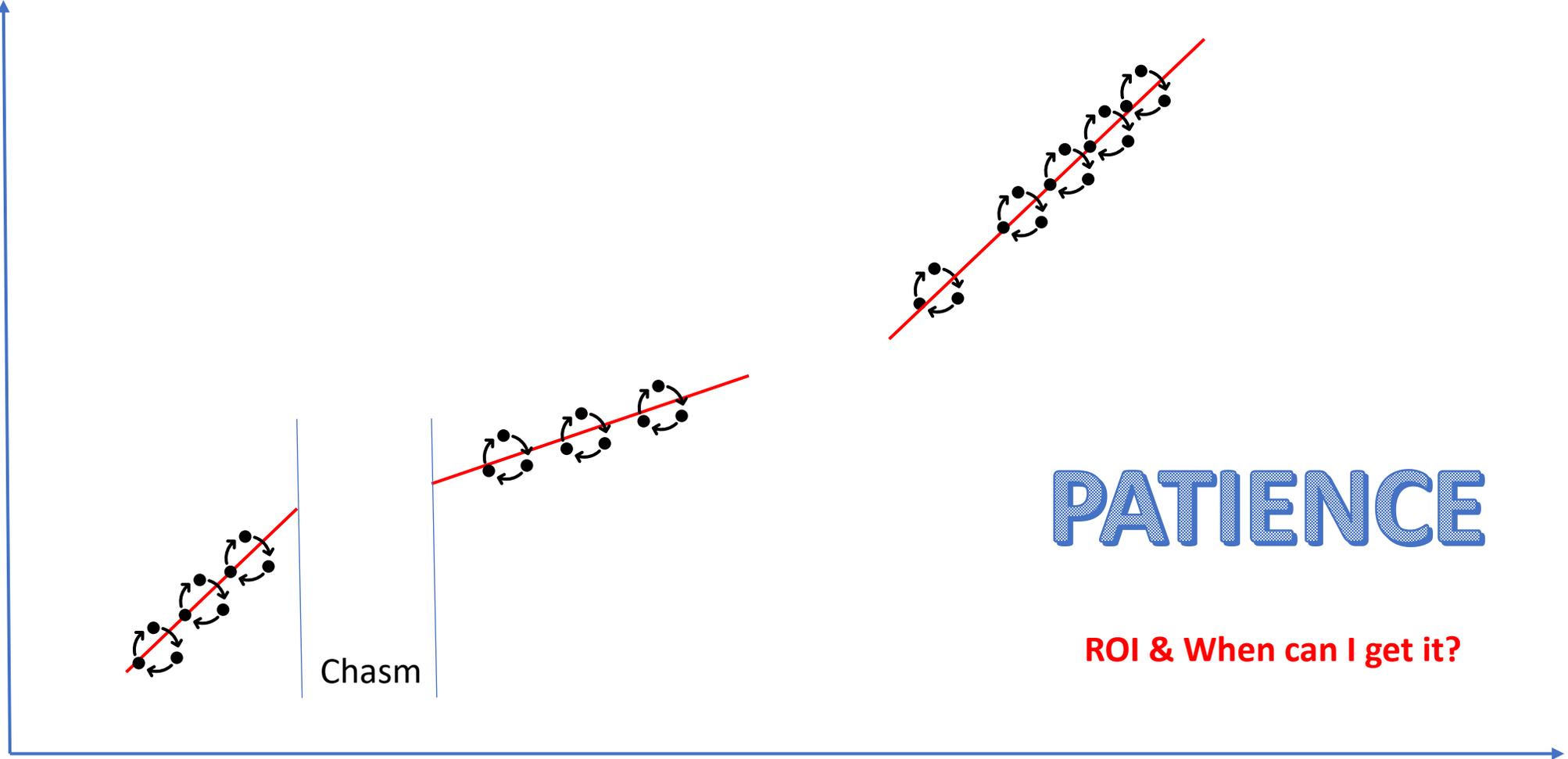
Potential



Quick Learning Cycles



Customer Value Growth



Disruptive Innovation

Chasm

PATIENCE

ROI & When can I get it?

Time

Christensen Root Cause

- **Manager's careers** are biggest motivator in pursuing innovation (Christensen)
- Managers consistently make the wrong decisions when it comes to disruptive innovation
- Good management in the current culture – they played the game the way it was supposed to be played
- Processes that reject disruptive innovation:
 - Listening carefully to customers,
 - Tracking competitors,
 - Investing resources into higher margin products (Kodak)

Innovation Principles

- How innovation works
- The MOTHER of Innovation
- Principles of Industrial Creativity
- Opportunities
- The Innovator's dilemma
- Risk Management
- Accounting
- Innovation Killers
- Interference with Lean
- Rethinking Customer Value

“Lean is Bullshit – It Kills Innovation!”

- Conference Product Development
- Everybody in the room was convinced you cannot implement lean and be innovative
- Based on 3M experience with six sigma and a GE CEO...
- Confusion about
 - Six Sigma
 - Waste
 - Standard work

Create Value for the Customer

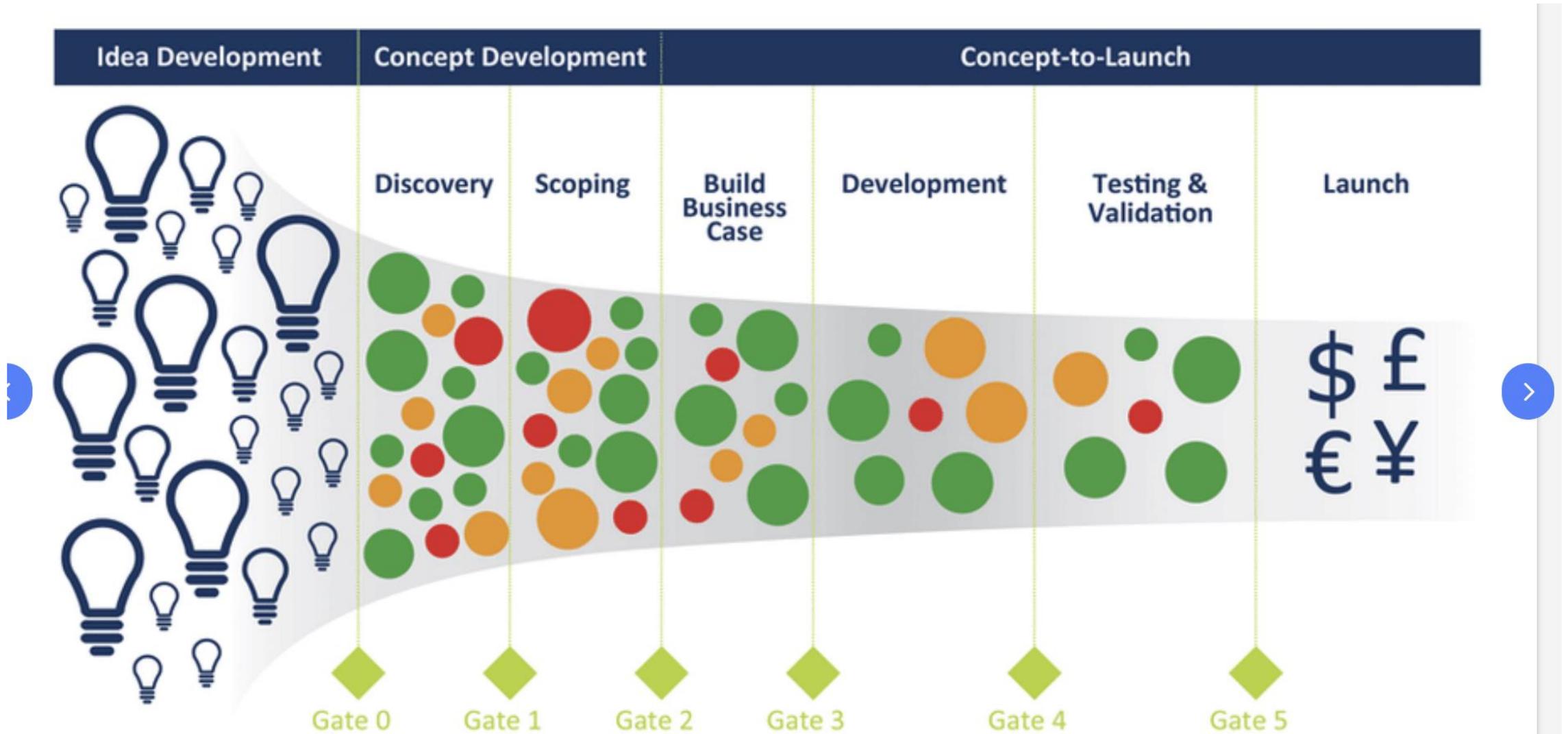
- Remains valid
- “Value” may change but people do not
- Customers will leave in an instant for the better and cheaper product
- Even established companies do radical innovation if there is an explicit customer demand

Re-thinking **value for the customer**

- The customer may not tell you
- The information may not be available in the surveys you are used to
- **Focus on opportunities not only gaps**
- **Focus on strengths and weaknesses**
- Create a better scouting/benchmark system

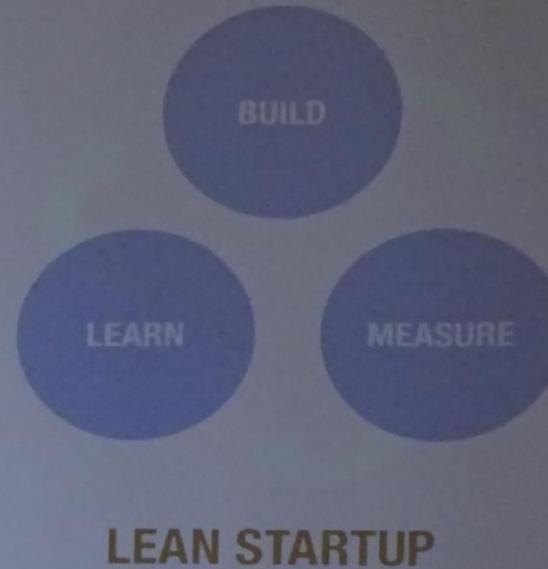
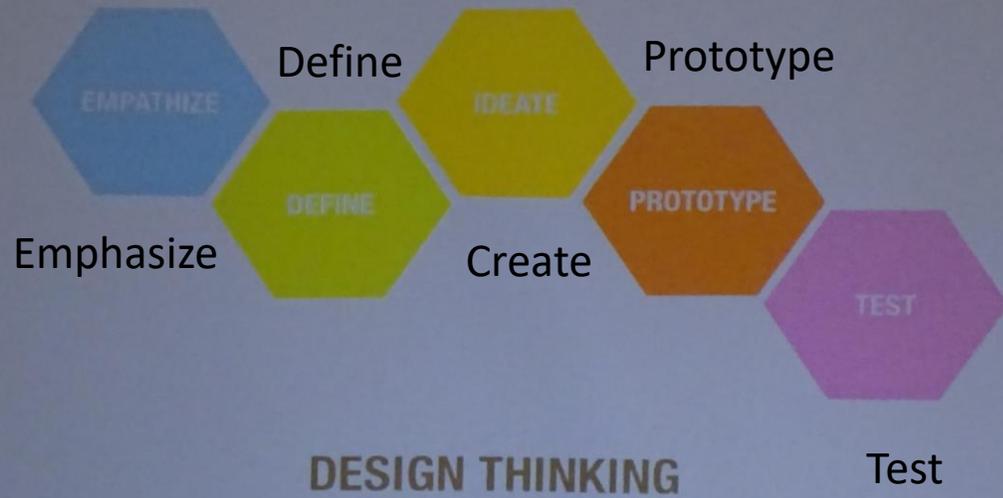
Process

- YES – Innovation can have a process (AND standards)
- Process and standards are the basis of improvement
- BUSINESS process – not just R&D
- Speed and agility matter

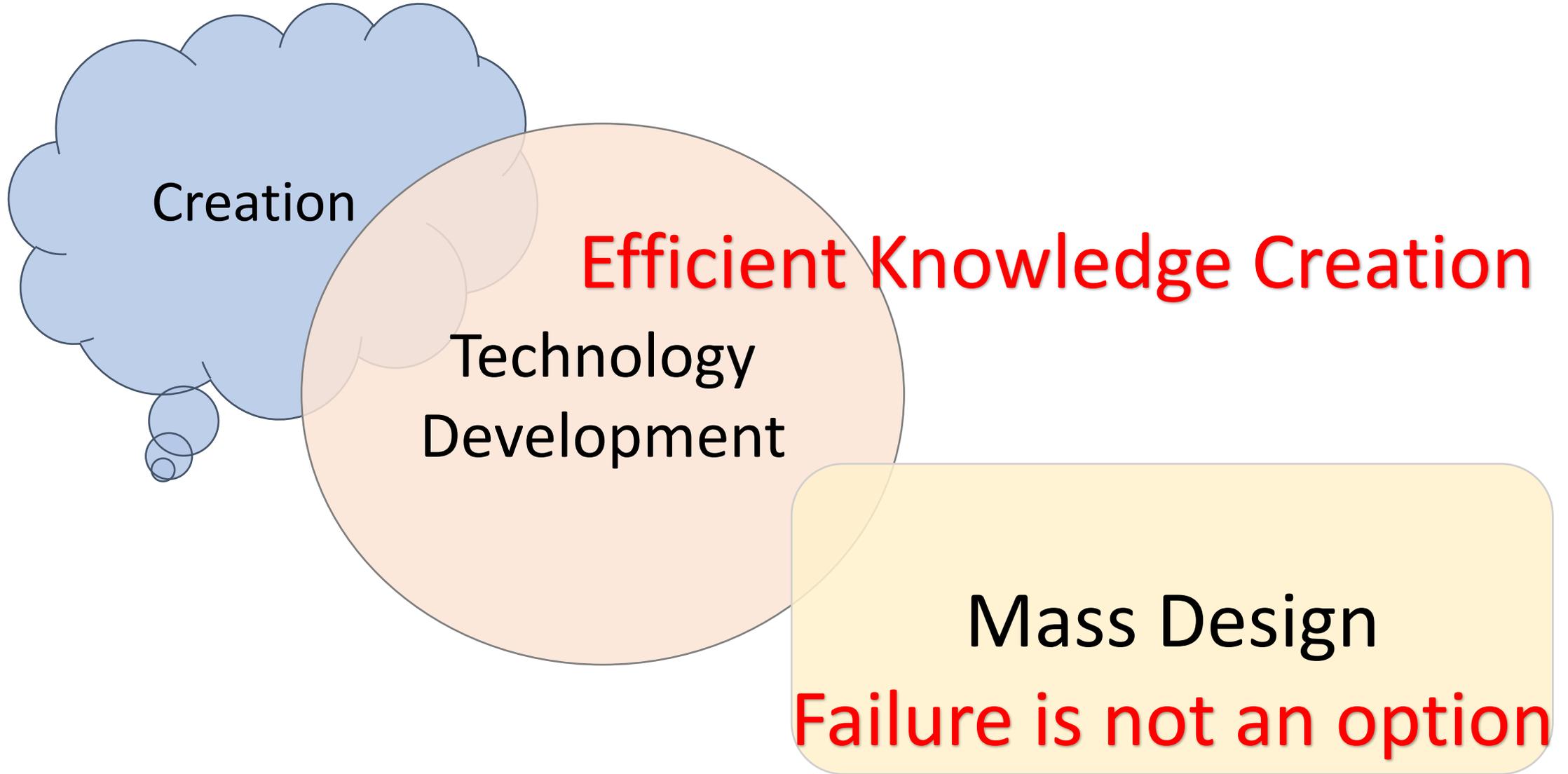


Innovation Funnel Source: www.sopheon.com/idea-concept-development/

Approach



Fail fast and often

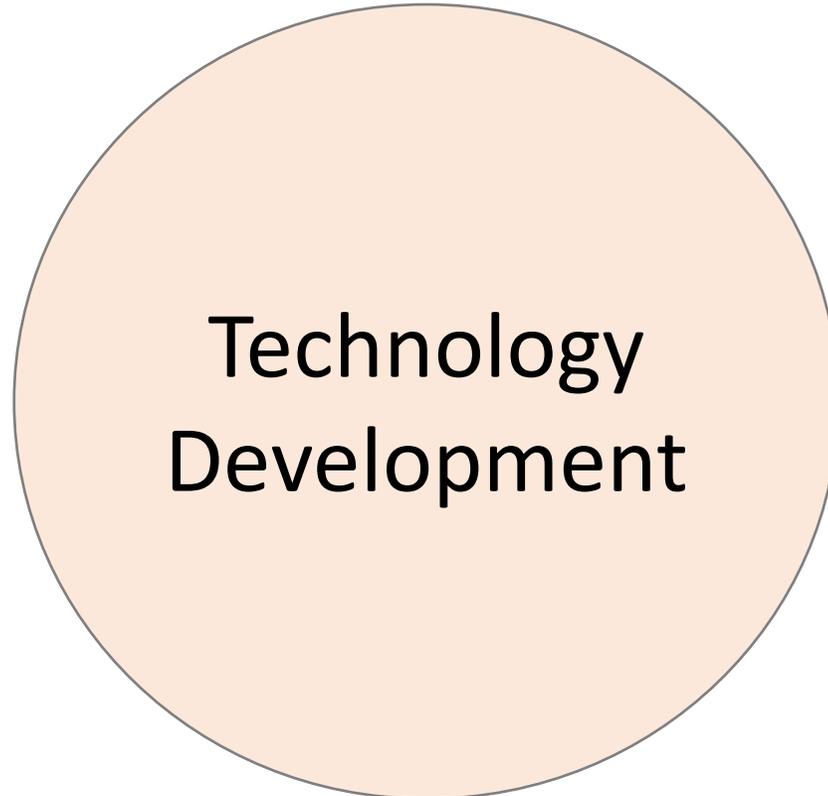


My Dream Creation Process



LEAN Technology Development

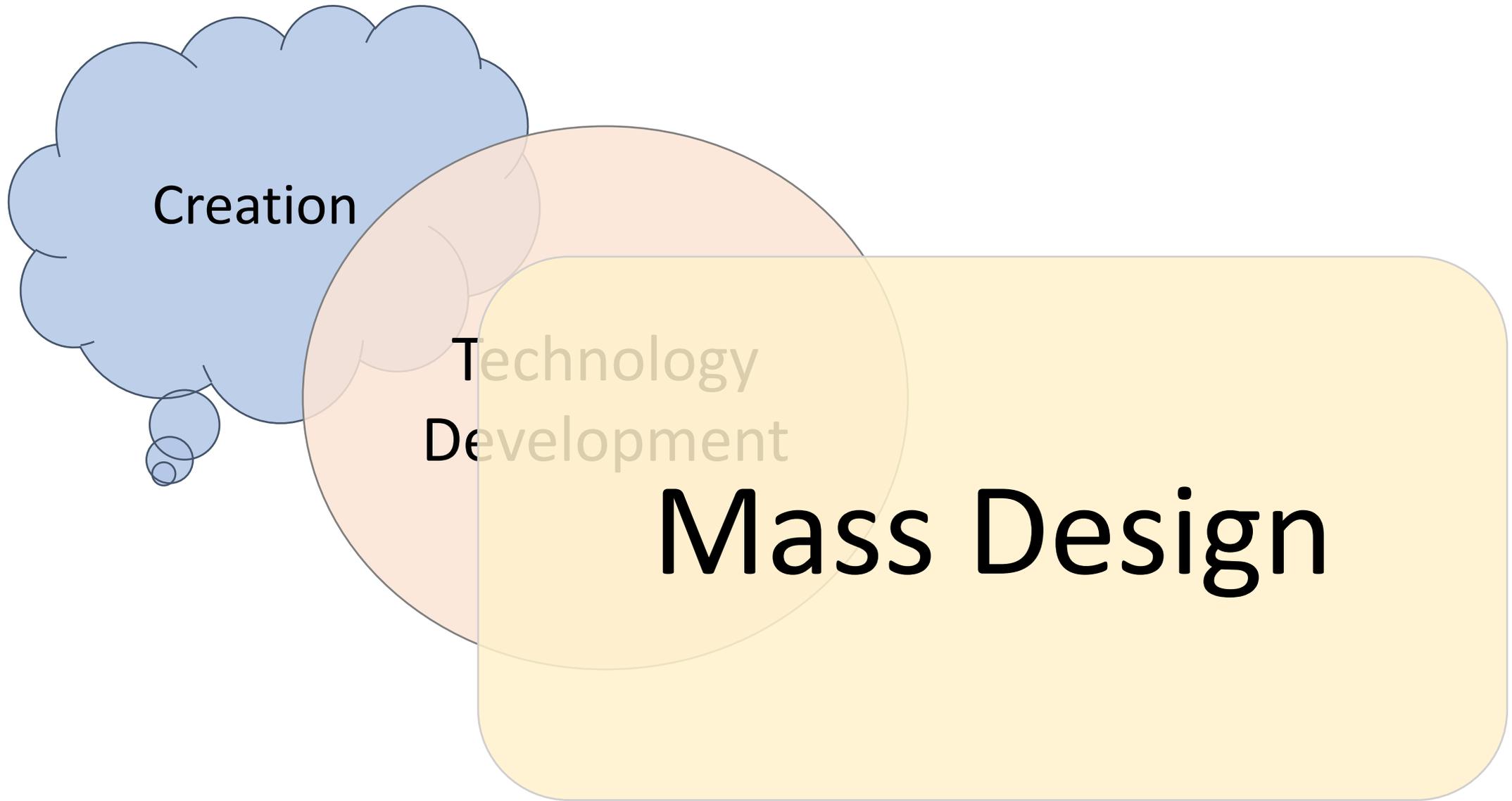
Focus on
Knowledge
Gaps – NOT
Product



ONE Practice:

Set Based
Concurrent
Engineering

**Much more efficient than
full factorial and much
more practical**



Creation

Technology
Development

Mass Design

Execution Phase

- Generates company income – and platform for launching innovation
- 70%+ of design effort
- Inspired by lean manufacturing
- Goodyear 2016 AME Excellence Award - Innovation Center
- 100% delivered on time/target – 75% faster – 3x more efficient, flat budget
- **Fast is better than slow**

Faster Project Delivery

- *First-mover benefits*
- *Tap new technology*
- *Agile capability*
- *Faster learning and process improvements*
- *Capitalize quickly on cost savings*
- *Better cash flow and faster return on investment (ROI)*
- *Motivated and engaged engineers*
- *.....*

So HOW do we create that culture of innovation?

- At the same time we create the lean culture
- Just make sure we allow for the innovation elements
- Use a good change management process
- Educate change leaders in change management (innovation included)

MY Roadmap to a Lean Culture



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After 40+ years in Innovation and Lean...

- If done right, there is a lot of synergy between a lean culture and an innovation culture
- A lean culture is an excellent foundation for successful innovation
- And like the building of the culture, the process and the people change at the same time

Thanks

If everything seems under control, you're just not going fast enough.

-- Mario Andretti

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