PRODUCTION@BMW

DR FRANZ DECKER
HEAD OF PRODUCTION NETWORK STRATEGY.
PREMIUM OEMS HAVE TO MANAGE SOPHISTICATED CUSTOMERS, INDIVIDUALIZATION OF PRODUCTS AND DYNAMIC MARKETS.

1. Sophisticated customers and quality claim.

2. Increase of number of derivatives and customizing elements.

3. Uncertainty because of volatility regarding customer / segment structure, regional demand and market behavior.
BMW GROUP SUCCESSFULLY APPLIES FOUR CORE ELEMENTS TO ITS ONE GLOBALLY ALIGNED NETWORK.

BMW Group is best in managing customers' individual needs in production

Our instruments:

A  Flexibility management
B  Complexity management

BMW Group balances global growth and optimizes risks.

Our instruments:

C  Production follows market
D  Management of cost & capital structure

...and all as ONE GLOBALLY ALIGNED NETWORK
WE MANAGE OUR FLEXIBILITY WITH VARIOUS INSTRUMENTS AT NETWORK, STRUCTURE AND EMPLOYEE LEVEL.

### FLEXIBILITY MANAGEMENT

#### BMW Group success stories

- Fast reaction to global automotive crisis and Euro crisis
- Production and sales volume at new record in 2014
- Stable achievement of margin targets
- No production stop after Japan Tsunami
- Integration of BMW i production
- Short term reaction swap of Russia production volume to US

#### Levers

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MODULAR PRODUCTS, LEAN SYSTEMS AND EFFICIENT PROCESSES ENABLE STRONG COMPLEXITY MANAGEMENT.

COMPLEXITY MANAGEMENT

BMW Group success stories

• Broad market coverage through high number of derivatives

• Almost endless number of options and equipment variants, i.e. BMW 7 Series at Plant Dingolfing, with theoretically up to $10^{32}$ possible configurations

• 165 customer relevant options

• BMW Individual process and broad brand spread

• Changes up to six days prior to the start of assembly possible

• Built-to-order-approach

• Launch as new normal

Levers

- Modular product & production strategy
- Integrated product & production process design
- Standards & lean production
- Customer oriented retail & production process

Source: BMW

Production@BMW Group, March 2015
INVESTMENTS OUTSIDE EUROPE AND THIRD PARTY MANUFACTURER ARE STRATEGIC ELEMENTS FOR BALANCED GROWTH.

Our activities:

- Production follows market
- Recent and ongoing investments outside Europe:
  - All new production plant roll-out in San Luis Potosí (150,000 units, SOP 2019)
  - SOP in Brazil Araquari plant in 10/2014 (30,000 units, MINI countryman, BMW 1series 3dr/5dr, 3ser. Sedan, X1, X3)
  - Production increase in Spartanburg (X7, X4, 800 new jobs)
  - Extension of existing China facility (Dadong) (Expansion to six models (from 3 currently))
  - New engine plant in China (Tiexi)
- Third party manufacturer as strategic element for flexibility and profitable growth

Production@BMW Group, March 2015

Source: BMW
OUR MOTIVATION FOR INVESTMENT INTO NAFTA US IS MARKET PENETRATION, RISK HEDGING AND BRAND SHAPING.


CAGR

+7%

Sharp increase of sales after local SOP

SOP


Invest NAFTA – USA – Spartanburg

Market penetration of growing US market.

Dollar hedging for financial optimization.

Shape customer brand awareness by being cultural trendsetter.

South Carolina: Good business environmental and infrastructural parameters; beautiful, climate pleasant state.

Plant Spartanburg as X-hub for the production network; biggest automotive export plant / company within the US.

Source: BMW

Production®BMW Group, March 2015
FURTHER INVESTMENTS INTO MEXICO AND BRAZIL ARE BASED ON SALES AND COST ARGUMENTS.

Further NAFTA market penetration due to increasing sales figures.

Realization of production cost advantages.

Extension of production base.

Marketability to South American market.

Local content due to protectionism and high import taxes.

Exploitation of market by other OEMs.

Start of site preparation

Assembly start in 10/2014
OUR CORE ELEMENTS ARE EVEN VISIBLE AT EVERY STEP OF OUR VALUE CHAIN.

FLEXIBILITY MANAGEMENT

BODY SHOP
- Up to 9 derivatives per line\(^1\)

PAINT SHOP
- Continuous innovation to meet sustainable production claim (e.g. IPP\(^2\))
- Use of high-tech, sustainable finish

SUSTAINABILITY

INNOVATION

ASSEMBLY
- Smart automation of line production
- Productivity and quality increase through human-robot-collaboration

LEAN PRODUCTION

CAPITAL PRODUCTIVITY

PRESS SHOP
- “Buy” decision to ensure best capital efficiency

1) Including M derivatives; 2) Integrated Paint Process

Source: BMW Production@BMW Group, March 2015
BMW GROUP IS BEST PREPARED TO APPLY FUTURE TRENDS AND TO MEET FUTURE RISKS IN PRODUCTION.

- **MARKET/CUSTOMER**
  - **FLEXIBILITY**
  - **GLOBAL BALANCED GROWTH**
  - **VALUE ORIENTED PRODUCTION SYSTEM**

- **TECHNOLOGY**
  - **AUTOMATION EXPERIENCE**
  - **PROVEN INNOVATIVE TRACK RECORD**

- **TRENDS & RISKS IN FUTURE PRODUCTION**
  - **GLOBAL SUPPLY CHAINS**
    - Outsourcing to low-cost areas.
  - **CONNECTIVITY & INDUSTRY INTERNET**
    - New data processing and usage.
  - **TECHNOLOGICAL CHANGES**
    - Increasing speed of technological changes
  - **TRADE REGULATIONS**
    - Increasing localization regimes.
  - **SUSTAINABILITY**
    - More environmentally friendly production and vehicles.
  - **VOLATILITY**
    - Changing customer/segment structure, regional demand and market behavior.
  - **GLOBAL SUPPLY CHAINS**
  - **VALUE ORIENTED PRODUCTION SYSTEM**

Increasing localization regimes.

Source: BMW
SUMMARY:

BMW Group production acts as one global network with smart allocation of value creation.

We apply flexibility and complexity management to efficiently provide individualization for our customers.

Success factor is coherence of architecture, sourcing and production at all levels.

Mexico & Brazil will add strong pillars for our production network to foster sales.

BMW Group is best prepared to master future trends and to meet risks in production.