

Page	Content „LEAN PRODUCTION SYSTEM / (TPS)“
1.	Lean Excellence : Basics for Lean Production Systems (LPS)
2.	Content
3.	Where are you as participant ?
4.	Story line 2-Day Lean Journey
5.	A common understanding with the Director Operations (Lean Sponsor)
6.	Lean Excellence principles
7.	Lean Excellence Principles (Short form)
8.	Implementation of a strategic transformation
9.	Lean Excellence Framework
10.	Lean Excellence Framework
11.	Historic development towards Lean Management
12.	Challenges for the Japanese Automotive Industry
13.	BURNING PLATFORM FOR THE JAP. AUTOMOBILE BUILDERS
14.	IDEA/CONCEPT FROM JAPAN / MANAGEMENT FROM THE USA (MIT)
15.	Definition of Lean Management
16.	Principal elements of Lean Management to define a Lean Culture
17.	Principal elements of Lean Management Culture (Detailed)
18.	Effectiveness upon Business Goals/Objectives
19.	Importance of Lean Principles
20.	Lean Principles
21.	Lean Principles: Value is what the customer is willing to pay for

22.	Lean Principles: The value stream is the process to create value
23.	Lean Principles: Work smarter, not harder ! (more efficient and effective)
24.	Lean Principles: Continuous, smooth (stabilized) Flow
25.	Lean Principles: Customer determines flow by his customer demand (Pull)
26.	Lean Principles: Strive for Perfection
27.	Lean Principles in a structured overview
28.	Lean Management and Production Systems = Lean Excellence
29.	Lean Excellence – Basics for Lean Production Systems
30.	Effectiveness of a Lean Production System (Lean PS)
31.	What do we have to do in order to make a lean PS a success ?
32.	Goals for this training module : Effectiveness of a Production System
33.	What are the goals/objectives of a Production System (PS) ?
34.	A Production System requires investments
35.	What are the success factors for successful lean production systems !
36.	The Design Process ensures the success of your Production System
37.	Description of the content (1)
38.	Description of the content (2)
39.	Basic procedure to ensure the effectiveness of a production system
40.	Effectiveness assurance for a production system
41.	Block schematic to identify the true potentials

42.	Phases of the Production System Design
43.	Methodology to realize a Production System Design (Current State Analysis)
44.	Pragmatic realization of the Requirement Analysis (AS-IS) (Tools)
45.	Step 1 : Integration of Management Goals into the Lean Project Organization
46.	Step 2 : Definition of the Project Organization (Process owner)
47.	Step 3 : Directive for a Lean Production System / Lean Principles
48.	Step 4 : Categories for Measurables and Lean Metrics
49.	Step 5 : Analysis of the organizational business processes
50.	Step 6 : Shopfloor Assessment of manufacturing potentials
51.	Step 7 : Realization of a Value Stream Analysis
52.	Step 8 : Realization of a Constraint Analysis and Identification of the constraint
53.	Step 9 : Analysis and Definition of operational and strategic metrics
54.	Step 10 : Analysis-based identification of organizational potentials
55.	Step 11 : Analysis-based identification of technical potentials
56.	Step 12 : Analysis-based identification of economic potentials
57.	Step 13 : Determination of objective-driven Modules (Methods, Tools)
58.	Step 14 : Configuration of the factory-specific

	Production System (PS)
59.	Step 15 : Definition and establishment of Own Production System
60.	Step 16 : Planning for the Pilot-Installation of the Lean Production System
61.	Step 17 : Pilot-Implementation of the Lean Production System and Review
62.	Step 18 : Installation of the relevant process metrics (KPIs) and introduction
63.	Step 19 : Management-Review of the Pilot-Area Lean Production System
64.	Preparation, Analysis, Design and Implementation as project phases
65.	Feedback into the strategy
66.	Diagnostic Points (Sensors) for Production System Design and -Review
67.	Lean Excellence – Basics for Lean Production Systems
68.	Content
69.	What is a Production System, which definitions are available ?
70.	What do the employees see ?
71.	Why do we need a System-Approach for a successful Lean-Implementation ?
72.	Lean Excellence: Implementation of Business Objectives with the Employees
73.	The basic blocks of the Toyota Production System and variants
74.	Which types of Production Systems exist; MY-PS ?
75.	From a strategic perspective a Production System (Proposal) is...

76.	What is our Lean Excellence Architecture ?
77.	Our Lean Excellence Architecture for the System and underlying Key Processes
78.	The industrial Architecture and the Seminar - Leaders
79.	The visual code for the Lean Excellence Architecture (System Color Code)
80.	What is the benefit of the architecture ? Order is also Management's issue !
81.	How can we organize a simple communication to the employees ?
82.	The underlying control system (Feedback) of the Lean Excellence Architecture
83.	The System and the Seminar - Chapters
84.	New Job-Titles in the Global Lean Community
85.	Practical Highlights of this Lean Excellence Architecture
86.	Lean Excellence – Basics of Lean Production Systems
87.	The Project Organization for the Roll-Out of a Lean Production System
88.	After the strategy we need a Project Plan
89.	3 Key processes form and define the System
90.	Milestone Results along the Roadmap Lean Production System
91.	Project plan for the Production System (Top-Down)
92.	Project Structure Plan (PSP): Lean Mission
93.	Project planning : Lean Management Process
94.	Project planning : Lean Design (Waste Analysis)
95.	Project planning : Effective Work Groups and Trainings
96.	Internal Project Organization (providing lean implementation expertise)
97.	Operational Diary (Excerpt, example)

98.	Operational Diary (Excerpt, example)
99.	Execution of Status-Reviews during Project
100.	What is the key criteria for success ?
101.	What can be achieved ?
102.	Now we involve the site management (project on site)
103.	Operational Design of a Production System
104.	Content of this module
105.	What is a production system? – A definition
106.	The seminar "Lean Production System"
107.	What do we want to achieve ?
108.	The first draft of your own production system
109.	The "lean map"
110.	Classification of the modules, methods and tools
111.	Short summary and benefit
112.	Basic structure of a production system
113.	Fundamental elements of a production system
114.	Central benefit of a 'lean production system'
115.	The purpose of a production system
116.	A reminder of the 7+1 types of waste
117.	What is the general meaning of a system?
118.	What is a production system ?
119.	The difference to the classical production drafts
120.	The architecture of a production system ("pyramid image")
121.	Summary
122.	To become lean – The true hero
123.	To become lean..... The initial situation!
124.	To become lean..... A vision
125.	To become lean..... A strong goal !
126.	To become lean..... Specific and measurable aims

127.	To become lean..... The strategy to achieve the aim
128.	To become lean..... A clear cut, reviewable plan
129.	To become lean..... Review and support
130.	To become lean..... A change process!
131.	To become lean – The generic management process
132.	The Management process – From the vision towards the objectives
133.	The Management process – The vision - Content
134.	Development of the vision/meaning
135.	Development of the vision : rules-of-thumb
136.	Development of the vision/approach
137.	Development of the vision/approach
138.	Development of the vision/Meaning for the Objective Setting
139.	Development of the vision/example
140.	Monitoring of and commitment to objectives
141.	The development of objectives - content
142.	The development of Goals & Objectives / Importance
143.	The development of Goals & Objectives / Types
144.	The development of Goals & Objectives / Types - Examples
145.	The definition of the Objective – target settings / Principles
146.	The development of the Goals & Objective / Workshop
147.	The development of the Goals & Objective / Workshop
148.	The development of the Goals & Objective / an Example
149.	Tracking the success with the scorecard
150.	Metrics and measurables - content
151.	Measurables / Importance

152.	Measurables and Objectives
153.	Requirements for measurables
154.	Rules for the selection of metrics
155.	Determination of measurables / Information Systematic
156.	Determination of targets
157.	Determination of the Targets / Source
158.	Determination of Targets / Description
159.	Determination of the Targets / Scorecard
160.	Determination of the Targets / Scorecard / Visualization
161.	Determination of Targets / Review
162.	The Management process – Strategy
163.	The management process : strategy content
164.	Strategy, the logical sequence of steps
165.	Strategy is – from AS-IS state to NEW target state
166.	Strategy -- Example
167.	Strategy, a teamwork
168.	Strategy -- Measure determination
169.	Strategy -- measure determination
170.	Strategy -- measure determination
171.	Strategy – strategic action collection
172.	Strategy -- measure sequencing
173.	Strategy -- principles : Objectives, continuity, standards, review & support
174.	Strategy -- principles : objectives-driven
175.	Strategy -- principles : continuity
176.	Strategy -- principles and standards
177.	Strategy / Details
178.	Strategy
179.	Elements of an intelligent production system
180.	Master plan - content

181.	What is the master plan?
182.	What is the master plan?
183.	Master plan approach
184.	Masterplan - Approach
185.	Masterplan - Approach
186.	Masterplan - Approach
187.	Masterplan - Approach
188.	Masterplan – Check the status and visual communication of the status
189.	Masterplan principles and most frequent mistakes
190.	Masterplan principles and most frequent mistakes
191.	Masterplan principles and most frequent mistakes
192.	Masterplan principles and most frequent mistakes
193.	The Management process – Review
194.	Review - Content
195.	Review and Support
196.	Review and Support
197.	Review and Support - Principles
198.	Review and Support - Principles
199.	Review and Support - Principles
200.	Review and Support -- Principles
201.	Structure of a Supporting Organization
202.	The supporting organization - Content
203.	The thinking production system
204.	Importance of the supporting organization for a production system
205.	Steering committee
206.	Facilitators (process supporter; lean implementation specialist)
207.	Coaches (Management links to the shopfloor teams)

208.	The economic installation of a Production System
209.	After the organization of local management, we have to focus.
210.	Content
211.	The importance of the Constraint related to business objectives
212.	Exercise : Where is the constraint, and which behavior will be shown ?
213.	The “symptomatic” behavior and some questions
214.	What is a Constraint for Manufacturing Systems (here coupled line) ?
215.	Interdependence of the individual elements
216.	Total Performance of the Factory
217.	The employees and the system will find a way...
218.	The employees and the system will find a way...
219.	Basic Steps for a Constraint Management
220.	Step 0 : What is the Goal and how do we measure the goal ?
221.	Step 1: Determine the Constraint (Determine)
222.	Step 2: Exploit the constraint to a maximum (Exploit)
223.	Step 3: Subordinate other machines to the constraint (Subordinate others)
224.	Step 3: Level all other machines with the constraint (Subordinate others)
225.	Step 4: Optimize and elevate the constraint’s capacity (Elevate)
226.	Step 5: Go to Step 1 and avoid inertia (falling back) (Move and avoid)
227.	Effective and system-based Constraint-Management (CM) - Implementation

228.	Coupling of manufacturing lines in complex manufacturing processes
229.	The core of determining the constraint in coupled systems: coupling losses
230.	The Model is required in order to consolidate and correct data inconsistencies
231.	Sustainable increase in OEE (Capacity growth)
232.	The economic implementation of a Lean Production System
233.	Content of the Value Stream Analysis and Design
234.	Value Stream Analysis and Design: Value Stream Mapping
235.	Value Stream Mapping : HELICOPTER - VIEW
236.	Value Stream Mapping : HELICOPTER - VIEW
237.	Value Stream Mapping : ORDER-TO-DELIVERY - VIEW
238.	Value Stream Mapping Definition
239.	Value Stream Mapping and Lean Production System
240.	Value Stream Mapping
241.	Value Stream Mapping
242.	Mapping Material and Information Flow
243.	Standard symbols facilitate the process
244.	Drawing the Current State - Material Flow
245.	Drawing the Current State – manufacturing processes (data boxes)
246.	➤ Draw process boxes to identify each basic process.
247.	➤ Identify data for each process.
248.	Drawing the Current State - Material Flow
249.	Drawing the Current State - Information Flow

250.	Drawing the Current State - Information Flow
251.	Drawing the Current State - Information Flow
252.	Drawing the Current State – Customer demand rate (customer requirements)
253.	Drawing the Current State – Time line (Value adding and non-value adding)
254.	Drawing the Current State -TIME LINE
255.	Creating the Future State
256.	CREATING THE FUTURE STATE
257.	Value Stream Map Example
258.	Value Stream Map Example (Future State)
259.	Value Stream Analysis: Purpose and Objectives
260.	After the identification of waste, we need the teams and the right tools !
261.	Effective working groups
262.	Planning of effective work groups - Content
263.	Introduction Process
264.	Start phase
265.	Draft planning - specification of work group structure
266.	Draft planning – Rollout plan
267.	Draft planning – Specification of the training concept
268.	Detailed planning - Training and rollout pilot group
269.	Detail planning - Training and rollout complete
270.	Check and validation
271.	Team building process (Team dynamics)
272.	Training Planning
273.	Index
274.	Training pyramid
275.	Lean Excellence implementation
276.	Team training

277.	KAIZEN training - Continuous Improvement Process (CIP) training
278.	Equipment maintenance
279.	Equipment maintenance
280.	Measurables
281.	5S & Visual Factory
282.	Problem solving process
283.	Work standards
284.	Error Proofing
285.	Quick Change Over - QCO
286.	Personalized training plan (example)
287.	Measurables & objectives at working group level
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289.	Preliminary note
290.	Working group performance indicators 1
291.	Working group performance indicators 2
292.	Working group performance indicators 3
293.	Working group performance indicators 4
294.	Standardized workgroup objectives – team scorecard - an example
295.	General folders of the workgroup board
296.	Workgroup board - example
297.	Selection of the measures & methods
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299.	Target
300.	The 7 types of the waste
301.	Overproduction
302.	Waiting
303.	Transport
304.	Over-processing

305.	Inventory
306.	Motion
307.	Defects and no first pass quality
308.	The "best" and "worst" kind of waste
309.	Ratio of waste to value added activities
310.	Connection between measurables and waste
311.	Tools for the elimination of waste - 1
312.	Tools for the elimination of waste 2
313.	Measurables for a production system
314.	Lean measurables - content
315.	Benefit of the measurables
316.	Principles and targets
317.	Quality first time - definition (First pass quality)
318.	Quality first time - calculation for a whole factory
319.	Dock-to-Dock time - definition
320.	
321.	Build to Schedule (BTS) - definition
322.	Build to Schedule (BTS) - definition
323.	Overall Equipment Effectiveness (OEE) - Definition
324.	
325.	Total cost consideration (Total Cost)
326.	Measurables of a production system - result
327.	5 S and Visual Factory
328.	Index
329.	Definition
330.	Example 1 : Material presentation
331.	Example 2 : Tool presentation
332.	Example 3 : Color-coded work instructions
333.	Why Visual Factory?
334.	The Visual Factory Pyramid - 5 S

335.	1st key, Seiri / Sort
336.	2nd key, Seiton / Set
337.	3rd key, Seiso / Shine
338.	4th key, Seiketsu / Standardize
339.	5th key, Shitsuke / Sustain
340.	The Visual Factory Pyramid - 5 S
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342.	The Visual Factory Pyramid - 5 S
343.	Visual Controls - example 1
344.	Visual Controls - ANDON Boards
345.	Standardized Problem Solving - PCAR
346.	Index
347.	Definition - "problem"
348.	Standardized Problem Solving – aims
349.	Standardized Problem Solving – problem choice
350.	Standardized Problem Solving – putting into action
351.	Standardized Problem Solving – tasks & responsibilities
352.	Work standards - QPS
353.	Quality Process System – Standardized Work - Content
354.	Components
355.	Definition work standard
356.	The standard's task
357.	Fixing the standard
358.	QPS - a living process
359.	QPS - Procedure to create and optimize a standard
360.	QPS in non-production areas
361.	Customer Demand Rate - definition
362.	Customer Demand Rate (CDR) - explanation
363.	Operator Instruction Sheet
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365.	Work Element Sheet (WES)
366.	Work Element Sheet (WES) - example
367.	Work Analysis Sheet (WAS)
368.	Work Analysis Sheet - example
369.	Work Balance Board (WBB) - introduction
370.	Work Balance Board (WBB) - definition
371.	Work Balance Board (WBB) - representation
372.	Closing remark
373.	Quick Change Over – Single Minute Exchange of Dies (SMED)
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375.	Quick Change Over - target and purpose
376.	Quick Change Over - definitions
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379.	Quick Change Over – The 8 step method
380.	Example 1: Storage of Toolings
381.	Example 2: Test facility of Toolings
382.	Example 3: Plug Clamp Systems
383.	Example 4: Results
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387.	Definitions
388.	Approaches
389.	Types of Error Proofing
390.	Examples 1
391.	Purpose
392.	Procedure 1
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394.	Further examples 1
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396.	Process confirmation to involve management in shop floor activities
397.	Content – process confirmation
398.	Process confirmation – What it is!
399.	Systematic detection of deviations from the standard
400.	Coaching and communication
401.	Acceptance of the tools
402.	Process confirmation – How is it handled? What and how?
403.	Identified concerns, frequency and measures
404.	Confirmation and the role of the next organization level
405.	Continuity and involvement of the whole organization
406.	Essentials for a production system
407.	The purpose of confirmation processes
408.	Benefit
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410.	Development How and how often it is checked?
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412.	Résumé
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415.	Content: Problem solving support system
416.	Importance for a Production System
417.	Precondition
418.	Standardized reporting of problems
419.	Standardized problem and follow-up
420.	Problem and Corrective Action Report

421.	Regular discussion of problems
422.	Practical realization for problem solving support
423.	Problem solving support process
424.	Resumé
425.	Escalation Systems
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427.	Escalation System – what it is!
428.	Importance and Benefit
429.	Development – Deviation and Limits
430.	Development – Counter Measure and Responsibility
431.	Development – Information and contacts
432.	Development – check and adaptation
433.	Practical example
434.	Result : Informed management
435.	Exercise
436.	Stabilize, lead and track the lean transformation process
437.	Content
438.	In order to get a closed-loop control system, we need...
439.	Lean Excellence System Review Objectives
440.	Critical success factors (CSFs) for the Lean Transformation
441.	Critical success factors (CSFs) for Lean Transformations
442.	Design of LESR considering the CSFs (1)
443.	Design of LESR considering the CSFs (2)
444.	Total View of the Lean System Review
445.	Substantial LESR Modules
446.	Analysis from a strategic perspective (Lean Transformation Speed)

447.	Lean Excellence Review supports strategic Best Practice Management
448.	System-based transformation of the group towards Best-in-Class
449.	„Don't ever fall back to the old situation“ is one motivation for the Review
450.	Lean Orientation, System and Results are mapped against the strategic principles ...
451.	Lean Excellence: Where we started:
452.	Organizational IT-Framework
453.	Content and Motivation for the Repository
454.	Motivation for the Repository (IT-File structure): Color code for order in IT
455.	Definition of the file structure (IT repository)
456.	Systematic and standardized Exchange of Best Practices for Excellence
457.	Now, we are excellent ! Continuous Improvement never ends...
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459.	Learning from the Toyota Production System (TPS)
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461.	Think about and Keep in mind: Respect for the employee
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468.	Think about and Keep in mind: Target costs in the competition
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