#### Innovation & Failure The Basis for Building the Future.

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## Resource usage.



"... the creation and adoption of more efficient and appropriate technologies is a necessary part of any solution."

Foray, Mowery & Nelson (2012, p. 1697)

#### ".... Vor dem Hintergrund großer gesellschaftlicher Herausforderungen [ist] soziale Innovation in den Blick zu nehmen."

EFI (2016, 21)

#### "... everyone realizes that the grand challenges can't be solved by one group [alone]."

Moedas (2016)



Everybody does.



What is about to come.

1. Approaching failure 2. Innovation & failure 3. Learning from failure is good 4. Learning from failure is hard 5. What can we do?



#### Failure describes activities that fall short of expected or promised outputs or outcomes.



# Is failure really the mother of innovation?

Sloan

## Failure and innovation

Analysis of more than 1,200 German innovating firms

Correlation of failure and innovation is inverted u-shaped

 If the failure rate < 20%, failure and innovation are positively related:

the higher the failure rate the more innovative the firms are.

 If the failure rate > 20%, failure and innovation are negatively related :

the higher the failure rate the less innovative the firms are.

#### Learning is crucial.

We attribute the findings about the positive effcts to the fact that failure is a good opportunity for learning.

Learning from failure is even more instructive than learning from success.  If the failure rate < 20%, failure and innovation are positively related:

the higher the failure rate the more innovative the firms are.

 If the failure rate > 20%, failure and innovation are negatively related :

the higher the failure rate the less innovative the firms are.

Ebersberger & Petersen (2016)

# Learning from faiureis gooe.



Sometimes new perspectives are more powerful than just being smart.

Astro Teller

#### "Fail fast and cheap. Fail often. Fail in a way that doesn't kill you."

Seth Godin

#### "If you want to succeed, double your failure rate."

Thomas J. Watson



Failure is not the secret sauce for success.

Learning is the secret sauce that might turn failure into success.



# Learning from faiureis hard



# Biases lead to wrong decisions

- Overconfidence
- Confirmation bias
- Illusion of predictability

# How does it feel to be wrong?

# It feels like being right



#### Why am I right and others wrong?

- Ignorance
- Idiocy
- Evil





# We all have the capacity to skrew up.

St. Augustin



Failure attracts attention within the organization.

### Failure causes negative emotions.

#### These negative emotions are called grief.

(Shepherd 2003)

# Failure causes grief.

Because it questions competence, relatedness, and autonomy. For coping with grief there are two approaches

Grief orientation
 Restoration orientation

## Grief orientation

# 1. Think about the events leading to the failure

# 2. Build a rationale why this happened





## **Restoration orientation**

 Distraction from failure = not thinking about it

2. Proactivity for second level stressors

### **Best results**



Oscillating between grief orientation and restoration orientation.

# Dilemma: Feeling grief hampers learning. What can we do?

# Three Approaches:

Failure part of the culture
 Normalizing failure
 Emotionally capable organization

### Failure as part of the culture

#### 1. Make it safe to fail

- 2. Make failure the path of least resistance
- 3. Enthusiastic scepticism

## Normalizing failure

1. Failure is part of what you do.

2. Desensitize your employees to failure and rejection.

### **Emotionally capable organization**

- 1. Establish rituals
- 2. Provide social support
- 3. Learn to oscillate
- 4. Be humble and appreciative towards failure

# Zotter's graveyard of ideas.

Zotter manufactures chocolates with the most delicious fillings.

- Failed ideas (e.g. Café, Flag-Ship)
- Failed receipes & flavors (e.g. string bean & onion)
- Successful but replaced flavors (e.g. pineapple & pepper)
- Exhumation is possible (pink coconut & trout marshmallow)



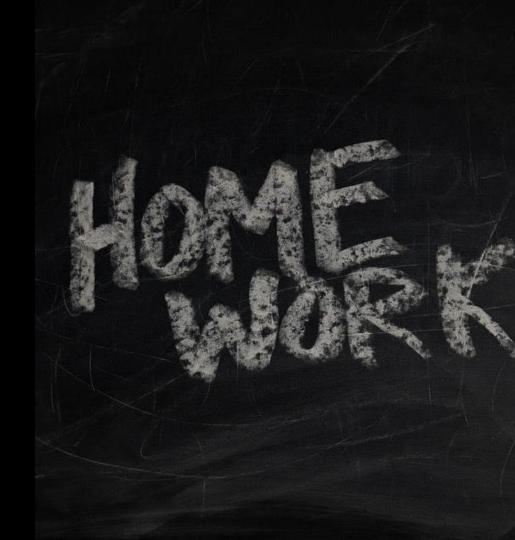


- Challenges of the future require innovative solutions.
- Innovation activities have the potential for failure.
- Failure is a great opportunity for learning.
- Failure causes negative emotions.
- Your organization can only learn from failures when it can handle those negative emotions.

# Innovative organizations have to be more appreciative and humble towards failure!

As leaders of those organizations take the first steps right away!

Be appreciative and humble towards failure!



# Your CV of failure

- Retreat to your office
  Write down a CV with the failures you experienced and what you learned.
- 3. Every now and then: Read it.



#### Let me know how you are doing with your CV of failure.

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The megatrends are inspired from https://www.gdch.de/fileadmin/downloads/Netzwerk\_und\_S trukturen/Fachgruppen/Vereinigung\_fuer\_Chemie\_und\_Wir tschaft/va\_februar\_2013/2\_eberl.pdf

The information about Zotter's graveyard is based on personal communication with Zotter.

#### The introductory quotes are from

Foray, D., Mowery, D. C., & Nelson, R. R. (2012). Public R&D and social challenges: What lessons from mission R&D programs? Research Policy, 41(10), 1697–1702. doi:10.1016/j.respol.2012.07.011

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http://www.nature.com/news/europe-s-research-commissioner-lays-out-his-ambitions-1.17165

## The research about the correlation of innovation and failure is from Ebersberger & Petersen.

Ebersberger, B., & Petersen, S. S. (2016). Fail(ed) to succeed. In Building bridges Proceedings of the FFH. Vienna.

Some ideas about making failure part of culture are from Astro Teller's TED Talk (https://www.ted.com/talks/astro\_teller\_the\_unexpected\_be nefit\_of\_celebrating\_failure#t-916932). So is the quote.

The research about the correlation of innovation and failure is from Ebersberger & Petersen.

Ebersberger, B., & Petersen, S. S. (2016). Fail(ed) to succeed. In Building bridges Proceedings of the FFH. Vienna.

# The ideas about the emotional effects of failure are taken from Dean Shepherd and his collaborators' work.

Ucbasaran, D., Shepherd, D. A., Lockett, A., & Lyon, S. J. (2013). Life After Business Failure : The Process and Consequences of Business Failure for Entrepreneurs, 39(1), 163–202. http://doi.org/10.1177/0149206312457823

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#### The discussion of wrongness is inspired by Kathryn Schulz.

Schulz, K. (2011) Being wrong: Adventures in the Margin of error. New York: HarperCollins.

Failure as the mother of innovation is a phrase taken from <u>http://www.innovationmanagement.se/imtool-</u> <u>articles/failure-is-the-mother-of-innovation/</u>. And so is the quotation.



MCI: by MCI

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#### Images.

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#### Images.

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Shattered Glas 2: http://maxpixel.freegreatpicture.com/Shard-Cut-Glass-Breakage-Broken-Sharp-Glass-1355707

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