IBM Watson Talent Frameworks for Construction

Industry specific job skills for organizational success

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SOLUTIONS
FOR TALENT MANAGEMENT

Increasing costs, aggressive schedules, outsourcing, union and non-union labor along with the proliferation of technology create unique workforce challenges in the Construction industry. To remain competitive and win new business you need to ensure the right employees with the right skills are part of the organization.

Understand the talent you have, the skills you want to retain and the skills you need to develop with Watson Talent Frameworks. Our solution supports you in attracting and onboarding new bid and cost managers with a detailed set of skills and abilities specific to individual roles. Retain your best carpenters and tradesmen by providing clear visibility to future career opportunities, and engage engineers with skill-specific content to drive their day-to-day performance and on-going development.

Connect People to Business

Watson Talent Frameworks for Construction ensures a benchmark model to centralize and provide consistency in how you define jobs and skills across all aspects of talent management. It provides HR both data and conte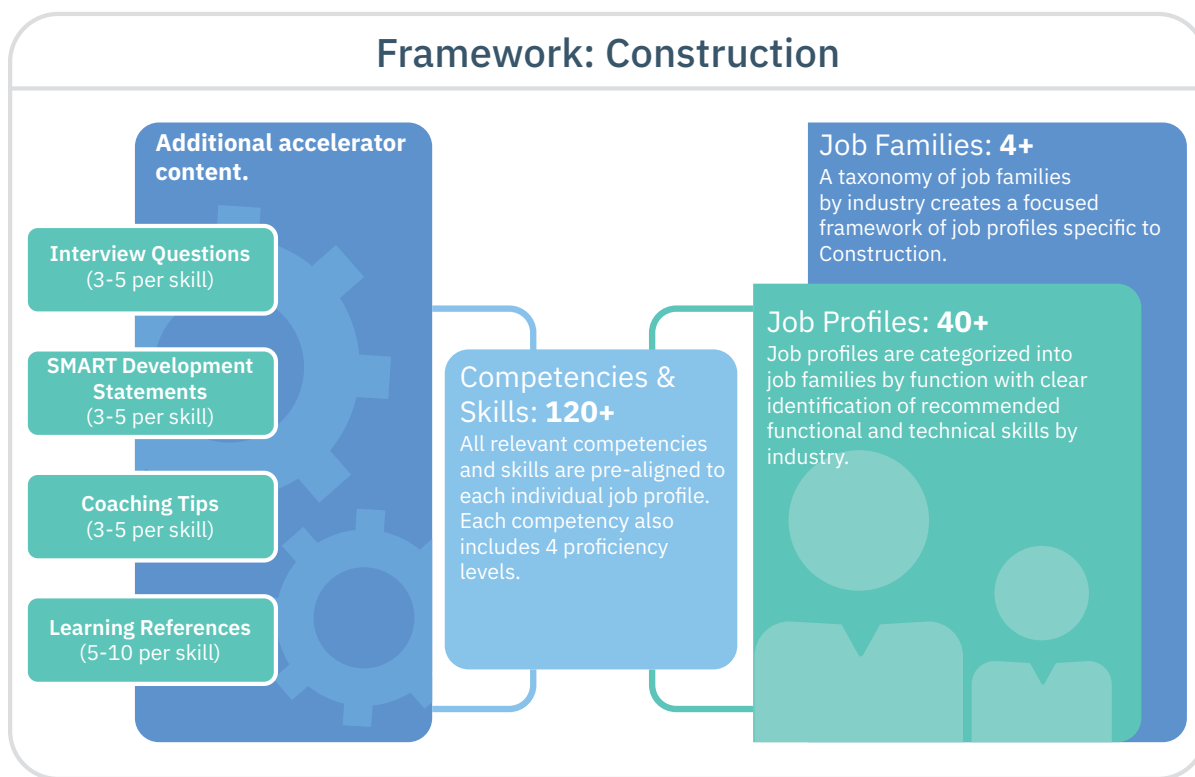nt to match the right talent with company requirements, creating an engaging employee experience to drive better business results.

Watson Talent Frameworks includes several key elements:
– Pre-defined job profiles detail the skills and levels of proficiency employees need to excel.
– Standard job descriptions attract qualified candidates by clearly defining key responsibilities.
– Interview questions provide a guide for accurately assessing candidates.
– Job-specific skills, behaviours and coaching tips support managers in facilitating clear, objective performance reviews.
– SMART development statements give employees specialized, actionable practices to help them improve and achieve more.
– Learning References provide a path for growth and development.
– The jobs taxonomy drives engagement with clear and transparent career opportunities.

Watson Talent Frameworks powers people analytics and cognitive HR with a data rich foundation.

Fig 1: IBM Watson Talent Frameworks architecture

Framework: Construction

Additional accelerator content.

Interview Questions
(3-5 per skill)

SMART Development Statements
(3-5 per skill)

Coaching Tips
(3-5 per skill)

Learning References
(5-10 per skill)

Competencies & Skills: **120+**
All relevant competencies and skills are pre-aligned to each individual job profile. Each competency also includes 4 proficiency levels.

Job Families: **4+**
A taxonomy of job families by industry creates a focused framework of job profiles specific to Construction.

Job Profiles: **40+**
Job profiles are categorized into job families by function with clear identification of recommended functional and technical skills by industry.

Deep Dive: Job Profile

Let us peruse a job profile from Watson Talent Frameworks for Construction to better understand the data and content available. Consider the job profile of a 'Cost Manager' highlighted below as a sample.

Table 1. Job profile classification with descriptions.

Job Family Code	CONCM
Job Family Name	Construction Financial Management
Job Family Description	Jobs related to the management of financial aspects of construction projects: cost management, billing, etc.
Job Profile Code	CFM-3CSM
Job Profile	Cost Manager
Job Role Description	Estimates, controls, reports and manages construction project costs; ensures compliance with initial cost strategies.
Job Band ID	3
Job Responsibility	(1) Communicates with relevant people on status of and adjustments to initial cost plans. (2) Controls all the project activities to align with expected cost strategies. (3) Estimates costs (e.g. labor and materials) that occur in the whole project life cycle. (4) Produces project cost reports for management teams or external customers.

* Each job profile is assigned a unique job code ID, mapped to a job family, and tagged to an appropriate job band.

* Apart from descriptions of the main job family and the job role, each job profile includes four key job responsibilities.

Table 1.1. Job band categories and descriptions for each.

Job Band ID	Job Band Name	Job Band Description
1	Executive Management	Vision, policy, strategy and direction setting; Enterprise and industry view; Driving organizational goals
2	Senior Management	Strategy formulation; Vision implementation; Operational responsibility; Cost and risk management; Enterprise view
3	Management; Senior Level Consulting	Functional, technical or process leadership; Management of multiple teams; High complexity and ambiguity; Tactical responsibilities
4	First Line Management; Senior Professional	Team or technical supervision; Expertise and experience with complex technical activities; Project management and consulting
5	Team Leadership; Technical Professional	Difficult technical tasks; Implementation experience; Self-sufficiency; Small project responsibility; Technical supervision
6	Administrator; Technician, Trainee	Routine technical or administrative tasks; Follows procedures; Operates under supervision

* Each job profile is mapped to one of six pre-defined job bands.

Deep Dive: Competencies & Skills - Overview

Let us explore recommended competencies and skills data for the sample job profile highlighted in Table 1.

Table 2. List of all competencies recommended for Cost Manager: CFM-3CSM.

Competency Code	Competency Name	Proficiency Level	Priority
B0160	Service Excellence	3 - Extensive Experience	1 - Low
B0200	Business Markets	2 - Working Experience	2 - Medium
B0295	Business Orientation	3 - Extensive Experience	3 - High
B0450	Business Ethics	3 - Extensive Experience	2 - Medium
B0700	Finance and Accounting	3 - Extensive Experience	2 - Medium
B0750	Budgeting	3 - Extensive Experience	2 - Medium
B0900	Office Support Tools	3 - Extensive Experience	2 - Medium
B1000	Project Administration	2 - Working Experience	1 - Low
B1020	Planning: Tactical, Strategic	3 - Extensive Experience	3 - High
B1080	Information Capture	3 - Extensive Experience	2 - Medium
I0200	Flexibility and Adaptability	3 - Extensive Experience	2 - Medium
I0250	Conflict Management	3 - Extensive Experience	1 - Low
I0350	Problem Solving	3 - Extensive Experience	2 - Medium
I0480	Effective Communications	3 - Extensive Experience	2 - Medium
I0500	Effective Presentations	3 - Extensive Experience	2 - Medium
I0700	Decision Making and Critical Thinking	3 - Extensive Experience	2 - Medium
I0960	Accuracy and Attention to Detail	3 - Extensive Experience	3 - High
I1020	Analytical Thinking	3 - Extensive Experience	3 - High
M0250	Project Management	2 - Working Experience	2 - Medium
M0450	Performance Management	3 - Extensive Experience	2 - Medium
M0500	Vendor/Supplier Management	3 - Extensive Experience	3 - High
M1010	Producing Results	3 - Extensive Experience	2 - Medium
TCON0250	Construction Engineering and Technology	2 - Working Experience	1 - Low
TCON0320	Mechanical/Machinery	2 - Working Experience	2 - Medium
TCON0401	Cost Management	3 - Extensive Experience	3 - High
TCON0410	Construction Value Management	3 - Extensive Experience	3 - High
TCON0430	Cost Estimation	3 - Extensive Experience	3 - High
TCON0440	Tendering	2 - Working Experience	3 - High
TCON0450	Construction Contract Management	2 - Working Experience	3 - High
TFN120	Financial Record Keeping	3 - Extensive Experience	3 - High
TFN150	Financial Reporting	3 - Extensive Experience	3 - High
TFN320	Cost-Benefit Analysis	3 - Extensive Experience	3 - High
TFN450	Cost Accounting	3 - Extensive Experience	3 - High
TFN900	Financial and Accounting Systems	3 - Extensive Experience	3 - High

Deep Dive: Competencies & Skills - Detail

Let us explore all the data and content available for the sample competency highlighted in Table 2.

Table 3. Competency and skill details of Cost Estimation: TCON0430.

Competency Code: TCON0430	Competency Name: Cost Estimation
Competency Description	Knowledge of and ability to calculate and present the costs of a project when budgeting and developing business plans.
Proficiency Levels	Level 1: Basic understanding
	Level 2: Working experience
	Level 3: Extensive experience
	Level 4: Subject matter depth/breadth
Proficiency Level Behaviors	(1) Advises on how to apply a cost estimation model when conducting estimations. (2) Anticipates contingent costs in long-term, high-risk projects. (3) Evaluates the benefits and drawbacks of different cost estimation approaches. (4) Evaluates the effectiveness of industry best practices in cost estimation. (5) Oversees the implementation of labor, material, equipment and overhead cost estimation processes. (6) Trains others on organizational cost estimation procedures to improve the effectiveness of business planning.

* Each competency is defined by four levels of proficiency – Level 1: Basic understanding, Level 2: Working experience, Level 3: Extensive experience, Level 4: Subject matter depth/breadth

Table 3.1. Accelerator content for each competency includes – Interview questions & SMART Development statements.

Competency Code: TCON0430	Competency Name: Cost Estimation
Interview Questions	(1) What cost estimation approaches have you used? (2) Describe your experience with estimating labor, material, overhead and equipment costs for a project. (3) What problems did you encounter when estimating contingent costs for a project? (4) How accurate were the cost estimates you produced in your previous position? (5) How did you apply cost estimation models to estimate costs for a project?
Development Statement	(1) Each year, create a report detailing the impact of new technology on existing banking services and suggest a course of action. (2) Within the next 6 months, design strategies for the Internet banking business that align with organizational business goals. (3) Within the next 3 months, develop and deploy a contingency procedure designed to maintain account accessibility and security in the event of an Internet banking system failure. (4) Increase online sales of a particular retail banking product or service by 15% in the next year through the use of Internet promotions. (5) Reduce costs associated with retail banking by 10% in the next year by extending Internet banking services to new products, customers, or markets.

*Accelerator content helps managers and employees engage with competency and skill data in an on-going manner.

Table 3.2. Accelerator content for each competency also includes – Coaching tips & Learning references.

Competency Code: TCON0430	Competency Name: Cost Estimation

Coaching Tip Descriptions	(1) Assist a senior estimator in negotiating better prices with vendors. (2) Consult experts on how to decide the amount of contingent costs for a long-term, high-risk project. (3) Document actual expenditures continuously as a project develops; compare and contrast these costs with estimated costs. (4) Monitor for new cost estimation technology and methodology within the industry; introduce updated technologies as appropriate. (5) Attend training sessions to learn new cost estimation approaches (e.g. allocation of joint costs).

Learning References

Learning Reference Type	Books	Books	Books	Books	Organizations, Associations	Vendors
Learning Reference Name	Cost Estimating	Practice Standard for Project Estimating	Cost Estimating and Contract Pricing	Systems Programming	The Society of Cost Estimating and Analysis (SCEA)	U.S. COST
Learning References Description	Provides information on all aspects of cost estimating, including examples, data, techniques and tools.	It presents guidelines for project managers on developing costs, resources, and time estimates in the early stages of a project and techniques for refining these estimates during each project stage.	Provides cost estimating and contract pricing information based on tools, techniques and best practices used in private and public organizations.	Subtitle: Designing and Developing Distributed Applications. This book explains how the development of distributed applications depends on a foundational understanding of the relationship among operating systems, networking, distributed systems, and programming.	A non-profit organization that sets standards for cost estimation and analysis as applied within the government and industry.	Provides cost management and project control services and software for all kinds of projects.
Author	Stewart, Rodney	Project Management Institute	Garrett, Gregory A.	Anthony, Richard		
Publisher	Wiley-Interscience	Project Management Institute	Aspen Publisher, Inc.	Morgan Kaufmann		U.S. COST
Publication Year	1991	2011	2008	2015		
Provider	Amazon	Amazon	Amazon	Amazon		
URL					http://www.sceaonline.org/index.cfm	http://www.uscost.com
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Keeping it Current

Watson Talent Frameworks is developed by a dedicated team using an independent research methodology and augmented by Watson. IBM applies machine learning to analyze and synthesize daily feeds of job board data. Watson identifies new or updated content which is then further refined by the IBM content curation team.

As part of the process, every framework goes through a comprehensive review to identify changes relevant to industry trends. These changes are validated to ensure that the job architecture is up to date with current skill demands in the industry.

Sources include:
- Career and recruiting websites
- Client surveys and content workshops
- Disruptive industry changes
- New disciplines, job functions, job roles, or skills in technology or new industries
- Organizational development and HR best practices
- Regulatory legislation and industry compliance requirements
- Research organizations and professional associations
- Vision and thought leading vertical experts

For additional information
To learn more about IBM talent management solutions,
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