

Architecting the Competencies for Adaptation to Climate Change Open Competency Model

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Designing a competency model on climate change adaptation

One of the most important pieces of work going on at Ibbaka is our project with the ResiliencebyDesign (RdB) team at Royal Roads. This team, led by Dr. Robin Cox, has been commissioned to design a competency model for adaptation to climate change as

part of the Inspiring Climate Action project. The work is being sponsored by Natural Resources Canada with their Building Regional Adaptation Capacity and Expertise grants, and the BC Climate Action Secretariat.

In their early work the RdB team found significant interest in building competencies for adaptation to climate change among BC professionals. The organizations below were surveyed and the results are available in the report [Planning for Climate Change Adaptation Continuing Professional Development](#).

Professional Organization	Membership
Association of British Columbia Forest Professionals (ABCFP)	5,300+
Applied Science Technologists and Technicians of British Columbia (ASTTBC)	10,215
British Columbia Institute of Agrologists (BCIA)	1,300+
British Columbia Society of Landscape Architects (BCSLA)	600-700
College of Applied Biologists (CAB)	2,300
Engineers and Geoscientists of British Columbia (EGBC)*	34,000
Planning Institute of British Columbia (PIBC)	1,500+

Given the size of the audience, the importance of this work and the need to make the [competency model widely available](#), adaptable and connected with other talent management systems, the RdB team selected Ibbaka Talent as the competency management platform.

In September, the RdB team and Ibbaka Talent held a design session to work out the initial architecture for the model. Competency models come in all shapes and sizes and the goal was to come up with an architecture and a shared understanding of the different components in the model.

We began by defining the use cases for the model and defining the user persona. Here is a summary of this critical context.

Users of an Adaptation to Climate Change Competency Model

Adaptation Professionals

This is an emergent profession and is not yet formally recognized in Canada. In the United States, there is the American Society of Adaptation Professionals (ASAP). The ASAP is currently developing a high-level competency model, but it is not granular enough for the Climate Change Action Plan use cases.

Professionals

Engineers, landscape architects, planners, foresters, agrologists, architects. These people already have professional bodies (see below) that have formal certifications. They are interested in adding adaptation to climate change to their current expertise. A competency model will help them to understand what skills they need and where to apply them. It can also link them to learning resources.

Governance Bodies for Professionals

The professionals are members of professional associations. These associations already have competency models (although they use many different names for these models, from 'body of knowledge' to 'required skills') and they want to add the most relevant skills for adaptation to climate change. They are likely to take components of the Adaptation to Climate Change Competency Model and add these to existing models rather than adopt a new model.

Organization Leaders

Many organizations are concerned about how they will adapt to climate change. See the McKinsey report [Earth to CEO: Your company is already at risk from climate change](#). Governments at all levels, public and private corporations, are all under intense pressure to have adaptation plans in place, and they are moving to build the necessary capabilities in their organizations. These people need to have a high-level summary of the necessary competencies and then a way to help their organizations build the needed capabilities. They are likely to pass the competency model on to their human resources leaders for action.

Human Resources Leaders

Accountable for training, hiring, may have some organizational design responsibilities. Use competency models to inform job architectures and to define the capabilities the organization needs. Also use these models as a way to assess organizational readiness.

Learning Program & Curriculum Designers

Responsible for the design of learning and training resources. Skills and competencies get mapped to learning objectives at this point. This is a large group and includes people at

colleges and universities that want to add programs, courses and professional training for adaptation competencies, **professional training organizations** that see this as a growth area, **professional associations**(see above) and **corporate learning and development leaders** who need to build adaptation to climate change capabilities in their organizations. These organizations may also develop certification programs.

Students

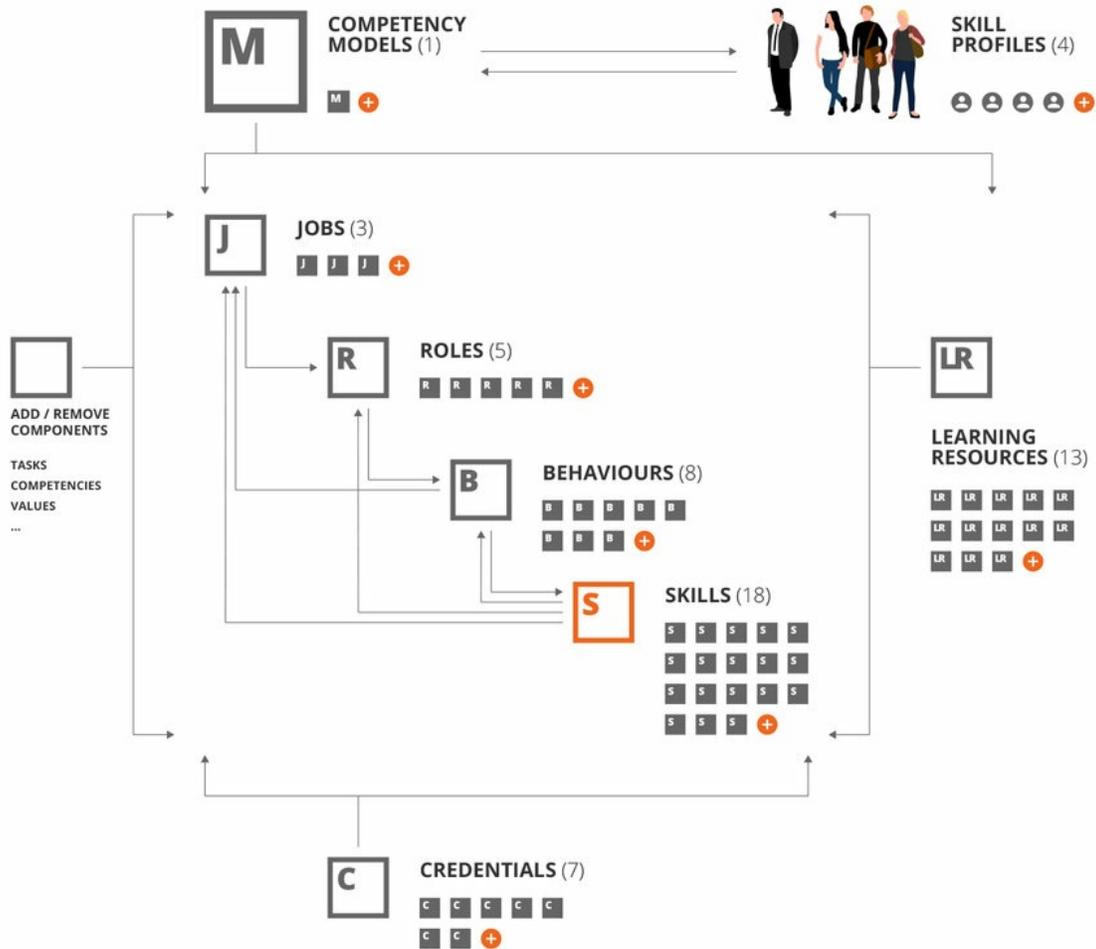
There is a strong awareness among young people of the severity of climate change and how it will impact their lives. Universities are reporting a growing demand for courses in this area. The competency model will help students guide their learning and help them see if they want to pursue a career in this emerging field.

There are many interactions between these different users. Professionals work for Organizations and are trained by Universities and their Professional Associations. Students study at Universities and become Professionals. Organizations and Professionals fund Professional Associations and rely on them for standards and certifications. A well grounded competency model can help all of these different actors coordinate their actions.

Once we had brainstormed the users and discussed their needs and how they would use the model we moved on to considering what should be included in the model.

Components of a competency model

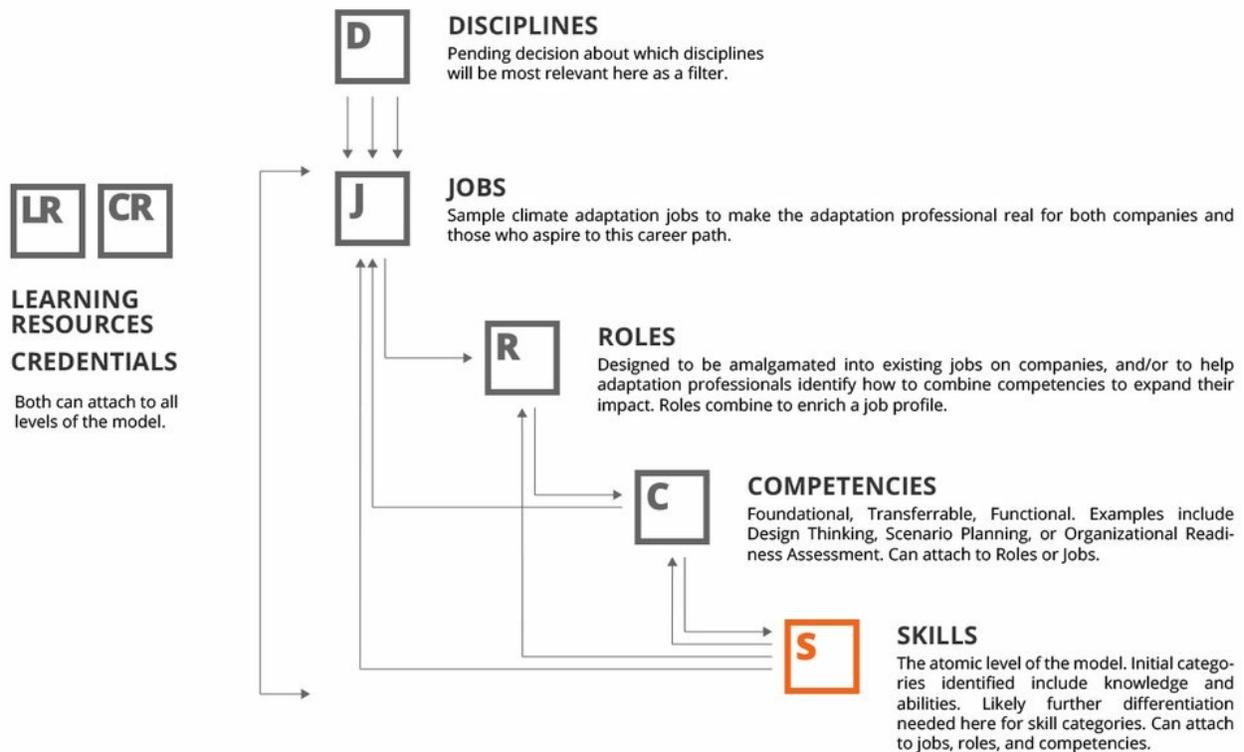
Competency models can include many different things and no competency model should include all of the possibilities. One principle of competency model design is to be choiceful and only include the components necessary.



Note that competency models connect to individual and organizational skill profiles. Competency models are a way to organize these profiles.

The Adaptation to Climate Change model is meant to be open and evolving and to serve many different use cases. The design goal was to keep it as open and flexible as possible while providing enough structure to make it usable.

This is the current model for the Adaptation to Climate Change Model.



The above model was built from the following possible components (all of which are supported in the People Insights Platform).

1. **Jobs** Formal positions within a specific organization
2. **Roles: Functions assumed or played by a person in a particular context (such as within a job or on a project)**
3. Behaviors: Specific ways a person demonstrates their knowledge, skills, attitudes and values
4. Tasks: Actions performed in pursuit of an outcome
5. **Competencies: The combinations of skills, attitudes and behaviors that suggest a person is proficient in an area of expertise**
6. Values: Ways of being or doing that hold some importance to the practitioner and help determine behaviors
7. **Learning Resources: Activities, people, documents, experiences that support capability enhancement**
8. Assessments: A set of evaluations to review proficiency in one or more capabilities
9. Experiences: A set of events that impact skills, capabilities, attitudes, values

10. Credentials: A set of certifications or professional designations
11. Questions: Questions that are used to better understand and assess the other objects in the model
12. **Skills: Granular descriptions of what is required to carry out a specific job, role or task**

(Skills are always part of our competency models as our AI relies on our underlying skill graph to make inferences.)

We are not quite done. In a large competency model like this one needs to be able to organize information in additional ways. One is the set of filters that will be applied. The filters make it easier to find all of the different components relevant to a specific interest. In this case, the design team decided to filter using disciplines and subdisciplines. This will make it easier for people to find the jobs, roles, competencies and skills that are most relevant to their own professions. Disciplines supported will include Forestry, Architecture, Landscape Architecture, Planning, Engineering (and its many subdisciplines) and so on.

Our platform has a set of default categories for all skills but one can also develop a custom category system. The default categories are Foundational, Social, Business, Technical, Design, Tool, Domain. This did not quite fit the ResiliencebyDesign team's vision so an alternative category system was devised.

The design of this category system is still a work in progress, but at this point the categories are Skills and Knowledge. Skills and Knowledge combine to create the ability to perform a competency.

The Resilience by Design team is now building out the model, populating it with the different jobs, roles, competencies and skills and identifying learning resources. This will include commissioning learning resources where major gaps are apparent. There will be many more cycles of design and consultation before the model is ready. The first public release is planned for February 2020, and the model will continue to evolve as more people interact with it and it is put into use.