CASE STUDY

Industry 4.0 & Technology
Physical and Mental Barriers

Reinhold Gietl
Factory Manager
Pilkington Deutschland AG – NSG Group
Werk Weiherhammer
NSG Group today

- The Group is one of the world's leading manufacturers of glass and glazing products.
- Strategic Business Units:
  - Architectural (glass for installation in new and refurbished buildings and for Solar Energy applications)
  - Automotive (Original Equipment and Aftermarket Replacement)
  - Technical Glass (wide range of value-added products including displays, optoelectronics and glass fiber products)
- NSG manages 26 float lines worldwide
- Consolidated Group Revenues of ¥ 580,8 Mrd. (FY2017)
- Principal operations in 28 countries, with sales in 105 countries.
- Headquarter in Tokyo, Japan
- Approximately 27,000 employees globally
- Our Architectural and Automotive products are operated under the trademark “Pilkington”

A global leader in Flat Glass
Historical Background

Pilkington

- **1826** - established in St Helens as a partnership
- **1849** - converted to private company, Pilkington Brothers
- **1959** - invented the Float Process
- **1970** - listed on London Stock Exchange as Pilkington plc

- **2006** - acquired by NSG (through NSG UK Enterprises Ltd)

NSG

- **1918** - established as America Japan Sheet Glass Co., Ltd
- **1931** - changed company name to Nippon Sheet Glass Co., Ltd.
- **1950** - listed on Tokyo Stock Exchange
- **1990** - invested in Libbey-Owens-Ford Co
- **2000** - initial investment in Pilkington

- **2006** - acquired all outstanding equity of Pilkington plc

Acquisition of Pilkington plc in 2006
Weiherhammer Plant

Arose from the former DETAG (Deutsche Tafelglas AG), which goes back to 530 years of glass manufacturing in the area of Weiden. (as of March 2017).

Merged with the DELOG (Deutschen Libbey Owens GmbH) to the Flachglas AG, later the Pilkington Deutschland AG.

Foundation (Pilkington Plant Weiherhammer)

• Start of clearing 1977
• Start of construction work 1978

Current facts

• 480 employees
• thereof 30 trainees
Weiherhammer – Upper Palatinate in North of Bavaria
References

Apple-Campus 2, Cupertino

→ „Spaceship“ with $260,000 \text{ m}^2$ and 1,6 km outer circumference

→ Glass length up to 15m
References

Reichstag, Berlin

Product
Pilkington Optiwhite™
Pilkington Pyrostop®
Pilkington Pyrodur®

Post Tower, Bonn

Product
Pilkington Optitherm™
Pilkington Optiwhite™
Introduction

- What do I **not** want to talk about?

  - [What is the Internet of Things (IoT)?](https://www.techopedia.com/definition/35801/iot) - Definition from Techopedia
  - [IoT | Definition of IoT in English by Oxford Dictionaries](https://www.oxforddictionaries.com/definition/english/iot)
  - [Internet Of Things | Definition of Internet Of Things by Merriam-Webster](https://www.merriam-webster.com/dictionary/internet-of-things) ...

- What do I want to talk about?

  The only way to successfully overcome the challenge and the barriers associated with the IoT is through our people, their motivation and ownership. We have to avoid them stating:

  „*Please just let us do our job!*“
IoT in Glass Making

• Change from Emotion, Impression and Feeling to facts and figures (e.g. acoustic cutting)

• > 1000 points of measurement per line (temperatures, flows, pressure etc.)

• Change from pen recorder to digital monitoring (identifying trends, basis for FMEA etc.)

• Mental barrier (positive historical evidence)
IoT – What is new?

• Every year and again
  • New management strategies, management philosophies, management ideas …
  • All to develop things and bring the organization forward

• But
  • Not very often brought to an end
  • The bigger the organization – the worse

• Shopfloors comment:

„Please just let us do our job!“
IoT: Is it really new?

Lean Management, KVP, TPM, Quick Kaizen, Team Work etc. are all changes in systems or working organizations, to improve performance

and IoT

„Cui Bono“

Examples:

- Importance (telephone, radio, mobile phone)
- Right people – trust and mistrust
- Make yourself redundant
IoT: Is it really new?

- Definition of Quality according to ISO
- Pragmatic Definition
- Difference in Customers from Architectural – Automotive – Solar
- cultural change example Solar Customer
Communication is Key

90 % of our problems are communication problems

And the remaining 10 %?

Just because we don’t talk to each other
Summary I

- In many organizations every now and again we can find new management strategies, - philosophies and - ideas.
- Development is the intention. Very often those activities are non completed, before new ones are going to be implemented and often seen more as a “load” rather than “enrichment”
- The right style of management is key in any area of change together with ownership and a fully committed team, based on culture and behaviour
- Cultural Change is a living and ongoing process, driven by the management to achieve a structured approach to change culture, thinking and behaviour in an organization – a paradigm change
Summary II

• IoT contains a flood of information and challenges us all already now

• We have to overcome all hurdles and obstacles better as we did in the past by involving our people

To avoid them saying:

“Just let us do our job”
THANK YOU FOR YOUR ATTENTION!