Bon-Tech CPI / LSS Body of Knowledge

Rev. 20150618

BoK Topic Number	Core Competency	Supporting Competency	Subtopics / Knowledge Elements	Description	Level 1 / Core GB	Level 2 / BB	Level 3 / MBB	Champ
I. Soft Skills	**A.**	**Mentor**				**Taxonomy Level (1-4)***		
I. Soft Skills	A.1.	Mentor	Initiating Teams	Describe and identify the elements required when launching a team (e.g., clear purpose and goals, commitment, ground rules, etc.) and how they affect the team's success (e.g., ability to gain support from management, team empowerment, team cohesion, etc.).	3	3	3	1
I. Soft Skills	A.2.	Mentor	Selecting Team Members	Determine the appropriate number and type of team members (e.g., skills sets, technical/subject-matter expertise, etc.) based on the team's charter and goals, and ensure appropriate representation of the stakeholders.	N/A	2	3	2
I. Soft Skills	A.3.	Mentor	Team Roles and Responsibilities	Define and describe team roles and responsibilities, including team leader, facilitator, etc.	3	3	3	1
I. Soft Skills	A.4.	Mentor	Team Stages	Identify and facilitate the stages of team evolution (forming, storming, forming, performing, adjourning/mourning).	3	3	3	n/a
I. Soft Skills	A.5.	Mentor	Team Building	Apply various techniques (e.g., coaching, mentoring, intervention, etc.) to build and guide a team, and use appropriate tools to overcome common problems such as overbearing, dominant, or reluctant participants, the unquestioned acceptance of opinions as facts, groupthink, feuding, floundering, the rush to accomplish/finish, digressions, and tangents.	2	4	4	n/a
I. Soft Skills	A.6.	Mentor	Team Facilitation and Management	Apply various facilitation techniques to maximize team buy-in and performance, including active listening and psychological assessments (MBTI, SDI, etc.), running effective meetings, agendas, roles, rolling action item lists, etc..	3	3	4	3
I. Soft Skills	A.7.	Mentor	Team Performance Evaluation	Measure team progress in relation to goals, objectives, and metrics that support team success, and recognize and reward accomplishments.	3	3	4	2
I. Soft Skills	A.9	Mentor	Team Tools	Define, select, and apply the following creative and management and planning tools used by teams in various situations: brainstorming, nominal group technique, multi-voting, affinity diagrams, tree diagrams, various matrix diagrams and interrelationship digraphs, activity network diagrams, etc.	3	3	4	n/a
I. Soft Skills	**B.**	**Coaching**				**Taxonomy Level (1-4)***		
I. Soft Skills	B.1.	Coaching	Coaching Conversation	Understanding the difference between a coaching role and a mentoring role. Learning the 3 level technique of utilizing a coaching conversation to drive results and learning.	N/A	2	3	3
I. Soft Skills	B.2.	Coaching	Coaching Skills - critical x's	enhancing and defining coaching skills regarding active listening, asking probing questions, coaching goal setting, effective feedback and offering options.	N/A	2	3	3
I. Soft Skills	B.3.	Coaching	Monitoring Progress	Establish and utilize a method for understand and adapting style to increase effectiveness	N/A	2	3	2
I. Soft Skills	**C.**	**Change Agent**				**Taxonomy Level (1-4)***		
I. Soft Skills	C.1.	Change Agent	Effective Change Management Roles and Methods	Understand the role and importance of the change agent, as well as levels and types of change agents within the organizational structure.	2	3	4	3
I. Soft Skills	C.2.	Change Agent	Organizational Roadblocks	Identify the inherent structures of an organization (such as its culture and construct) and describe how they become barriers to improvement. (Understand) Tools may include organizational assessments, cultural assessments, evaporating cloud, etc.)	2	3	4	3
I. Soft Skills	C.3.	Change Agent	Motivational techniques	Define and apply various techniques used to support and sustain participation in process improvement efforts.	2	3	3	2
I. Soft Skills	C.4.	Change Agent	Conflict Resolution	Use various techniques to help conflicting parties recognize common goals and ways they can work together to achieve them. Includes identifying source of conflict, managing conflict, and dealing with difficult people	2	3	4	2

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I. Soft Skills	**C.5**	**Change Agent**	**Change Management**	Includes change cycles, thought leadership, vision, day job integration, and to a limited extent strategic alignment (overlaps with Management / Leadership)	1	3	4	3
II. Management / Leadership	**A.**	**Project Manager**				**Taxonomy Level (1-4)***		
II. Management / Leadership	**A.1.**	**Project Manager**	**Project or Event Chartering**	Create a project charter, including target or objectives, problem / opportunity statement, scope, boundaries, etc. for a kaizen event or Lean Six Sigma project. Use various negotiation techniques when changes to the charter are proposed by various stakeholders and team members, and determine when it is appropriate to make changes to the charter. Tools may include SIPOC, Charter, scope analysis, stakeholder analysis, Mission & Vision statement development, etc.	2	2	4	3
II. Management / Leadership	**A.2.**	**Project Manager**	**Project Planning & Tracking**	Create and manage a project plan, including expected implementation timeline, resources, milestones, tollgate reviews, deliverables, transition, and closure. Tools may include POA&M, Action Item Register, Gantt Chart, Project Newspaper, Tollgate Reviews, check lists, etc.	2	2	3	3
II. Management / Leadership	**B.**	**Leadership**				**Taxonomy Level (1-4)***		
II. Management / Leadership	**B.1.**	**Leadership**	**Business Systems and Processes**	Identify the interrelationships between organizational structure and processes. Describe how the selection and management of value streams relates to the organizational structure and processes, and confirm the link of value streams to organizational strategic plans.	2	3	4	2
II. Management / Leadership	**B.2.**	**Leadership**	**Managing/ Leading People**	Includes dealing with difficult people, situational leadership, temperaments and personalities appreciation, as well as communication, influencing, building trust, and innovation. Overlaps with coaching and mentoring / team skills and conflict management.	1	3	4	2
II. Management / Leadership	**B.3.**	**Leadership**	**Strategic Planning, Alignment, and Deployment**	Enterprise or end-to-end value stream analysis, linking mission and vision to core and enabling value streams, identifying organizational and value stream constraints, mapping specific projects and improvement events to the strategic constraints, and managing the plan of action for value stream transformation. Includes understanding types of organizational and transactional systems, comprehension of systems components, and application of systems approach to ensure strategic project selection to maximize organizational impact of projects and events. Tools may include SIPOCSIPOOC, drill-down charts, value stream mapping/analysis, VA/NVA identification, takt charts, inventory identification, DBR/constraint management,	1	3	4	3
II. Management / Leadership	**B.4.**	**Leadership**	**Resource Management**	Applying sphere of influence and real and perceived rank in order to ensure appropriate team members and subject matter experts (SMEs) are available from across the value stream in order to support projects and improvement efforts. Applying the title of Champion to project activities, including breaking down barriers and supporting team implementation plans.	1	1	3	3
II. Management / Leadership	**B.5.**	**Leadership**	**Process Governance/Ownership**	Demonstrating ownership of processes beyond direct authority, including applying sphere of influence to cross-departmental activities.	N/A	N/A	4	3
II. Management / Leadership	**B.6.**	**Leadership**	**Enterprise Leadership Roles and Responsibilities**	Identify the roles and responsibilities of executive leadership and how their involvement can affect the deployment of CPI / LSS initiatives (e.g., providing resources, accountability, etc.). Includes Executive Steering Committee roles and management.	N/A	N/A	3	4
II. Management / Leadership	**B.7.**	**Leadership**	**LSS Roles and Responsibilities**	Define the roles and responsibilities of Level 1 (Green Belt), Level 2 (Black Belt), Level 3 (Master Black Belt), Value Stream Champion, Project Champion/Sponsor, Process Owners, Customers, and Stakeholders.	2	3	3	2
II. Management / Leadership	**B.8.**	**Leadership**	**Strategic Communications**	Sharing project and event results for maximum visibility and leveragability/knowledge sharing. Tools may include steering committees, A3 / quad chart / 6-panel reports, storyboards, project management databases, hoshin, conferences, visual display of data and information, etc. Also, develop and deploy communication plans that support process improvement efforts and will help prevent rumor, false expectations, and other obstacles from interfering with successful implementation of the change. Tools may include stakeholder analysis, communication plans, hoshin-kanri, pareto analysis, etc.	2	3	4	2
II. Management / Leadership	**C.**	**Deployment Skills**				**Taxonomy Level (1-4)***		

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II. Management / Leadership	C.1.	Deployment Skills	Understanding, managing, and measuring risk	Understand the link between process change and organizational risk and apply appropriate risk management and risk mitigation techniques.	1	2	3	2
II. Management / Leadership	C.2.	Deployment Skills	Leveraging Improvements	Apply knowledge management, hoshin, and sphere of influence to maximize the communication and leveraging of new knowledge obtained from project. Overlaps with innovation transfer, methodology expert, strategic communications, and change agent skills	2	3	4	2
II. Management / Leadership	C.3.	Deployment Skills	Sustainability	CPI maturity model. Assessment of current state with expectation of driving toward self-sufficiency and sustainable improvement	N/A	N/A	3	4
III. Technical Skills	A.	Methodology Expert					Taxonomy Level (1-4)*	
III. Technical Skills	A.1.	Methodology Expert	Organizational-Specific Deployment Methods	Includes deployment model (8-Step, DMAIC, OODA, PDCA/PDSA, etc.) as well as high- and mid-level CPI mission, vision, and objectives. Also includes implementation models (project, rapid improvement/kaizen events, 5-S, just-do-its, etc.) and historical context of the organization's deployment methodologies.	2	3	4	3
III. Technical Skills	A.2.	Methodology Expert	Metrics identification	Understand different types of and uses for data, including data categories at both a high level (voice of the customer, voice of the process, voice of the business), and a low level (qualitative vs. quantitative, continuous vs. discrete, binomial vs. count/Poisson). Also includes sampling strategy, and data collection and validation methodologies. Tools may include measurement system analysis, gage repeatability and reproducibility, balanced scorecard, data collection plans, etc.	2	3	4	2
III. Technical Skills	A.3.	Methodology Expert	Metrics analysis	Assessing meaning and importance of data through visual/graphical and statistical analysis. Tools may include pareto charts, histograms, control charts, correlation/regression, normality / distribution analysis, rational subgrouping, hypothesis testing, design of experiments, etc. Application of non-parametric tests is only required for MBB/Level 3 practitioners.	2	3	4	2
III. Technical Skills	A.4.	Methodology Expert	Project follow-up	Understand and implement project follow-up to ensure complete implementation, project effectiveness, and long-term sustainability. Tools may include control plans, control charts, gemba/waste-walks, management by walking around (MBWA), visual management methods, poka-yoke/mistake-proofing, work instructions/process standardization/training within industry (TWI) methods, institutionalized data collection/assessment, constraint monitoring, BPM, DOE, TPM, RCM etc.	2	3	4	2
III. Technical Skills	A.5.	Methodology Expert	Project leveraging / repeatability	Post-deployment assessment of knowledge gained and potential opportunities for its application. Includes but is not limited to knowledge management, updating/maintaining project management/reference data bases, socialization/hoshin of key learning points vertically and horizontally. Tools may include hoshin-kanri, improvement / success modes and effects analysis (IMEA/SMEA), lessons learned assessment, 8-D/Kepner-Tregoe, A3/6-panel reports, project replication teams, etc.	2	3	4	3
III. Technical Skills	A.6.	Methodology Expert	Performance Gap Analysis	Analyze process value stream and/or process performance and compare to organizational or process goals. Includes capability analysis, capability studies, and various capabilities indices and metrics (examples include PPM, DPMO, DPU, RTY, Cp, Cpk, process sigma, ABC, ROI, etc.).	2	3	4	1
III. Technical Skills	A.7.	Methodology Expert	Root cause discovery tools	Describe, use, and interpret various root cause analysis tools. Examples include five whys, fishbone (Ishikawa) diagrams, Cause and Effect (XY) Matrices, evaporating clouds, tree diagrams, 8 waste analysis, ideal state mapping, etc.	3	4	4	2
III. Technical Skills	A.8.	Methodology Expert	Process mapping	Visually displaying the process. Tools may include SIPOC/SIPOOC, drill-down maps, process maps, value stream maps, spaghetti diagrams, circle diagrams, etc.	3	3	4	2
III. Technical Skills	A.9.	Methodology Expert	Risk Analysis and Management	Understanding the law of unintended consequences. Assessing potential failure modes both within a process or value stream and within the process-improvement deployment. Tools may include FMEA, XY matrix, PDPC / tree diagrams, force field analysis, collateral Y brainstorming, etc.	2	3	4	n/a

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III. Technical Skills	A.10.	Methodology Expert	Developing & implementing optimal solutions	Integrating data analysis and subject matter expert experience into determining and implementing best solutions for process improvement. Includes fact-based decision-making, generating and evaluating alternatives, and cost-benefit analysis (CBA). Tools may include benchmarking, graphical methods, piloting/beta-testing, hypothesis testing, correlation/regression, design of experiments, takt charts, Value-add/non-value-add assessment, work instructions, mistake proof/poka-yoke, quick change-over/SMED, just-in-time/kanban/pull systems, hijunka/level-loading, work cells/teams, drum-buffer-rope (DBR), critical chain management, total productive maintenance (TPM) / reliability-centered maintenance (RCM), point-of-use storage, Kaizen events etc.	3	3	4	2
III. Technical Skills	A.11.	Methodology Expert	Project selection	Describe how projects or kaizen / Rapid Improvement Events are identified and selected, such as identifying constraints in the value stream and knowing when to use Lean Six Sigma instead of other problem-solving approaches. (Understand). Tools may include PISWs, SIPOOC, drill-down charts, XY matrix, value stream mapping / analysis, interrelationship digraphs, evaporating cloud, takt charts, pareto charts, etc.	1	3	4	2
III. Technical Skills	A.12.	Methodology Expert	Value stream identification	Understand and identify core, governing, and enabling processes. Determine system boundaries and/or project scope. Tools may include hoshin/strategic planning, value stream mapping and analysis, mission and vision statement development, etc.	1	2	4	3
III. Technical Skills	B.	Trainer				Taxonomy Level (1-4)*		
III. Technical Skills	B.1.	Trainer	Training Plan	Apply appropriate thoughtfulness to deliver appropriate training at the appropriate place and time. Tools may include just-in-time training, mission analysis, capabilities and task analysis, training plans, curricula development, story board/A3s, message mapping, audience alignment, etc.	n/a	2	3	2
III. Technical Skills	B.2.	Trainer	Critical thinking & taxonomy levels	Understand and apply taxonomy levels to ensure appropriate application of synchronous/asynchronous training and blended learning techniques to deliver appropriate training with most effective use of time and resources. Tools may include Bloom's taxonomy, learn-do methods, blended learning methods, outcome-based or task-based analysis, training style, managing a room, using multi media, successful environment, etc.	n/a	2	3	2
III. Technical Skills	C.	Financial Skills				Taxonomy Level (1-4)*		
III. Technical Skills	C.1.	Financial Skills	Financial Metrics	Includes understanding and application of financial metrics appropriate to your organization and project. Tools may include Net Present Value, Return on Investment, Activity Based Costing, Value Stream Accounting, Labor content planning, etc. as well as appropriate information technology to support financial tracking	1	1	3	3
III. Technical Skills	C.2.	Financial Skills	Types of Savings	Apply appropriate financial metrics to project / process improvements, including hard savings / year-over-year budget savings, soft savings / cost avoidance / prevention of future expenditures without decreasing budget line items, and safety/quality of life improvements which demonstrate no immediate link to current or future budgets, but that are known to have positive long-term / out-year fiscal impact due to reduced turn-over, reduced health risks, etc.	2	3	4	3
III. Technical Skills	D.	Lean Skills				Taxonomy Level (1-4)*		
III. Technical Skills	D.1.	Lean Skills	Eliminate Wasteful Activities (Muda)	Apply CPI tools to eliminate non-value-added activity from the process. Tools may include 5-S, process maps, value stream maps, gemba/"go-see", spaghetti diagrams, circle diagrams, work cells, quick change over/SMED, visual management / visual display of information, point of use materials, just-in-time, etc.	3	3	4	3

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III. Technical Skills	**D.2.**	**Lean Skills**	**Eliminate inconsistencies in the system / Mura**	Apply CPI tools to eliminate variation from the process. Tools may include 5-S, process maps, value stream maps, gemba/"go-see", standard work, flow analysis, visual management / visual display of information, process standardization, standardize training/training within industry (TWI) methods, error-proofing/poka-yoke, root cause analysis, tree diagrams, hypothesis testing, correlation/regression, design of experiments (DOE), control plans, descriptive and inferential statistics, probability distributions, measurement system analysis, gage repeatability and reproducibility, control charts / SPC, etc.	3	3	4	3
III. Technical Skills	**D.3.**	**Lean Skills**	**Eliminate physical strain in the system / Muri**	Apply systems thinking and logical thinking processes to value stream analysis and CPI tools to eliminate constraints from the process. Tools may include 5-S, process maps, value stream maps, gemba/"go-see", WIP analysis, flow analysis, circle diagrams, work cells, quick change over/SMED, critical chain project management (CCPM), drum-buffer-rope (DBR), supply chain management, takt charts, workload leveling, heijunka, queing theory, tree diagrams, etc.	3	3	4	3
III. Technical Skills	**E.**	**Design and Innovation**				**Taxonomy Level (1-4)***		
III. Technical Skills	**E.1.**	**Design and Innovation**	**Applied Innovation**	Apply "creativity over capital" methodologies to increase value-added process steps, especially from a customer-focused perspective. Tools may include TRIZ/ARIZ, brainstorming, Quality Function Deployment (QFD), Design for Six Sigma / Design for "X" methodologies (Includes such items as Design for Safety, Reliability, Testability, Features, Manufacturability, Serviceability, Assembly, Maintainability, Ergonomics, Appearance, Packaging, Automation, Decreased Cycle Time, etc. In general, Design for Six Sigma encompasses DFX), etc.	N/A	2	3	n/a
III. Technical Skills	**E.2.**	**Design and Innovation**	**Innovation Transfer**	Apply leveraging and benchmarking techniques to maximize knowledge transfer, both from previous projects into your own, and from your own project into easy-access knowledge packets to transfer to similar improvement applications organization-wide. Tools may include benchmarking, Improvement/Success Modes and Effects Analysis (I/SMEA), data base / knowledge management software, etc.	2	3	3	2

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