

IBM® Smarter Workforce Institute

Competencies in the AI era

Nigel Guenole, Ph.D., Chris Lamb, and Sheri Feinzig, Ph.D.



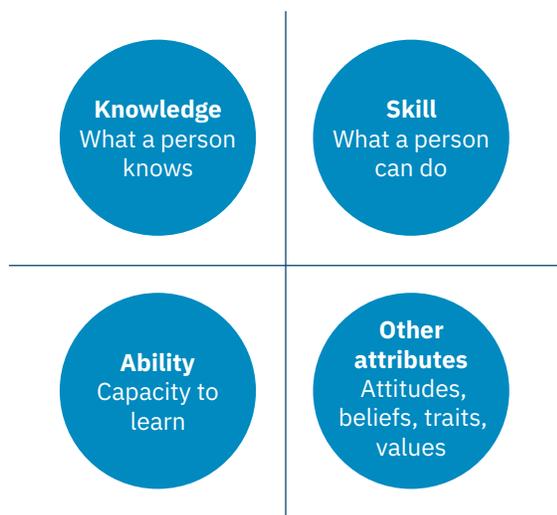
One of the hottest topics in human resources (HR) today is artificial intelligence (AI). AI can be applied to augment practitioner approaches to completing common HR tasks. It works like most objective analytical minds would, but at a scale and speed that humans alone cannot match.

This technology has arrived at the right time. The scale and time pressures involved in effectively meeting HR tasks in even moderate sized organizations are practically insurmountable without artificial intelligence. If you're a Chief Human Resources Office (CHRO) or HR leader wanting to prepare your business to leverage AI, there is one essential activity you need to undertake now: audit the quality of your organization's competency frameworks.

Competencies are taxonomies of knowledge, skills, abilities, and other attributes (KSAOs) required for the successful performance of jobs in your organization, both now and in the future. KSAOs can include requirements of the worker (such as knowledge, skills, education, and experiences), as well as personal characteristics of the worker (such as cognitive abilities, traits, and interests).

Once you assess the quality of your competencies, you should quickly address any shortcomings you discover. Let's consider why auditing your competencies is a top priority.

Figure 1. KSAOs



Why CHROs should assess the quality of competencies

Applications of AI in areas of HR such as recruitment and coaching require a clear view of job requirements to assess candidates against, and competencies provide a standardized way of viewing the requirements of any job. AI delivers most value when operating at a scale that would take too many humans too long to perform tasks. Competencies enable that scaling because they offer a standardized approach to determining the requirements for every new job. In short, competencies are critical to effectively leveraging AI because practically every artificial intelligence application in HR depends on the standardization and ease of scaling that competencies permit.

To get the most from AI in HR, your competencies need to be:

- Clearly defined
- Consistent across the business
- Differentiated by function, role and level
- Updated at appropriate intervals
- Used to inform decision making in all areas of HR

To understand the importance of competencies to AI in HR, consider the following three important HR processes: recruitment, career coaching, and learning.

Competencies in AI recruitment

Consider how the context for recruiting has changed. With comprehensive and easy to access information on the job market available to applicants via job websites, the volumes of candidates applying for jobs often reaches into the hundreds, and for many of the most desirable jobs, the thousands.

With this volume of applications, it is practically impossible for humans to screen the knowledge, skills, abilities, and other attributes (KSAOs) of all candidates for a given role in an objective fashion, let alone in a reasonable timeframe. This is a task that screams for automation. The devil, however, is in the detail and automation can be complex. At a high level, though, the process is quite straight-forward. It involves:

- Identifying a list of jobs
- Identifying a list of corresponding job requirements
- Identifying worker attributes that indicate candidates are qualified
- Ranking candidates based on selection tools, for a final human decision

Competencies come in during steps two and three. An analysis of the job requirements provides a list of the competencies we need to assess candidates against. It also allows us to score candidates on appropriate attributes with selection tools that we can then use to rank candidate suitability. As the amount of historical data grows, the accuracy of the decisions made about candidates increases.

Without accurate knowledge of what skills are required for the job, however, all bets are off. Competencies provide this knowledge. Selection results that are not informed by strong competency frameworks are no more trustworthy in selecting high performing employees than an old boy's network that shoulder taps people for important positions based on who they know rather than what they can do.

Of course, job analysis to identify competencies has always been important to personnel selection. Even in traditional recruiting, a lack of well developed and implemented competency frameworks hinders effective decision-making. However, as AI is deployed across organizations, the cost of poor decision-making due to weak competency systems is magnified.

Competencies in AI career development

One of the biggest challenges in career coaching can be the identification of appropriate potential career paths for employees. Organizations realize that clear progression opportunities and successful job transitions are integral to effective talent management strategies, but the reality is that most employees are left to their own devices when it comes to career progression.

The pick of the crop of high performing employees may be singled out for development opportunities via high potential programs, but this is usually with a view to succession planning and organizational performance, rather than out of a genuine interest in employees' careers.

Part of the reason for this 'hands off' approach is that career coaching, until now, has been an extremely high-touch, human-driven process with results that are not tangible beyond employee reports of satisfaction with coaching sessions. Now, however, artificial intelligence is being applied to model employment patterns within organizations in a way that benefits the career development of workers and the performance of businesses.

At a basic level, the histories of worker transitions for every job in an organization can be mapped, and the shortest paths between where workers are now and where they want to be can be identified. In more sophisticated approaches, opportunities will only be recommended in situations where the majority of workers made successful transitions, judged by assessments of competency-based performance histories.

As in the selection scenario, the degree of match between competencies needed for a job and a candidate's current skill levels can also be calculated before recommending progression opportunities. As the time horizon over which a career is considered increases, required skill sets, rather than specific jobs, can also be recommended. AI-driven chat bots can even enter into career conversations that emulate discussions career counselors would usually facilitate.

AI has enormous potential to breathe life into career coaching in business, and to offer career services beyond the small proportion of workers the business monitors for succession planning. Capitalizing on the opportunity, however, requires a strong and well-embedded approach to competencies.

Competencies in AI learning

Industrial psychologists and training professionals use the term 'instructional design' to describe the process of conducting a job analysis to identify the competencies required to perform a role. Instructional design has the following key steps:

- Assessing employees against the performance requirements
- Designing training programs that address skill gaps
- Evaluating the degree of transfer between the training and the actual work environment

Historically, the challenge of learning in organizations has been addressed in two ways:

- Corporate, organization-wide training programs are used to deliver training for everyone in an organization. One example is cybersecurity training. Regardless of the role you perform, cybersecurity knowledge is essential for protecting organizations from disruptive cyber attacks.
- In addition, most managers have discretionary budgets for training and development of team members in job specific areas. Such training resides outside corporate training programs. Historically, this spend was largely determined by the manager in consultation with the employee, with little external perspective on what was available, or effective.

The shift to learning management systems (LMS) has allowed more effective delivery, tracking and evaluation of corporate-wide training than was previously possible with paper-based training management systems. AI learning now promises to take learning (i.e., training and development at work) to new levels.

Curation applications that use AI can now organize vast sets of learning resources, and present these to workers in intuitive ways. For example, learning content can be curated and presented according to individualized assessments of a learner's needs. The content can also be tailored to a worker's learning preference, and to a schedule that reflects whether the learning is for an immediate application (training) or for some yet to be determined point (development).

In this learning scenario, competencies play two critical roles:

- High grade content from competency frameworks enables the development of training content that employees perceive as relevant.
- Matching learning requirements to jobs at speed and at scale is only possible with accurate competency models.

Competencies and the future of HR

In this paper, we have explained why high quality competency frameworks are intricately connected to the effective deployment of AI in HR. The first step for CHROs looking to prepare their organizations for the benefits of AI should be to evaluate the quality of their organizational competency frameworks. This step is a prerequisite for realizing the potential of AI in HR.

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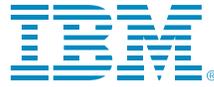
About the authors

Nigel Guenole, Ph.D. is an Executive Consultant with the Smarter Workforce Institute and a Senior Lecturer in Management at Goldsmiths, University of London. He is known for his work in workforce analytics, statistical modeling and psychological measurement. Dr. Guenole's work has appeared in leading scientific journals including *Industrial Organizational Psychology: Perspectives on Science and Practice* and *Frontiers in Quantitative Psychology & Measurement*, as well as in the popular press. Dr. Guenole is the current external examiner for organizational behavior programs at London School of Economics (LSE) and University College London (UCL). He is a Chartered Occupational Psychologist and an Associate Fellow of the British Psychological Society (BPS). He is registered with the Health & Care Professions Council (HCPC) in the United Kingdom, is a member of the Academy of Management (AoM), and is an international affiliate of the Society for Industrial and Organizational Psychology in the United States (SIOP). At Goldsmiths Dr. Guenole teaches courses on leadership and statistical modelling. Nigel is also co-author of the book *The Power of People: Learn How Successful Organizations Use Workforce Analytics To Improve Business Performance* (Pearson, 2017).

Chris Lamb, Program Director, IBM Talent Management is currently responsible for the strategy and product management of IBM Kenexa Talent Frameworks. Chris has over 20 years' experience in the enterprise software industry including leadership roles in product management, strategy, marketing, and business development. Chris is an alumni of Duke University, with a B.S degree in electrical engineering and an MBA from Fuqua School of Business.

Sheri Feinzig, Ph.D. is the Director, IBM Talent Management Consulting and Smarter Workforce Institute and has over 20 years' experience in human resources research, organizational change management and business transformation. Sheri has applied her analytical and methodological expertise to many research based projects on topics such as employee retention, employee experience and engagement, job design and organizational culture. She has also led several global, multi-year sales transformation initiatives designed to optimize seller territories and quota allocation. Additional areas of expertise include social network analysis, performance feedback and knowledge management.

Sheri received her Ph.D. in Industrial-Organizational Psychology from the University at Albany, State University of New York. She has presented on numerous occasions at national and international conferences and has co-authored a number of manuscripts, publications and technical reports. She has served as an adjunct professor in the Psychology departments of Rensselaer Polytechnic Institute in Troy, New York and the Illinois Institute of Technology in Chicago, Illinois, where she taught doctoral, masters and undergraduate courses on performance appraisal, tests and measures. Sheri is also co-author of the book *The Power of People: Learn How Successful Organizations Use Workforce Analytics To Improve Business Performance* (Pearson, 2017).



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New Orchard Road,
Armonk, NY 10504

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