COMPETENCY DICTIONARY

BEHAVIOURAL AND TECHNICAL COMPETENCIES

1. I have my space on www.slidehare.net/hossam08
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The Organizational Readiness Office, with the help of subject matter experts and CS representatives from numerous departments, developed the competency dictionaries specifically for the IT Community across government.

In today's workplace, it's not just completing tasks that's important. How people perform their jobs and the behaviors they demonstrate on the job are the key to success.

Although the focus of the competency dictionaries is on the skills, abilities and behaviors that are specific to jobs in IT Community, we assume that the behavioral dictionary will also be appropriate for other communities.

Competency Based Management

Competency Based Management is a proven methodology being used in the workplace by those who want to take an integrated approach to human resources management. At the centre of the system is the Job Competency Profile. The profile is based on the work descriptions and built by combining competency definitions from the behavioral and technical competency dictionaries.

The competency definitions describe the observable knowledge, skills, abilities and behaviors needed for successful job performance and include levels of proficiency that are described in terms of behavioral indicators. The indicators highlight the behaviors that are expected at a certain level of job performance ranging from the introductory and basic levels to the advanced and expert levels.

Once the Job Competency Profile has been created, it forms the foundation of the Competency Based Management system and can be used for the complete range of human resources planning and management functions. This includes developing statements of qualifications, staffing using behavioral-based interviewing techniques, implementing self-evaluation and performance management processes, and supporting learning and career development.

Using the Competency Dictionaries

The IT Community competency dictionaries are tools that can be used for developing competency profiles. The dictionaries help identify the success factors by defining the types and level of skills and behaviors needed for the job.

The Organizational Readiness Office will be developing generic job competency profiles based on the generic work descriptions that have been developed in collaboration with the IT Community. Until these are developed, you may want to refer to these dictionaries if you are developing work descriptions or statements of qualifications or are considering developing a competency profile.

What is important is that we all start to use a common language when we describe the skills, abilities and behaviors needed for IT jobs.

Two Types of Dictionaries

1. The Behavioral Competency Dictionary describes the non-technical competencies that apply to IT jobs. These competencies are generic in nature and are often shared by people across the organization. They reflect the values of the organization and describe its working culture. They include things like Adaptability, Communication, Decision Making, Planning and Organizing, Teamwork and Continuous Learning.
2. The Technical Competency Dictionary includes the skills, abilities and behaviors that are required when applying specific technical knowledge on the job. For example, Application Development Support and Maintenance, Database Design and Management, Security/ Information and Application Protection and Service Management Processes.

Both behavioral and technical competencies are included in the job competency profiles.

Take a Look

You can take a look at the competency dictionaries to get a better idea of the range of requirements or qualifications needed by IT workers.

These days, managers use competencies to screen and select candidates. They develop interview questions that focus on abilities and behaviors instead of tasks and experience. You may have had experience with this type of interview process already.

The dictionaries can help you identify the level of proficiency you are working at now. You can also see what is required at the next level and assess your ability to progress to that level. You are better able to plan your career by targeting areas of strength and areas that need improvement. By focusing on the competencies, you can determine your learning needs and be specific about what you need to learn.

Take a look at the dictionaries. Use them if you are developing competency profiles or learn more about what's needed for work in the IT Community.

Behavioural Competency Dictionary

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1. INTRODUCTION

What are Competencies?

Competencies are *observable* abilities, skills, knowledge, motivations or traits *defined in terms of the behaviours* needed for *successful* job performance. Competencies are not new. What is new is their integrated use across human resource functions.

How Are the Competencies Structured?

For all competencies in the dictionary, a definition is provided. Each competency also includes a proficiency scale that indicates the full range of expression of the competency. Most proficiency scales have five levels. Each proficiency level is described in terms of behavioural indicators. The behaviours at each level of the scale are illustrative rather than definitive; that is other examples of behaviour are possible. Each competency scale is cumulative which means that, although behaviors from lower levels are not repeated at higher level, they nonetheless apply.

How to Use this Dictionary?

The contents of this dictionary represent the behavioral or non-technical competencies that apply to jobs in the federal Public Service. The dictionary can be used for a variety of purposes including recruitment and staffing, learning and career development and performance management.

For each job, choose the competencies and proficiency learning that are most critical to performance excellence.

2. ADAPTABILITY

Adjusting own behaviors to work efficiently and effectively in light of new information, changing situations and/or different environments

LEVEL 1

RECOGNIZES HOW CHANGE WILL AFFECT WORK
- Accepts that things will change.
- Seeks clarification when faced with ambiguity or uncertainty.
- Demonstrates willingness to try new approaches.
- Suspends judgment; thinks before acting.
- Acknowledges the value of others' contributions regardless of how they are presented.

LEVEL 2

ADAPTS ONE'S WORK TO A SITUATION
- Adapts personal approach to meet the needs of different or new situations.
- Seeks guidance in adapting behavior to the needs of a new or different situation.

LEVEL 3

ADAPTS TO A VARIETY OF CHANGES
- Adapts to new ideas and initiatives across a wide variety of issues or situations.
- Shifts priorities, changes style and responds with new approaches as needed to deal with new or changing demands.

LEVEL 4

ADAPTS TO LARGE, COMPLEX AND/OR FREQUENT CHANGES
- Publicly supports and adapts to major/fundamental changes that show promise of improving established ways of operating.
- Seeks opportunities for change in order to achieve improvement in work processes, systems, etc.
- Maintains composure and shows self control in the face of challenges and change.

LEVEL 5

ADAPTS ORGANIZATIONAL STRATEGIES
- Anticipates change and makes large or long-term adaptations in organization in response to the needs of the situation.
- Performs effectively amidst continuous change, ambiguity and, at times, apparent chaos.

- Shifts readily between dealing with macro-strategic issues and critical details.

Note: "Adaptability" links to the competency "Management Excellence – Action Management," identified as relevant for federal Public Service leaders.

3. Continuous Learning

Identifying and addressing individual strengths and weaknesses, developmental needs and changing circumstances to enhance personal and organizational performance

LEVEL 1

ASSESSES AND MONITORS ONESELF TO MAINTAIN PERSONAL EFFECTIVENESS
- Continually self-assesses and seeks feedback from others to identify strengths and weaknesses and ways of improving.
- Pursues learning opportunities and ongoing development.

LEVEL 2

SEEKS TO IMPROVE PERSONAL EFFECTIVENESS IN CURRENT SITUATION
- Tries new approaches to maximize learning in current situation.
- Takes advantage of learning opportunities (e.g., courses, observation of others, assignments, etc.).

- Integrates new learning into work methods.

LEVEL 3

SEEKS LEARNING OPPORTUNITIES BEYOND CURRENT REQUIREMENTS
- Sets challenging goals and standards of excellence for self in view of growth beyond current job.
- Actively pursues self-development on an ongoing basis (technically and personally).

- Pursues assignments designed to challenge abilities.

LEVEL 4

ALIGNS PERSONAL DEVELOPMENT WITH OBJECTIVES OF ORGANIZATION
- Designs personal learning objectives based on evolving needs of the portfolio or business unit.
- Uses organizational change as an opportunity to develop new skills and knowledge.

LEVEL 5

ALIGNS PERSONAL LEARNING WITH ANTICIPATED CHANGE IN ORGANIZATIONAL STRATEGY
- Identifies future competencies and expertise required by the organization and develops and pursues learning plans accordingly.
- Continuously scans the environment to keep abreast of emerging developments in the broader work context.

Note: "Continuous Learning" links to the competency "Management Excellence – Action Management" identified as relevant for federal Public Service leaders.

4. Communication

Listening to others and communicating in an effective manner that fosters open communication

LEVEL 1

LISTENS & CLEARLY PRESENTS INFORMATION

- Makes self available and clearly encourages others to initiate communication.
- Listens actively and objectively without interrupting.

- Checks own understanding of others' communication (e.g., repeats or paraphrases, asks additional questions).

- Presents appropriate information in a clear and concise manner, both orally and in writing.

LEVEL 2

FOSTERS TWO-WAY COMMUNICATION

- Elicits comments or feedback on what has been said.
- Maintains continuous open and consistent communication with others.

- Openly and constructively discusses diverse perspectives that could lead to misunderstandings.

- Communicates decisions or recommendations that could be perceived negatively, with sensitivity and tact.

- Supports messages with relevant data, information, examples and demonstrations.

LEVEL 3

ADAPTS COMMUNICATION TO OTHERS

- Adapts content, style, tone and medium of communication to suit the target audience's language, cultural background and level of understanding.
- Takes others' perspectives into account when communicating, negotiating or presenting arguments (e.g., presents benefits from all perspectives).

- Responds to and discusses issues/questions in an understandable manner without being defensive and while maintaining the dignity of others.

- Anticipates reactions to messages and adapts communications accordingly.

COMMUNICATES COMPLEX MESSAGES

- Handles complex on-the-spot questions (e.g., from senior public officials, special interest groups or the media).
- Communicates complex issues clearly and credibly with widely varied audiences.

- Uses varied communication systems, methodologies and strategies to promote dialogue and shared understanding.

- Delivers difficult or unpopular messages with clarity, tact and diplomacy.

LEVEL 5

COMMUNICATES STRATEGICALLY

- Communicates strategically to achieve specific objectives (e.g., considering such aspects as the optimal message to present, timing and forum of communication).
- Identifies and interprets departmental policies and procedures for superiors, subordinates and peers.

- Acknowledges success and the need for improvement.

5. Organizational and Environmental Awareness

Understanding the workings, structure and culture of the organization as well as the political, social and economic issues, to achieve results

LEVEL 1

UNDERSTANDS FORMAL STRUCTURE

- Monitors work to ensure it aligns with formal procedures and the organization's accountabilities.
- Recognizes and uses formal structure, rules, processes, methods or operations to accomplish work.

- Actively supports the public service mission and goals.

LEVEL 2

UNDERSTANDS INFORMAL STRUCTURE AND CULTURE

- Uses informal structures; can identify key decision-makers and influencers.
- Effectively uses both formal and informal channels and networks for acquiring information, assistance and accomplishing work goals.

LEVEL 3

EFFECTIVELY OPERATES IN EXTERNAL ENVIRONMENTS

- Achieves solutions acceptable to varied parties based on understanding of issues, climates and cultures in own and other organizations.
- Accurately describes the issues and culture of external stakeholders. Uses this information to negotiate goals and initiatives.

LEVEL 4

UNDERSTANDS ORGANIZATIONAL POLITICS, ISSUES AND EXTERNAL INFLUENCES

- Anticipates issues, challenges and outcomes and effectively operates to best position the organization.
- Supports the changing culture and methods of operating, if necessary, for the success of the organization.

- Ensures due diligence by keeping informed of business and operational plans and practices.

LEVEL 5

OPERATES EFFECTIVELY IN A BROAD SPECTRUM OF POLITICAL, CULTURAL AND SOCIAL MILIEU

- Demonstrates broad understanding of social and economic context within which the organization operates.
- Understands and anticipates the potential trends of the political environment and the impact these might have on the organization.

- Operates successfully in a variety of social, political and cultural environments.

- Uses organizational culture as a means to influence and lead the organization.

Note: "Organizational and Environmental Awareness" links to the competency "Action Management – Design and Execution" identified as relevant for federal Public Service leaders.

6. Creative Thinking

Questioning conventional approaches, exploring alternatives and responding to challenges with innovative solutions or services, using intuition, experimentation and fresh perspectives.

LEVEL 1

ACKNOWLEDGES THE NEED FOR NEW APPROACHES

- Is open to new ideas.
- Questions the conventional approach and seeks alternatives.

- Recognizes when a new approach is needed; integrates new information quickly while considering different options.

LEVEL 2

MODIFIES CURRENT APPROACHES

- Analyzes strengths and weaknesses of current approaches.
- Modifies and adapts current methods and approaches to better meet needs.

- Identifies alternate solutions based on precedent.

- Identifies an optimal solution after weighing the advantages and disadvantages of alternative approaches.

LEVEL 3

INTRODUCES NEW APPROACHES

- Searches for ideas or solutions that have worked in other environments and applies them to the organization.
- Uses existing solutions in innovative ways to solve problems.

- Sees long-term consequences of potential solutions.

LEVEL 4

CREATES NEW CONCEPTS
- Integrates and synthesizes relevant concepts into a new solution for which there is no previous experience.
- Creates new models and methods for the organization.

- Identifies flexible and adaptable solutions while still recognizing professional and organizational standards.

LEVEL 5

NURTURES CREATIVITY
- Develops an environment that nurtures creative thinking, questioning and experimentation.
- Encourages challenges to conventional approaches.

- Sponsors experimentation to maximize potential for innovation.

Note: "Creative Thinking" links to the competency "Strategic Thinking," identified as relevant for federal Public Service leaders.

7. Networking / Relationship Building

Building and actively maintaining working relationships and/or networks of contacts to further the organization's goals

LEVEL 1

ACCESSES SOURCES OF INFORMATION
- Seeks information from others (e.g., colleagues, customers).
- Maintains personal contacts in other parts of the organization with those who can provide work-related information.

LEVEL 2

BUILDS KEY CONTACTS
- Seeks out the expertise of others and develops links with experts and information sources.
- Develops and nurtures key contacts as a source of information.

- Participates in networking and social events internal and external to the organization.

LEVEL 3

SEEKS NEW NETWORKING OPPORTUNITIES FOR SELF AND OTHERS.
- Seeks opportunities to partner and transfer knowledge (e.g., by actively participating in trade shows, conferences, meetings, committees, multi-stakeholder groups and/or seminars).

- Cultivates personal networks in different parts of the organization and effectively uses contacts to achieve results...

- Initiates and develops diverse relationships.

LEVEL 4

STRATEGICALLY EXPANDS NETWORKS

- Builds networks with parties that can enable the achievement of the organization's strategy.
- Brings informal teams of experts together to address issues/needs, share information and resolve differences, as required.

- Uses knowledge of the formal or informal structure and the culture to further strategic objectives.

LEVEL 5

CREATES NETWORKING OPPORTUNITIES

- Creates and facilitates forums to develop new alliances and formal networks.
- Identifies areas to build strategic relationships.

- Contacts senior officials to identify potential areas of mutual, long-term interest.

8. Conflict Management

Preventing, managing and/or resolving conflicts

LEVEL 1

IDENTIFIES CONFLICT

- Recognizes that there is a conflict between two or more parties.
- Brings conflict to the attention of the appropriate individual(s).

LEVEL 2

ADDRESSES EXISTING CONFLICT

- Listens to differing points of view and emphasizes points of agreement as a starting point to resolving differences...
- Openly identifies shared areas of interest in a respectful and timely manner.

LEVEL 3

ANTICIPATES AND ADDRESSES SOURCES OF POTENTIAL CONFLICT

- Anticipates and takes action to avoid/reduce potential conflict (e.g., by encouraging and supporting the various parties to get together and attempt to address the issues themselves).
- Refocuses teams on the work and end-goals, and away from personality issues.

LEVEL 4

INTRODUCES STRATEGIES FOR RESOLVING EXISTING AND POTENTIAL CONFLICT

- Provides consultation to or obtains consultation / mediation for those who share few common interests and who are having a significant disagreement.
- Introduces innovative strategies for effectively dealing with conflict (e.g., mediation, collaborative and "mutual gains" strategies).

LEVEL 5

CREATES AN ENVIRONMENT WHERE CONFLICT IS RESOLVED APPROPRIATELY

- Creates a conflict-resolving environment by anticipating and addressing areas where potential misunderstanding and disruptive conflict could emerge.
- Models constructive approaches to deal with opposing views when personally challenging the status quo and when encouraging others to do so as well.

9. Stewardship of Resources

Ensures the effective, efficient and sustainable use of Public Service resources and assets: human and financial resources, real property and business information.

LEVEL 1

USES RESOURCES EFFECTIVELY

- Protects and uses resources and assets in a conscientious and effective manner.
- Identifies wasteful practices and opportunities for optimizing resource use.

LEVEL 2

ENSURES EFFECTIVE USE OF RESOURCES

- Monitors and ensures the efficient and appropriate use of resources and assets.
- Explores ways of leveraging funds to expand program effectiveness.

LEVEL 3

CONTROLS RESOURCE USE

- Allocates and controls resources and assets within own area.
- Implements ways of more effectively utilizing resources and assets.
- Assigns and communicates roles and accountabilities to maximize team effectiveness; manages workload.

LEVEL 4

IMPLEMENTS SYSTEMS TO ENSURE STEWARDSHIP OF RESOURCES

- Identifies gaps in resources that impact on the organization's effectiveness.
- Develops strategies to address resource gaps/issues.
- Ensures alignment of authority, responsibility and accountability with organizational objectives.
- Ensures that information and knowledge sharing is integrated into all programs and processes.

- Acts on audit, evaluation and other objective project team performance information.

LEVEL 5

ENSURES STRATEGIC STEWARDSHIP OF RESOURCES
- Directs resources to those areas where they will most effectively contribute to long-term goals.
- Sets overall direction for how resources and assets are to be used in order to achieve the vision and values.

- Institutes organization-wide mechanisms and processes to promote and support resource management.

Note: "Stewardship of Resources" links to the competency "Management Excellence," identified as relevant for federal Public Service leaders.

10. Risk Management

Identifying, assessing and managing risk while striving to attain objectives

LEVEL 1

IDENTIFIES POSSIBLE RISKS
- Describes risk factors related to a situation/activity.
- Uses past experience and best practices to identify underlying issues, potential problems and risks.

- Plans for contingencies.

- Identifies possible cause-effect relationships.

LEVEL 2

TAKES CALCULATED RISKS
- Takes calculated risks with minor, but non-trivial, consequences of error (e.g., risks involving potential loss of some time or money but which can be rectified).
- Makes decisions based on risk analysis.

- Makes decisions in the absence of complete information.

LEVEL 3

PERSONALLY TAKES SIGNIFICANT RISKS
- Personally takes calculated risks with significant consequences (e.g., significant loss of time or money) but which can be rectified.
- Anticipates the risks involved in taking action.

- Identifies possible scenarios regarding outcomes of various options for action.

- Conducts ongoing risk analysis, looking ahead for contingent liabilities and opportunities and astutely identifying the risks involved.

LEVEL 4

DESIGNS STRATEGIES FOR DEALING WITH HIGH-RISK INITIATIVES

- Implements initiatives with high potential for pay-off to the organization, where errors cannot be rectified, or only rectified at significant cost.
- Conducts risk assessment when identifying or recommending strategic and tactical options.

- Encourages responsible risk taking, recognizing that every risk will not pay off.

LEVEL 5

PROVIDES ORGANIZATIONAL GUIDANCE ON RISK
- Provides a supportive environment for responsible risk taking (e.g., by supporting decisions of others).
- Oversees the development of guidelines, principles and approaches to assist decision-making when risk is a factor.

- Provides guidance on the organizational tolerance for risk.

- Develops broad strategies that reflect in-depth understanding and assessment of operational, organizational, and political realities and risks.

11. Stress Management

Maintaining effectiveness in the face of stress

LEVEL 1

WORKS IN LOW LEVEL STRESS SITUATIONS
- Keeps functioning effectively during periods of on-going low intensity stress.
- Maintains focus during situations involving limited stress.

- Seeks to balance work responsibilities and personal life responsibilities.

LEVEL 2

ADJUSTS TO TEMPORARY PEAKS IN STRESS LEVELS
- Maintains composure when dealing with short but intense stressful situations.
- Understands personal stressors and takes steps to limit their impact.

- Keeps issues and situations in perspective and reacts appropriately (e.g., does not overreact to situations, what others say, etc.).

LEVEL 3

ADAPTS TO PROLONGED STRESS
- Effectively withstands the effects of prolonged exposure to one or few stressors by modifying work methods.
- Maintains sound judgment and decision making despite on-going stressful situations.

- Controls strong emotions or other stressful responses and takes action to respond constructively to the source of the problem.

LEVEL 4

EMPLOYS STRESS MANAGEMENT STRATEGIES

- Develops and applies stress reduction strategies to cope with long exposure to numerous stressors or stressful situations.
- Recognizes personal limits for workload and negotiates adjustments to minimize the effects of stress, while still ensuring appropriate levels of productivity.

- Controls own emotions and calm others in stressful situations.

LEVEL 5

DEALS WITH STRESS AFFECTING THE ORGANIZATION

- Demonstrates behaviors that help others remain calm, yet focused and energized during periods of extreme stress affecting the organization.
- Maintains composure and shows self-control in the face of significant challenge facing the organization.

- Suspends judgment; thinks before acting.

- Identifies and consistently models ways of releasing or limiting stress within the organization.

Note: "Stress Management" is included in the competency "Management Excellence – People Management", a competency identified as relevant for federal Public Service leaders.

12. Influence

Gaining support from and convincing others to advance the objectives of the organization

LEVEL 1

USES FACTS AND AVAILABLE INFORMATION TO PERSUADE

- Uses appeals to reason, data, facts and figures.
- Uses concrete examples, visual aids and demonstrations to make a point.

- Describes the potential impact of own actions on others and how it will affect their perception of self.

LEVEL 2

ADAPTS RATIONALE TO INFLUENCE OTHERS

- Anticipates the effect of one's approach or chosen rationale on the emotions and sensitivities of others.
- Adapts discussions and presentations to appeal to the needs or interests of others.

- Uses the process of give-and-take to gain support.

- Builds relationships through fair, honest and consistent behavior.

LEVEL 3

DEMONSTRATES THE BENEFIT OF IDEAS

- Builds on successful initiatives and best practices internal and external to the organization to gain acceptance for ideas.
- Presents pros and cons and detailed analyses to emphasize the value of an idea.

- Persuades others by drawing from experience and presenting multiple arguments in order to support a position.

LEVEL 4

BUILDS COALITIONS, STRATEGIC RELATIONSHIPS AND NETWORKS

- Assembles coalitions, builds behind-the-scenes support for ideas and initiatives.
- Develops an extensive network of contacts.

- Uses group process skills to lead or direct a group.

LEVEL 5

DESIGNS COMPLEX INFLUENCE STRATEGIES

- Designs strategies that position and promote ideas and concepts to stakeholders.
- Uses indirect strategies to persuade, such as establishing alliances, using experts or third parties.

- Gains support by capitalizing on understanding of political forces affecting the organization.

13. Initiative

Identifying and dealing with issues proactively and persistently; seizing opportunities that arise

LEVEL

ADDRESSES CURRENT ISSUES

- Recognizes and acts on present issues.
- Offers ideas to address current situations or issues.

- Works independently. Completes assignments without constant supervision.

LEVEL 2

ADDRESSES IMMINENT ISSUES

- Takes action to avoid imminent problem or to capitalize on imminent opportunity.
- Looks for ways to achieve greater results or add value.

- Works persistently as needed and when not required doing so.

LEVEL 3

ACTS PROMPTLY IN A CRISIS SITUATION

- Acts quickly to address a crisis situation drawing on appropriate resources and experience with similar situations.
- Implements contingency plans when crises arise.

- Exceeds requirements of job; takes on extra tasks.

LEVEL 4

LOOKS TO THE FUTURE

- Takes action to avoid or minimize potential problems or maximize potential opportunities in the future by drawing on extensive personal experience.
- Defines and addresses high-level challenges that have the potential to advance the state-of-the art in an area.

- Starts and carries through on new projects.

LEVEL 5

ENCOURAGES INITIATIVE IN OTHERS

- Fosters an environment that anticipates and acts upon potential threats and/or opportunities.
- Coaches others to spontaneously recognize and appropriately act on upcoming opportunities.

- Gets others involved in supporting efforts and initiatives.

14. Team Leadership

Leading and supporting a team to achieve results

LEVEL 1

KEEPS THE TEAM INFORMED

- Ensures that team members have the necessary information to operate effectively.
- Establishes the direction/goal(s) for the team.

- Lets team members affected by a decision know exactly what is happening and gives a clear rationale for the decision.

- Sets an example for team members (e.g., respect of others' views, team loyalty, cooperating with others).

LEVEL 2

ENSURES THE NEEDS OF THE TEAM AND OF MEMBERS ARE MET

- Makes sure the practical needs of the team and team members are met.
- Makes decisions by taking into account the differences among team members, and overall team requirements and objectives.

- Ensures that the team's tasks are completed.

- Accepts responsibility for the team's actions and results.

LEVEL 3

ENSURES TEAM MEMBER INPUT

- Values and encourages others' input and suggestions.
- Stimulates constructive discussion of different points of view, focusing on the organization's strategic objectives, vision or values.

- Builds cooperation, loyalty and helps achieve consensus.

- Provides constructive feedback and recognizes all contributions.

- Ensures the respective strengths of team members are used in order to achieve the team's overall objectives.

LEVEL 4

EMPOWERS THE TEAM
- Communicates team successes and organization-wide contribution to other organizational members.
- Encourages the team to promote their work throughout the organization.

- Establishes the team's credibility with internal and external stakeholders.

LEVEL 5

INSPIRES TEAM MEMBERS
- Builds the commitment of the team to the organization's mission, goals and values.
- Aligns team objectives and priorities with the broader objectives of the organization.

- Ensures that appropriate linkages/partnerships between teams are maintained.

- Creates an environment where team members consistently push to improve team performance and productivity.

15. Change Leadership

Managing, leading and enabling the process of change and transition while helping others deal with their effects

LEVEL 1

MAKES OTHERS AWARE OF CHANGE
- Identifies and accepts the need and processes for change.
- Explains the process, implications and rationale for change to those affected by it.

- Invites discussion of views on the change

LEVEL 2

UNDERSCORES THE POSITIVE NATURE OF CHANGE
- Promotes the advantages of change.
- Clarifies the potential opportunities and consequences of proposed changes.

- Explains how change affects current practices.

LEVEL 3

MANAGES THE PROCESS FOR CHANGE
- Identifies important / effective practices that should continue after change is implemented
- Anticipates specific reasons underlying resistance to change and implements approaches that address resistance.

ALIGNS CHANGE INITIATIVES WITH ORGANIZATIONAL OBJECTIVES

- Links projects/objectives to department's/public service's change initiatives and describes the impact on operational goals.
- Presents realities of change and, together with staff, develops strategies for managing it.

- Identifies future needs for change that will promote progress toward identified objectives.

LEVEL 5

CHAMPIONS CHANGE

- Creates an environment that promotes and encourages change or innovation.
- Shares and promotes successful change efforts throughout the organization.

- Personally communicates a clear vision of the broad impact of change.

16. Client Focus

Identifying and responding to current and future client needs; providing service excellence to internal and external clients

LEVEL 1

RESPONDS TO CLIENT REQUESTS

- Identifies client needs and expectations.
- Responds to requests efficiently and effectively.

- Takes action beyond explicit request within established service standards.

- Refers complex questions to a higher decision-making level.

- Meets client needs in a respectful, helpful and responsive manner.

- Seeks feedback to develop a clear understanding of client needs and outcomes.

- Uses client satisfaction monitoring methodologies to ensure client satisfaction.

- Adjusts service based on client feedback.

LEVEL 2

BUILDS POSITIVE CLIENT RELATIONS

- Contacts clients to follow up on services, solutions or products to ensure that their needs have been correctly and effectively met.
- Understands issues from the client's perspective.

- Keeps clients up-to-date with information and decisions that affect them.

- Monitors services provided to clients and makes timely adjustments as required.

LEVEL 3

ANTICIPATES AND ADAPTS TO CLIENT NEEDS

- Maintains ongoing communication with clients.
- Regularly and systematically contacts clients or prospective clients to determine their needs.
- Uses understanding of client's perspective to identify constraints and advocate on their behalf.
- Works with clients to adapt services, products or solutions to meet their needs.
- Encourages co-workers and teams to achieve a high standard of service excellence.
- Anticipates areas where support or influence will be required and discusses situation/concerns with appropriate individuals.
- Proposes new, creative and sound alternatives to improve client service.

LEVEL 4

FOSTERS A CLIENT-FOCUSED CULTURE

- Tracks trends and developments that will affect own organization's ability to meet current and future client needs.
- Identifies benefits for clients; looks for ways to add value.
- Seeks out and involves clients or prospective clients in assessing services, solutions or products to identify ways to improve.
- Establishes service standards and develops strategies to ensure staff meets them.

LEVEL 5

CONSIDERS THE STRATEGIC DIRECTION OF CLIENT FOCUS

- Communicates the organization's mission, vision and values to external clients.
- Strategically and systematically evaluates new opportunities to develop client relationships.
- Creates an environment in which concern for client satisfaction is a key priority.
- Links a comprehensive and in-depth understanding of clients' long-term needs and strategies with current and proposed projects/initiatives.
- Recommends/ determines strategic business direction to meet projected needs of clients and prospective clients.

17. Partnering

Seeking and building strategic alliances and collaborative arrangements through partnerships to advance the objectives of the organization

LEVEL 1

OPERATES EFFECTIVELY WITHIN PARTNERSHIPS

- Understands the roles played by partners. Identifies and refers to areas of mutual interest as a means of establishing a business relationship.
- Communicates openly, builds trust and treats partners fairly, ethically and as valued allies.

- Meets partner needs by responding to requests efficiently and effectively.

- Recognizes the contributions of partners.

LEVEL 2

MANAGES EXISTING PARTNERSHIPS

- Works with existing partners, honoring established agreements/ contracts.
- Monitors partnership arrangements to ensure that the objectives of the partnership remain on target.

- Seeks input from partners to ensure that objectives are achieved.

- Seeks mutually beneficial solutions with partners.

LEVEL 3

SEEKS OUT PARTNERSHIP OPPORTUNITIES

- Initiates partnership arrangements that promote organizational objectives.
- Assesses the value of entering into partner relationships in terms of both short- and long- term return on investment.

- Develops new and mutually beneficial partnerships that also serve the interests of the broader community.

- Identifies benefits of a partnership and looks for ways to add value for the partner.

LEVEL 4

FACILITATES PARTNERSHIPS

- Provides advice and direction on the types of partner relationships to pursue, as well as ground rules for effective partner relationships.
- Supports staff in taking calculated risks in partner relationships.

- Negotiates, as necessary, to assist others to address issues or resolve problems surrounding partner relationships.

- Identifies when modifications and terminations of partnerships are needed and takes appropriate measures.

LEVEL 5

SETS STRATEGIC DIRECTION FOR PARTNERING

- Provides strategic direction on partnerships that the organization should be pursuing.
- Sets up an infrastructure that supports effective partner arrangements (e.g., principles and frameworks for assessing the value of partnerships; expert assistance in aspects of partnering).

- Takes advantage of opportunities to showcase excellent examples of partner arrangements throughout the organization.

- Creates and acts on opportunities for interactions that lead to strong partnerships within and external to the organization

Note: "Partnering" links to the competency "Engagement – Mobilizing People, Organizations, Partners", identified as relevant for federal Public Service leaders.

18. Developing Others

Fostering the development of others by providing a supportive environment for enhanced performance and professional growth

LEVEL 1

SHARES EXPERTISE WITH OTHERS
- Regularly shares expertise with team members to support continuous learning and improvement.
- Advises guides and coaches others by sharing experiences and discussing how to handle current or anticipated concerns.

LEVEL 2

SUPPORTS INDIVIDUAL DEVELOPMENT AND IMPROVEMENT
- Provides performance feedback and support, reinforcing strengths and identifying areas for improvement.
- Encourages staff to develop and apply their skills.

- Suggests to individuals ways of improving performance and competence.

LEVEL 3

PROMOTES ONGOING LEARNING AND DEVELOPMENT
- Helps team members develop their skills and abilities.
- Engages in development and career planning dialogues with employees.

- Works with employees and teams to define realistic yet challenging work goals.

- Encourages team members to develop learning and career plans and follows-up to guide development and measure progress.

- Advocates and commits to ongoing training and development to foster a learning culture.

LEVEL 4

PROVIDES OPPORTUNITIES FOR DEVELOPMENT

- Ensures that resources and time are available for development activities.
- Ensures that all employees have equitable access to development opportunities.

- Provides opportunities for development through tools, assignments, mentoring and coaching relationships etc.

LEVEL 5

CREATES A CONTINUOUS LEARNING AND DEVELOPMENT ENVIRONMENT

- Provides long-term direction regarding learning needs for staff and how to pursue the attainment of this learning.
- Institutes organization-wide mechanisms and processes to promote and support continuous learning and improvement.

- Manages the learning process to ensure it occurs by design rather than by chance.

Note: "Developing others" links to the competency "Management Excellence – People Management" identified as relevant for federal Public Service leaders.

19. Planning and Organizing

Defining tasks and milestones to achieve objectives, while ensuring the optimal use of resources to meet those objectives

LEVEL 1

PLANS TASKS AND ORGANIZES OWN WORK

- Identifies requirements and uses available resources to meet own work objectives in optimal fashion.
- Completes tasks in accordance with plans.

- Monitors the attainment of own works objectives and/or quality of the work completed.

- Sets priorities for tasks in order of importance.

LEVEL 2

APPLIES PLANNING PRINCIPLES TO ACHIEVE WORK GOALS

- Establishes goals and organizes work by bringing together the necessary resources.
- Organizes work according to project and time management principles and processes.

- Practices and plans for contingencies to deal with unexpected events or setbacks.

- Makes needed adjustments to timelines, steps and resource allocation.

- Directs issues to appropriate bodies when unable to resolve them within own area of responsibility.

DEVELOPS PLANS FOR THE BUSINESS UNIT

- Considers a range of factors in the planning process (e.g., costs, timing, customer needs, resources available, etc.).
- Identifies and plans activities that will result in overall improvement to services.

- Challenges inefficient or ineffective work processes and offers constructive alternatives.

- Anticipates issues and revise plans as required.

- Helps to remove barriers by providing resources and encouragement as needed.

LEVEL 4

INTEGRATES AND EVALUATES PLANS TO ACHIEVE BUSINESS GOALS.

- Establishes alternative courses of action, organizes people and prioritizes the activities of the team to achieve results more effectively.
- Ensures that systems are in place to effectively monitor and evaluate progress.

- Evaluates processes and results and makes appropriate adjustments to the plan.

- Sets, communicates and regularly assesses priorities.

LEVEL 5

PLANS AND ORGANIZES AT A STRATEGIC LEVEL

- Develops strategic plans considering short-term requirements as well as long-term direction.
- Plans work and deploys resources to deliver organization-wide results.

- Secures and allocates program or project resources in line with strategic direction.

- Sets and communicates priorities within the broader organization.

- Ensures sufficient resources are available to achieve set objectives.

Note: "Planning and Organizing" links to the competency "Action Management" identified as relevant for federal Public Service leaders.

20. Decision-Making

Making decisions and solving problems involving varied levels of complexity, ambiguity and risk

LEVEL 1

MAKES DECISIONS BASED SOLELY ON RULES

- Makes straightforward decisions based on pre-defined options using clear criteria/procedures.
- Consults with others or refers an issue/situation for resolution when criteria are not clear.

- Deals with exceptions within established parameters using clearly specified rules and procedures.

- Makes decisions involving little or no consequence of error.

- Verifies that the decision/resolution is correct.

LEVEL 2

MAKES DECISIONS BY INTERPRETING RULES

- Applies guidelines and procedures that require some interpretation when dealing with exceptions.
- Makes straight - forward decisions based on information that is generally clear and adequate.

- Considers the risks and consequences of action and/or decisions.

- Makes decisions involving minor consequence of error.

- Seeks guidance as needed when the situation is unclear.

LEVEL 3

MAKES DECISIONS IN SITUATIONS WHERE THERE IS SCOPE FOR INTERPRETATION OF RULES

- Applies guidelines and procedures that leave considerable room for discretion and interpretation.
- Makes decisions by weighing several factors, some of which are partially defined and entail missing pieces of critical information.

- As needed, involves the right people in the decision-making process.

- Balances the risks and implications of decisions across multiple issues.

- Develops solutions that address the root cause of the problem and prevent recurrence.

- Recognizes, analyzes and solves problems across projects and in complex situations.

LEVEL 4

MAKES COMPLEX DECISIONS IN THE ABSENCE OF RULES

- Simplifies complex information from multiple sources to resolve issues.
- Makes complex decisions for which there are no set procedures.

- Considers a multiplicity of interrelated factors for which there is incomplete and contradictory information.

- Balances competing priorities in reaching decisions.

- Develops solutions to problems, balancing the risks and implications across multiple projects.

- Recommends solutions in an environment of risk and ambiguity.

LEVEL 5

MAKES HIGH-RISK DECISIONS IN COMPLEX AND AMBIGUOUS SITUATIONS

- Makes high-risk strategic decisions that have significant consequences.
- Balances a commitment to excellence with the best interests of clients and the organization when making decisions.

- Uses principles, values and sound business sense to make decisions.

- Makes decisions in a volatile environment in which weight given to any factor can change rapidly.

- Reaches decisions assuredly in an environment of public scrutiny.

- Assesses external and internal environments in order to make a well-informed decision.

- Identifies the problem based on many factors, often complex and sweeping, difficult to define and contradictory (e.g., fiscal responsibility, the public good).

21. Analytical Thinking

Interpreting, linking, and analyzing information in order to understand issues

LEVEL 1

ANALYZES AND SYNTHESIZES INFORMATION

- Breaks down concrete issues into parts and synthesizes succinctly.
- Collects and analyses information from a variety of appropriate sources.

- Identifies the links between situations and information.

LEVEL 2

IDENTIFIES CRITICAL RELATIONSHIPS

- Sees connections, patterns or trends in the information available.
- Identifies the implications and possible consequences of trends or events.

- Draws logical conclusions, providing options and recommendations.

LEVEL 3

ANALYSES COMPLEX RELATIONSHIPS

- Analyses complex situations, breaking each into its constituent parts.

- Recognizes and assesses several likely causal factors or ways of interpreting the information available.

- Identifies connections between situations that are not obviously related.

LEVEL 4

APPLIES BROAD ANALYSIS

- Integrates information from diverse sources, often involving large amounts of information.
- Thinks several steps ahead in deciding on best course of action, anticipating likely outcomes.

- Develops and recommends policy framework based on analysis of emerging trends.

- Gathers information from many sources, including experts, in order to completely understand a problem/situation.

LEVEL 5

APPLIES A SYSTEMS PERSPECTIVE TO THE ANALYSIS OF ENTERPRISE-WIDE ISSUES

- Identifies multiple relationships and disconnects in processes in order to identify options and reach conclusions.
- Adopts a systems perspective, assessing and balancing vast amounts of diverse information on the varied systems and sub-systems that comprise and affect the working environment.

- Thinks beyond the organization and into the future, balancing multiple perspectives when setting direction or reaching conclusions (e.g., social, economic, partner, stakeholder interests, short- and long-term benefits, national and global implications).

Note: "Analytical thinking" links to the competency "Strategic Thinking" identified as relevant for federal Public Service leaders.

22. Results Orientation

Focusing personal efforts on achieving results consistent with the organization's objectives

LEVEL 1

STRIVES TO MEET WORK EXPECTATIONS

- Sets goals and works to meet established expectations; maintains performance levels.
- Pursues organizational objectives with energy and persistence. Sets high personal standards for performance.

- Adapts working methods in order to achieve objectives.

- Accepts ownership of and responsibility for own work.

LEVEL 2

CONSISTENTLY MEETS ESTABLISHED EXPECTATIONS

- Consistently achieves established expectations through personal commitment.

- Makes adjustments to activities/processes based on feedback.

LEVEL 3

SURPASSES ESTABLISHED EXPECTATIONS
- Exceeds current expectations and pushes for improved results in own performance.
- Takes on new roles and responsibilities when faced with unexpected changes.

LEVEL 4

SEEKS OUT SIGNIFICANT CHALLENGES
- Seeks significant challenges outside of current job scope.
- Works on new projects or assignments that add value without compromising current accountabilities.
- Guides staff to achieve tasks, goals, processes and performance standards.

LEVEL 5

PURSUES EXCELLENCE ON AN ORGANIZATIONAL LEVEL
- Models excellence and motivates fellow organizational members to follow his/her example.
- Encourages constructive questioning of policies and practices; sponsors experimentation and innovation.
- Holds staff accountable for achieving standards of excellence and results for the organization.

23. Teamwork

Working collaboratively with others to achieve common goals and positive results

LEVEL 1

PARTICIPATES AS A TEAM MEMBER
- Assumes personal responsibility and follows up to meet commitments to others.
- Understands the goals of the team and each team member's role within it.
- Deals honestly and fairly with others, showing consideration and respect.
- Willingly gives support to co-workers and works collaboratively rather than competitively.
- Shares experiences, knowledge and best practices with team members.

LEVEL 2

FOSTERS TEAMWORK
- Assumes responsibility for work activities and coordinating efforts.
- Promotes team goals.
- Seeks others' input and involvement and listens to their viewpoints.

- Shifts priorities, changes style and responds with new approaches as needed to meet team goals.

- Suggests or develops methods and means for maximizing the input and involvement of team members.

- Acknowledges the work of others.

LEVEL 3

DEMONSTRATES LEADERSHIP IN TEAMS

- Builds relationships with team members and with other work units.
- Fosters team spirit and collaboration within teams.

- Discusses problems/ issues with team members that could affect results.

- Communicates expectations for teamwork and collaboration.

- Facilitates the expression of diverse points of view to enhance teamwork.

- Capitalizes on the strengths of all members.

- Gives credit for success and acknowledges contributions and efforts of individuals to team effectiveness.

LEVEL 4

CAPITALIZES ON TEAMWORK OPPORTUNITIES

- Initiates collaboration with other groups/ organizations on projects or methods of operating.
- Capitalizes on opportunities and addresses challenges presented by the diversity of team talents.

- Supports and encourages other team members to achieve objectives.

- Encourages others to share experience, knowledge and best practices with the team.

- Encourages the team to openly discuss what can be done to create a solution or alternative.

LEVEL 5

BUILDS BRIDGES BETWEEN TEAMS

- Facilitates collaboration across the organization and with other organizations to achieve a common goal.
- Builds strong teams that capitalize on differences in expertise, competencies and background.

- Breaks down barriers (structural, functional, cultural) between teams, facilitating the sharing of expertise and resources.

24. Values and Ethics

Fostering and supporting the principles and values of the organization and the Public Service as a whole

LEVEL 1

DEMONSTRATES BEHAVIORS CONSISTENT WITH THE ORGANIZATION'S VALUES

- Treats others fairly and with respect.
- Takes responsibility for own work, including problems and issues.
- Uses applicable professional standards and established procedures, policies and/or legislation when taking action and making decisions.
- Identifies ethical dilemmas and conflict of interest situations and takes action to avoid and prevent them.
- Anticipates and prevents breaches in confidentiality and/or security.

LEVEL 2

IDENTIFIES ETHICAL IMPLICATIONS

- Identifies and considers different ethical aspects of a situation when making decisions.
- Identifies and balances competing values when selecting approaches or recommendations for dealing with a situation.

LEVEL 3

ALIGNS TEAM WITH ORGANIZATION'S VALUES AND ETHICS

- Fosters a climate of trust within the work team.
- Implements processes and structures to deal with difficulties in confidentiality and/or security.
- Ensures that decisions take into account ethics and values of the organization and Public Service as a whole.
- Interacts with others fairly and objectively.

LEVEL 4

PROMOTES THE ORGANIZATION'S VALUES AND ETHICS

- Advises others in maintaining fair and consistent dealings with others and in dealing with ethical dilemmas.
- Deals directly and constructively with lapses of integrity (e.g., intervenes in a timely fashion to remind others of the need to respect the dignity of others).

LEVEL 5

EXEMPLIFIES AND DEMONSTRATES THE ORGANIZATION'S VALUES AND ETHICS

- Defines, communicates and consistently exemplifies the organization's values and ethics.
- Ensures that standards and safeguards are in place to protect the organization's integrity (e.g., professional standards for financial reporting, integrity/ security of information systems).
- Identifies underlying issues that impact negatively on people and takes appropriate action to rectify the issues (e.g., systemic discrimination).

Note: "Ethics and Values" was identified as a competency relevant for federal Public Service leaders.

25. Visioning and Strategic Direction

Developing and inspiring commitment to a vision of success; supporting, promoting and ensuring alignment with the organization's vision and values

LEVEL 1

DEMONSTRATES PERSONAL WORK ALIGNMENT

- Sets personal work goals in line with operational goals of work area.
- Continually evaluates personal progress and actions to ensure alignment with organizational vision and operational goals.

- Liaises with others to ensure alignment with the business goals and vision of the organization.

LEVEL 2

PROMOTES TEAM ALIGNMENT

- Effectively communicates and interprets the strategic vision to employees within area of responsibility.
- Clearly articulates and promotes the significance and impact of employee contributions to promoting and achieving organizational goals.

- Monitors work of team to ensure alignment with strategic direction, vision and values for the organization.

- Identifies potential future directions for work area in line with vision.

- Proactively helps others to understand the importance of the strategy and vision.

LEVEL 3

ALIGNS PROGRAM/OPERATIONAL GOALS AND PLANS

- Works with teams to set program/operational goals and plans in keeping with the strategic direction.
- Regularly promotes the organization, its vision and values to clients, stakeholders and partners.

- Works with staff to set strategic goals for own sector of the organization.

- Assesses the gap between the current state and desired future direction and establishes effective ways for closing the gap in own sector.

LEVEL 4

INFLUENCES STRATEGIC DIRECTION

- Foresees obstacles and opportunities for the organization and acts accordingly.
- Defines issues, generates options and selects solutions, which are consistent with the strategy and vision.

- Scans, seeks out and assesses information on potential future directions.

- Provides direction and communicates the vision to encourage alignment within the organization.

- Energetically and persistently promotes strategic objectives with colleagues in other business lines.

LEVEL 5

DEVELOPS VISION

- Leads the development of the vision for the organization.
- Defines and continuously articulates the vision and strategy in the context of wider government priorities.

- Describes the vision and values in compelling terms to develop understanding and promote acceptance/ commitment among staff and stakeholders.

- Identifies, conceptualizes and synthesizes new trends or connections between organizational issues and translates them into priorities for the organization.

Note: "Visioning" was identified as a competency relevant for federal Public Service leaders.

Technical Competency Dictionary for the IT Community

Technical Competency Dictionary

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Introduction

Competencies are *observable* abilities, skills, knowledge, motivations or traits *defined in terms of the behaviors* needed for *successful* job performance. Often competencies reflect very general attributes common to all jobs (e.g., analytical thinking, problem solving, and client orientation). However, the goal of the present exercise was to identify **technical** competencies - competencies required from incumbents occupying various jobs/roles in the IT Community that reflect the unique knowledge and skill set expected from these IT employees – that would complement the *Behavioral Competency Dictionary*. The resulting *Technical Competency Dictionary for the IT Community* was developed in partnership with subject matter experts in the IT Community and is the outcome of numerous interviews and discussions with CS representatives in different roles and levels from several large departments.

How Are the Competencies Structured?

For all competencies in the dictionary, a brief definition is provided as well as a list of points of knowledge required. Each competency also includes a proficiency scale that indicates the full range of expression of the competency. Each proficiency scale has five levels indicating the depth and breadth to which knowledge and skill are required in the job. Each proficiency level is described in terms of behavioral indicators. **The behaviors at each level of the scale are illustrative rather than definitive; that is, other examples of behavior are possible and can be used at each level.** Each competency scale is cumulative which means that, although behaviors from lower levels are not repeated at higher level, they nonetheless apply.

1. **Introductory**: Demonstrates introductory understanding and ability and, with guidance, applies the competency in a few simple situations.
2. **Basic**: Demonstrates basic knowledge and ability and, with guidance, can apply the competency in common situations that present limited difficulties.

3. **Intermediate**: Demonstrates solid knowledge and ability, and can apply the competency with minimal or no guidance in the full range of typical situations. Would require guidance to handle novel or more complex situations.

4. **Advanced**: Demonstrates advanced knowledge and ability, and can apply the competency in new or complex situations. Guides other professionals.

5. **Expert**: Demonstrates expert knowledge and ability, and can apply the competency in the most complex situations. Develops new approaches, methods or policies in the area. Is recognized as an expert, internally and/or externally. Leads the guidance of other professionals.

1. Application Development/Support and Maintenance [1]

-*Knowledge and ability to design, define, construct, enhance, support and maintain application software on one or more platforms.*

Knowledge requirements:

- Systems Analysis and Design
  - Requirements Analysis
  - General/external design (includes design principles)
  - Use of established techniques to assist in the analysis of business data/information flows and database construction (e.g., data and functional modeling)

- Application Development and Commercial Off-The-Shelf (COTS) Management
  - Programming languages (e.g., software language structures, machine, assembly, procedural, non-procedural, object-oriented languages)
  - Standards and methods used in developing and maintaining a repository of information and processes (e.g., development standards including programming, user interface, design, naming, specifications)
  - System development processes, tools and methodologies (e.g., Systems Development Life Cycle including principles, best practices and standards used in designing and maintaining a formal procedure and a related repository of information)
  - Unit testing processes and practices
  - Application development tools (e.g., COTS development tools, technical productivity tools, workstation operating systems)
  - Policies and practices related to office productivity tools
  - Policies and practices related to website design and use of Inter/Intranet technologies within the Public Service

1. Introductory

- Demonstrates a basic level of understanding of software specifications or design techniques.
- Demonstrates a basic understanding of programming concepts.
- Demonstrates a general familiarity with one or more programming languages and/or methodologies.
- Understands the importance of testing, documentation and production assurance.
- Knows where to look for standards.

2. Basic

- Demonstrates a working knowledge of one or more programming languages.
- Writes or adapts software modules for testing and integration.
- Understands and employs basic development methods and standards.
- Tests/debugs program modules.
- Uses a testing tool and prepares basic test cases.
- Understands the migration cycle and prepares program for migration.
- Prepares operational documentation.

3. Intermediate

- Demonstrates a detailed knowledge of several programming environments and a good working knowledge of hardware and software interfaces.
- Writes original multi-module/complex programs or applies reusable modules.
- Designs, tests and integrates software modules and resolves programming errors using various debugging tools and techniques.
- Provides support, guidance and production assurance for common problems.
- Conducts impact analysis for proposed changes to or problems with the system.
- Prepares technical documentation (e.g., user guides, technical specifications).
- Undertakes routine analysis and works with designers and analysts to clarify and improve specifications or to identify alternative programming solutions.
- Enforces standards (e.g., at walkthroughs).

4. Advanced

- Demonstrates in-depth knowledge and capability in software construction, testing, infrastructure, configuration, a wide range of system development methodologies and operating standards.
- Demonstrates knowledge in multiple applications, data management systems and technologies or in a single area of expertise.
- Demonstrates application and corporate knowledge, and understands how a change would affect multiple applications.

- Makes recommendations/ decisions in application and program design, standards and program enhancements.

- Debugs very complex or urgent problems.

- Analyzes and models business functions, processes and information flow within or between systems.

- Provides guidance/mentors on programming practices and techniques to individuals and cross-functional teams.

5. Expert

- Demonstrates expert knowledge of software design, construction, programming trends, programming and scripting languages across government in multiple applications and data management systems or in a single area of expertise.
- Provides effective strategic direction to enterprise-wide application design.

- Guides and oversees multiple-concurrent software construction projects.

- Works with users at all levels to define system requirements and specify appropriate system environments to meet operational needs and system performance objectives.

- Presents software construction disciplines to peers in public forums.

- Develops policy and standards for software construction.

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[1] This competency does not include data management or database management (See Competency 4).

2. Architecture

-*Knowledge and ability to apply architecture theories, principles, concepts, practices, methodologies and frameworks.*

Knowledge requirements:

- Enterprise Architecture/Information Technology (IT) Strategy
  - Implementation/enforcement of policies and support

  - Architecture functions and the interrelationships with the organization's vision

  - Architecture direction, policies and practices with a focus on Government of Canada priorities

- Information Architecture

  - Organization of information to effectively support the work of the organization

- o Creation of an entity relationship model and an integrated function or process dependency model

- o Transaction services architecture, configuration and interfaces

- o Relationship between the information architecture and other architectures

- Systems Architecture

  - o Design of the systems architecture and how its components are connected and operate with each other and other applications

  - o Relationship between the systems architecture and other architectures (e.g., integrating technology and business)

- Technology Architecture

  - o Design of the fundamental hardware, software and telecommunications systems that provide the infrastructure on which business applications are developed and run (e.g., network topologies)

  - o Interrelationships of the various technologies and their respective roles

  - o Technical standards

  - o Relationship between the technology architecture and other architectures

- Government and Department Policies and Standards

  - o Business policy and standards development

  - o Privacy Act

  - o TBS Business Transformation Enablement Program (BTEP)

  - o Management of Government Information (MGI)

1. Introductory

- Possesses basic understanding of architecture principles.
- Reads and understands architecture specifications and models.

- Distinguishes between different architecture domains.

2. Basic

- Creates basic models based upon specifications.
- Defines key terms and concepts.

3. Intermediate

- Focuses on a single area of expertise.
- Produces analytic and candidate design models to be used for further analysis (e.g., telecommunications, networks).
- Demonstrates awareness of other architectures.
- Validates models created by projects and/or junior staff.
- Signs off functional models.

4. Advanced

- Demonstrates good understanding of architecture across the business lines and how they interact but focuses on a single architecture.
- Produces frameworks for a single architecture.
- Assesses new requirements and makes design recommendations.
- Signs off architecture models.
- Manages transformations.
- Defines metadata models and information models.
- Monitors standards.

5. Expert

- Understands how architecture relates to the organization's vision, how new business fits in the current business lines, the integration of business and technology, and relates government priorities to target architectures.
- Builds corporate data models.
- Delivers and signs off frameworks for architectures and integration models.
- Recommends priorities for business based upon the architecture.
- Understands and applies TB standards (e.g., ISO, WC3 Quality standards).
- Addresses governance issues.
- Defines metadata models at the enterprise level, information models and the interoperability model.
- Extends the body of knowledge and contributes to government standards.

3. Business Analysis

- Knowledge and ability to apply the principles of business analysis in the planning, reengineering, requirement gathering

for government business environments, operations, processes, and practices.

Knowledge requirements:

- Government/business knowledge in various application areas (e.g., financial/accounting, human resources, purchasing, supply, policing, corrections)
- Common government/business management and decision-making concepts, principles, activities and practices (e.g., Government and corporate planning cycles and processes, accountability and budgetary cycles and processes)

- Business architecture (at a project level) and how it augments organizational design, planning systems and financial controls

- Impact analysis and environmental scan methods, techniques and tools used to evaluate an organization's strengths and challenges

- Business case/cost benefit methodology and standards including return on investment (ROI) and total cost of ownership (TCO)

- Typical organization structures, job functions, work activities and workflow

- Business process analysis and business process reengineering methods and design benefits, methodologies and tools; roles in support of business change

- Costing and cost recovery

- Industry, business line and the technical aspects of the business line

- Relationship between the business architecture and other architectures

- Transaction processing theory and principles, flow and design

- Government and Department policies and standards such as:

  - Business policy and standards development

  - Privacy Act

  - TBS Business Transformation Enablement Program (BTEP)

  - Management of Government Information (MGI)

1. Introductory

- Demonstrates awareness of business rules and concepts.

2. Basic

- Understands business lines.
- Understands basic government and departmental services.

- Drafts simple requirements.

3. Intermediate

- Understands client business requirements, business roles, and business planning and business processes.
- Understands and works within governance principles.

- Understands audit and compliance principles, change management principles and the impact of changes.

- Understands how technologies can enable business processes.

- Translates business requirements into technical requirements.

- Develops clear requirement statements.

- Develops simple business cases.

- Carries out simple business process reengineering, models and redesign processes.

4. Advanced

- Validates business requirements, applies government and corporate priorities.
- Gathers/refines complex business requirements, recommends or makes decisions on business requirements/interdependencies.

- Develops complex business cases.

- Carries out impact analyses and environmental scans to make recommendations.

- Leads business process reengineering.

- Presents and defends complex positions and strategies for business decisions, processes and plans.

- Guides other business analysts.

- Advises on compliance, governance structures and audit principles.

5. Expert

- Works at the "integration level" by understanding the business architecture and its relationship to other architectures.
- Makes recommendations to senior management on strategies and plans.

- Carries out environmental scans of architecture.

- Assesses corporate impacts of changes and recommends strategies to senior management.

- Develops complex business cases across multiple business lines and platforms.

- Sets standards for compliance and governance structures.

4. Database Design and Management

- Knowledge and ability to apply the methods, practices and policies that are used in the design and the management of databases.

Knowledge requirements:

- Concepts, policies, principles, theories, practices and techniques associated with information management and information technology as it relates to database design and management
- Relationship between database design/management and application performance

- Database design and architecture - logical structure and physical structure (e.g., functional, metadata and process models)

- Database types (e.g., data warehouse, decision support, operational, query, ERP and relationship to technologies)

- Data security and recovery

- Database integrity, capacity planning, performance and tuning

- DBMS and data warehouse principles, best practices and standards

- Interoperability

- Database software installation processes and techniques

- Database tools to design and manage databases (e.g., data management tools, data modeling tools, database integration tools)

- Languages for data modeling, manipulation, control and database query

- Database trends and directions

1. Introductory

- Demonstrates basic understanding of database management, logical design concepts and levels of database security.
- Understands the difference between different database structures (e.g., relational vs. network).

- Comprehends database design (e.g., diagrams, schemas, models).

- Demonstrates basic understanding of data manipulation language (DML).

- Demonstrates an awareness of performance issues (e.g., distribution of data, size definitions).

2. Basic

- Understands a single database management system (DBMS), its components and how they relate to each other.
- Demonstrates a good knowledge of data manipulation language (DML) and data definition language (DDL).

- Codes/tests basic database access modules (e.g., stored procedures).

- Troubleshoots, at a basic level, to understand database problem and identify where to direct it (e.g., basic database accessibility).

- Recognizes the importance of database basic recovery and, with guidance, performs backup and recovery.

- Understands database release management, applications business rules, data integrity issues, database security implementation, workload manager and interaction with DBMS (e.g., CICS, NT).

- Performs data population, debugging and testing.

- Conducts basic impact analysis for database change management.

3. Intermediate

- Demonstrates working level understanding of single DBMS relevant operating systems, applications business rules and its dependencies with other applications, databases and/or business partners.
- Applies wide range of concepts to the corporate/vendor environment (e.g., database security and/or individual profiles).

- Makes recommendations on logical/physical models (e.g., converts from logical model, implements and maintains physical model to meet storage, availability, and performance requirements).

- Develops, codes, tests and reviews complex database access modules.

- Solves problems that impact on the business or service, resolves data integrity issues and implements data integrity safeguards, and uses diagnostic and monitoring tools to prevent problems/enhance performance and availability.

- Demonstrates a solid knowledge of system testing and integration environments.

- Develops, selects, recommends and implements strategies for backup and recovery, data population and migration.

- Conducts general impact analysis on database change management.

4. Advanced

- Demonstrates broad understanding of multiple DBMS or an in-depth knowledge of one or more DBMS.
- Develops logical models incorporating business requirements such as high availability, redundancy and disaster recovery into the logical/physical database design.

- Researches, pilots, evaluate new technologies and standards; identify how they will integrate with the corporate network and recommends strategies.

- Solves unusual problems or problems with a significant impact on the business.

- Deals with major and/or multiple application groups.

- Creates or reviews certification testing.

- Develops standards and procedures for implementing new database technology.

- Mentors people and provides input/guidance to cross-functional teams.

5. Expert

- Demonstrates expert knowledge of data management, data stewardship, government-wide data management initiatives and trends in data management and how they can be applied.
- Holds an enterprise-wide view and/or is regarded as the subject matter expert in one or more areas of expertise, and provides effective strategic direction to enterprise-wide data management.

- Develops enterprise-wide multi-disciplinary architectural documents translating business data requirements into topographical format.

- Demonstrates broad-based knowledge of information technology (e.g., programming, data management, platforms).

- Develops business cases for enterprise-wide data management initiatives as a direct response to business drivers.

- Guides and oversees multiple-concurrent data management projects.

- Conducts procurement for data management solutions and related services.

- Develops strategies, policy and standards for corporate data management and contributes to standards working groups - governmental and/or industry.

5. Infrastructure/Platforms [2]

- Knowledge and ability to support the enterprise computing infrastructure (e.g., enterprise servers, client server, storage

devices and systems, hardware and software) in the provision, management, storage, operation, scheduling, support and maintenance of the infrastructure.

Knowledge requirements:

- Principles, practices, standards, methods and techniques related to interoperability of hardware/software configuration controls
- Platform environment (e.g., client-server environment, enterprise server/mainframe environment)

- Storage and retrieval (e.g., area network, mainframe storage, media storage, virtual storage)

- Systems hardware and its characteristics (e.g., mainframe computers, mini and micro-computers, CPU, memory, disk, registers, bus, channel)

- Hardware/software and connection, implementation and maintenance

- Operating systems, communications and software utilities used on enterprise server/mainframe and distributed computer systems

- Cooperative processing (two or more computers simultaneously processing portions of the same program or operating on the same data such as multiple-CPU systems, distributed systems)

- Monitoring of systems software (i.e., the operating system and all utility programs that manage computer resources at a low level) including compilers, loaders, linkers, and debuggers

- Operations performance monitoring and capacity planning of the delivery platform

- Treasury Board and corporate IT standards and policies regarding the development and support of infrastructure systems and networks

1. Introductory

- Demonstrates awareness of the platform principles and procedures.
- Understands need for capacity planning and performance management.

- Operates the platform at a simple level under supervision.

- Demonstrates awareness of the standards for the platform.

2. Basic

- Understands the platform technology and concepts.
- Understands how basic concepts relate to each other and applies them.

- Understands how the platform integrates with other environments, at a basic level, from an end-user perspective.

- Operates the platform at a simple level.

- Troubleshoots basic physical or software problems.

- Understands and applies the standards.

3. Intermediate

- Understands how the platform integrates with other environments (e.g., network).
- Participates in day-to-day operations (e.g., monitoring operations of the platform).

- Uses performance data collection tools and techniques.

- Installs software and hardware on the platform.

- Solves routine problems.

- Solves typical hardware and software problems.

- Uses diagnostic tools to solve complex problems.

- Executes standards.

4. Advanced

- Demonstrates in-depth knowledge of an area of expertise.
- Contributes to high-level architecture.

- Evaluates/pilots new technologies, assesses the results, identifies how they integrate with the platform and implements them.

- Carries out performance measurement and capacity planning.

- Incorporates business requirements such as high availability, redundancy and disaster recovery into platform design.

- Resolves complex problems.

- Develops and monitors/enforces standards and procedures for new technology configuration and implementation.

- Mentors/guides individuals and cross-functional teams.

5. Expert

- Demonstrates expert knowledge of platform principles, technology, government-wide technology initiatives and technological trends.
- Demonstrates an intimate knowledge of the environment, interdependencies and impact of change.

- Provides effective strategic direction to enterprise-wide platform design and initiatives.

- Develops enterprise-wide multi-disciplinary architectural and design documents.

- Resolves very complex problems and recommends capacity and performance improvements.

- Conducts procurement for platform hardware and services.

- Sets standards and technology direction for the platform.

- Leads the development of people in the infrastructure domain.

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[2] This competency does not include network/telecommunication systems (See competency 8).

6. IT Procurement and Asset Management

- Knowledge and ability to evaluate, negotiate, procure, track, and manage IT assets including software licenses and computer leases:

Knowledge requirements:

- Vendor liaison/management, service agreements, warrantees and lease agreements
- Procedures related to procurement and contract administration

- Processes and procedures necessary to critically evaluate products, services and claims

- Processes involved in vendor negotiations for substantial and/or long-term contracts for hardware, software and license agreements, support and services

- Systems and applications for procurement (e.g., NMSO, DISO, Software Acquisition Reference Centre, Request for Software Discounts and Supply Arrangements)

- Roles and responsibilities of TBS and PWGSC related to asset procurement and management

- Corporate and Government of Canada legislation, standards and policies (e.g., regulating software license agreements and renewals, disposal, procurement ethical practices and security policies)

- License management

- Policies, guidelines and procedures for IT asset management

- IT asset management life cycle (e.g., planning, maintenance, retirement and disposal)

- Negotiation and contracting processes and practices

- Federal legislative and policy framework related to IM/IT procurement for goods and services

- Departmental processes for acquisition of goods and services, including drafting of Statements of Work (SOW), Requests for Proposals (RFPs), evaluation of responses, contract negotiations and management of contracts

- Remedial measures for IT equipment non-performance

1. Introductory

- Demonstrates broad knowledge of Government of Canada and the role of PWGSC in procurement.
- Understands the values and ethics involved in procurement.

- Demonstrates basic understanding of procurement process for IT services and goods.

2. Basic

- Understands Treasury Board and corporate processes, standards and governance structures.
- Assists in gathering requirements from the business.

- Understands internal procurement processes for IT services and goods.

3. Intermediate

- Knows the procurement cycle and processes, gathering of information through RFIs and RFPs, roles of interdepartmental partners and the proposal/ evaluation processes.
- Demonstrates a general knowledge of procurement and conducts low-level procurement.

- Evaluates products and services and identifies the vehicle(s) to use.

- Provides advice on reporting and inventory, policies and procedures.

- Establishes partnerships with Finance.

- Understands IT asset business and language.

- Formulates and applies performance management guidelines to asset management.

4. Advanced

- Possesses a specific area of expertise and business knowledge of the life cycle for his/her asset area (e.g., sunset procedures).
- Negotiates multi-level, multi-layer million dollar contracts.

- Knows rules for Canadian and International governing bodies (e.g., NAFTA, Trade Tribunal, and CITT) and negotiates CITT challenges.

- Reviews, signs off and approves RFP/RFI documents.

- Liaises with PWGSC to communicate requirements, terms and conditions.

- Monitors and enforces values and ethics.

- Consults with regions and senior management (e.g., leveraging assets, inventory and plans for sunset/refresh, professional services and training).

- Mentors junior staff.

5. Expert

- Demonstrates a very deep understanding of one area of expertise or a broad understanding of multiple areas and provides guidance to senior management.
- Demonstrates a broad understanding of software licensing models, the market and how to leverage the knowledge.

- Demonstrates an in-depth understanding of procurement, the industry, and the vendor community and industry trends.

- Possesses corporate knowledge and understands service levels.

- Negotiates with vendors at a high/complex level.

- Provides advice in large supply agreements.

- Performs "total cost of ownership" analysis.

7. IT Project Management

- ***Knowledge and ability to apply formal project management principles and practices during the planning, implementation, monitoring and completion of projects, ensuring effective management of scope, resources, time, cost, quality, risk and communications.***

Knowledge requirements:

- Enhanced Management Framework for the management of information technology/projects
- Project management concepts, techniques, methods and tools and industry best practices in the management of projects in an IT environment (e.g., Project Management Body of Knowledge (Pombo))

- Project estimating and planning techniques

- Project progress monitoring

- Management of change, risk and problem

- Human resources management

- Government of Canada policies and standards

1. Introductory

- Understands basic concepts (e.g., project goals, risk, scope, participants' roles, planning and the importance of project management principles such as time, cost and quality management).
- Provides input to project plan.

2. Basic

- Understands project reporting.
- Develops simple project plans including work breakdown structure and estimates.

- Identifies and escalates issues and potential delays.

- Manages small, straightforward projects or specific components of larger projects.

3. Intermediate

- Manages a complete multi-stage project in own area.
- Identifies, allocates and manages resources needed to meet project objectives.

- Develops and manages the project plan, including timelines, deliverables, milestones and costs.

- Identifies potential roadblocks and risks and develops contingency plans to deal with them.

- Oversees implementation of the project plan, monitors progress, resource usage and quality, and makes needed adjustments.

4. Advanced

- Manages complex, multifaceted/ interrelated projects that span own area or department boundaries.
- Conducts comprehensive risk assessment and develops plans for eliminating or mitigating the risks identified.

- Mentors other project managers.

- Understands the impact of the project on the department as a whole.

- Develops complex plans (e.g., with interdependencies or cross-department).

- Implements standards.

5. Expert

- Oversees/manages large, highly complex, diverse or strategic projects that impact the organization as a whole.
- Develops departmental policies and standards.

- Markets project management principles and benefits across the department.

- Sets/evolves the vision of how project management should be done.

- Changes project management practices.

- Knows multiple project management disciplines.

8. Telecommunications (Data and Voice) Network

- Knowledge and ability to implement the methods, practices and policies governing the design, analysis, development, management and use of the hardware and software used to transfer information such as data, voice, images and video.

Knowledge requirements:

- Theories and concepts, methods, policies and practices to design, develop, plan telecommunications network infrastructure systems (e.g., calculation of peak and mean bandwidth requirements, response time, propagation delays, priorities, traffic types, traffic flows (point-to-point, multicast, broadcast), error detection and protection, security, interoperability, growth, quality of service, availability)
- Installation, configuration, operation and maintenance of telecommunications infrastructure hardware and software

  - Telecommunication systems' operating systems, system software and utilities

  - Low level interfaces (e.g., modems, CSU/DSU)

  - Voice communication devices (e.g., Blackberry units, cell phones, gateways, routers, switches, PBX)

- Standards describing the structure of data exchange between systems (e.g., OSI seven layer reference model)

- Standards describing the format content and exchange mechanisms between systems, such as communication protocols (including protocols that relate to the convergence of technologies, such as Voice over IP), connection oriented versus connectionless protocols

- Classes of networking systems (e.g., Local Area Network (LAN), Metropolitan Area Network (MAN), Department Wide Area Network (DWAN), Wide Area Network (WAN), Virtual Private Network (VPN), Voice Network System, Remote Access Networks, associated hardware and software, operating systems and protocols)

- Network topologies (physical and logical) and their characteristics

- Classes of telecommunication media, such as wire based (e.g., copper, fiber) and wireless (characteristics of various frequency bands from HF to microwave)

- The purpose and use of different networks (e.g., Internet, Intranets, Extranets)

- Value added networks (i.e., services added within a communications network beyond data transfer such as message routing, resource management and conversion facilities)

- Performance analysis, diagnosis, capacity planning and data communications monitoring/management practices, protocols and tools

- Data, voice and video requirements and services

- Traffic and transmission management

- Common carrier services - data transmission and telephony service offerings provided by private sector companies

- Security, including specific methods, policies and best practices to secure information within the telecommunications network infrastructure

- Industry regulations and tariffs (e.g., CRTC)

1. Introductory

- Demonstrates basic understanding of data communications and components, definitions, key concepts, communication protocols and platforms (e.g., Firewalls, Security, Frame Relay, SNA, ATM, Hubs/Routers/ Gateways switches, VOIP, ISDN, routing protocols).
- Understands need for capacity planning and performance management.

2. Basic

- Understands data communications routing and switching technology.
- Understands how basic concepts relate to each other and applies them (e.g., vendor-specific standards).

- Understands how data communications integrate with other environments (e.g., mainframe) and are distributed, at a basic level, from an end-user perspective.

- Assists in the design of basic connections (e.g., connecting 100 people to a WAN or designing a small site (less than 50)).

- Troubleshoots basic physical or software connectivity problems, network congestion (e.g., cables/connections, defective equipment, logging in to network equipment, checking configuration of routers/switches).

- Uses data communications diagnostic tools.

- Tests, configures, installs and supports hardware and software at any typical site.

- Talks clients through troubleshooting.

3. Intermediate

- Understands how data communications integrate with other environments such as mainframe, distributed, E-commerce, firewalls and external networks, at a component level.
- Demonstrates and applies wide range of concepts to the corporate/vendor environment.

- Understands vendor-specific network switching and routing products.

- Translates multiple client network connectivity requirements and limitations into technical specifications for building/site designs.

- Designs complex building environments using existing standards (e.g., complex site layouts (many buildings and requirements)).

- Resolves typical hardware and software problems (e.g., connectivity, network congestion, protocols, and uses diagnostic tools).

- Conducts certification testing.

- Executes standards.

4. Advanced

- Incorporate business requirements (e.g., high availability, redundancy, disaster recovery) into data communications design using analytical techniques.
- Evaluates/pilots new technologies, identifies how they integrate with the corporate network and implements.

- Resolves unusual or atypical network problems without clear precedents and/or that have significant impact or consequence on the business or service.

- Creates or reviews certification testing.

- Develops standards and procedures for new technology configuration and implementation.

- Mentors/guides individuals and cross-functional teams.

- Deals with major client groups (e.g., regional or national client).

5. Expert

- Demonstrates expert knowledge of data communications principles, network technology, government-wide technology initiatives and technological trends.

- Demonstrates broad-based knowledge of information technology.

- Develops enterprise-wide multi-disciplinary architectural documents.

- Develops business cases for enterprise-wide network technology initiatives as a direct response to business drivers.

- Provides effective strategic direction to enterprise-wide network design.

- Guides and oversees multiple-concurrent network projects.

- Conducts procurement for network solutions network hardware and services procurements.

- Develops policy and standards for networking technology and contributes to governmental and/or industry standards working groups (e.g., GOL, ITU, RC).

9. Security/Information and Application Protection

- Knowledge and ability to ensure there are adequate technical and organizational safeguards to protect the continuity of IT infrastructure services by the implementation of IT security principles, methods, practices, policies and tools that are used in securing IT resources including information and operations security, physical security, business continuity/disaster recovery planning, methods to deal with security breaches and security assessment in a technical environment.

Knowledge requirements:

- IT security principles methods, policies, practices and tools
    - Information Protection/IT security principles, threat and risk assessment methodology, practices, procedures and tools (e.g., Government privacy and security related legislation and policies, biometric and cryptographic principles, firewalls, intrusion logs, encryption and digital (numeric) signature)

    - Theories, processes and methodologies involved in developing, implementing, monitoring and reporting IT security planning frameworks, policies, measures, counter-measures and monitoring programs, procedures and guidelines

    - Management tools such as data classification and risk assessment/analysis to identify threats, classify assets and to rate system vulnerabilities

    - IT software and hardware security requirements

    - Preparation and conduction of Privacy Impact Assessments (PIA), Statement of Sensitivity (SOS), Threat Risk Assessments (TRA), Vulnerability Assessments (VA)

- Accreditation procedures, policies and practices

- Security certification procedures

- Security hardware and software

- Treasury Board and corporate IT standards and policies regarding the development and support of infrastructure systems and networks, including security policies and operational standards

- IT Operations Security

  - Protection techniques for the entire facility, from the outside perimeter to the inside office space, including all of the information system resources and methods to deal with security breaches

  - Requirements of hardware, media and of the operators and administrators with access privileges to these resources

  - Application product level security, access management and remote access

  - Auditing and monitoring the mechanisms, tools and facilities to permit the identification of security events and to assess operations security capacity

  - Viruses

  - Computer crimes laws and regulations and the measures and technologies used to investigate computer crime incidents

  - Cryptographic, graphic and hardware applications

- Business Continuity/Disaster Recovery Planning

  - Disaster recovery strategies, plans, tests and management

  - Preservation and business recovery planning, practices, policies and procedures

  - Rollback and contingency strategies, planning practices and tools

  - Business continuity analysis procedures and exercise frameworks

  - Activities within the response, recovery, restoration and resumption phases applicable to business continuity plans

  - Roles and responsibilities of IT operational functions during business continuity exercises

  - Federal government business continuity planning policies and programs, including Treasury Board Standards

1. Introductory

- Demonstrates awareness of security requirements.
- Demonstrates awareness of certification policies.
- Demonstrates awareness of privacy requirements and standards.

2. Basic

- Understands concepts of IT security and its application to computer systems architecture.

3. Intermediate

- Executes security test plans.
- Deals with low impact threats.
- Acts to protect integrity of system data at operation level (e.g., single key incident).
- Performs security certifications.
- Provides advice on disaster recovery planning.
- Participates in disaster recovery tests.
- Recommends security safeguards.
- Executes standards.

4. Advanced

- Demonstrates a broad understanding or very detailed area of expertise in security subject(s).
- Demonstrates a broad knowledge of security policies and interprets policies.
- Understands a specific security application or tool and how it works.
- Conducts risk assessments.
- Assesses security safeguards.
- Deals with threats and serious incidents.
- Deals with intrusions at a high threat level.

5. Expert

- Demonstrates an expert understanding or very detailed area of expertise in multiple security subject(s).
- Demonstrates expert knowledge of law, regulation and policies, and interprets policies and standards.
- Is an expert in multiple security applications and tools?
- Leads risk and security safeguards assessments.

- Mitigates threats and serious security incidents at the enterprise level.

- Consults on security issues and recommends corporate strategies.

- Leads the development of enterprise policies and standards.

- Directs employees and consultants and mentors others.

10. Testing

- Knowledge and ability to perform testing of software and/or hardware using a systematic approach (i.e., the orderly progression of testing in which software elements, hardware elements or both are combined and tested until the entire system has been integrated).

Knowledge requirements:

- Quality assurance and control
- Testing approaches and strategies

- System and application testing methodologies, practices and principles (e.g., end-to-end)

- Testing/validation in relation to the systems development life-cycle

- Types of testing (e.g., volume, unit, compatibility, bandwidth, integration, system, end-to-end, web-stress)

- Testing standards (e.g., Treasury Board and department, International organization for standardization (ISO))

- Testing and readiness functions and assessments including release processes and packages, change control and system integration

- Testing tools including automated tools, test scripts and reporting/tracking tools

- Certification and accreditation of new applications

1. Introductory

- Demonstrates awareness of testing principles and processes.
- Understands testing terminology.

2. Basic

- Tests and debugs software modules.
- Conducts unit testing.

- Understands testing methodologies and principles.

- Understands standards for testing.

- Executes test scripts.

- Reports test results.

- Understands and applies IT system security for applications.

- Uses a testing tool.

3. Intermediate

- Understands systems integration principles (i.e., the methods, practices and policies that are used during a systems integration process, including hardware, software, network and applications).
- Understands release and certification processes.

- Prepares test cases/scripts.

- Carries out complex testing/ validation (e.g., volume testing, integration testing).

- Ensures other applications are not affected.

- Matches results with expectations in the design document.

- Troubleshoots/resolves issues.

- Implements test tools.

- Applies standards for testing.

4. Advanced

- Conducts application testing.
- Conducts complex series test scenarios.

- Prepares test plans and strategies.

- Researches/tests testing tools and makes recommendations.

- Develops test practices.

- Implements and monitors standards for testing.

- Tests standards.

- Understands the impact of testing on the environment and other tests being carried out.

- Ensures that the right/appropriate tests are being carried out.

- Mentors others.

- Guides application stakeholders in testing methods and tools.

5. Expert

- Manages integration testing.
- Sets standards for cycle testing.

- Designs testing methodologies.

- Develops test standards, best practices and policies.

11. Service Management Processes

- Knowledge and ability to implement the methods, practices and policies governing the design, development and use of the IT support processes designed to keep the IT environment functioning efficiently, effectively and securely.

Knowledge requirements:

- Service Management Principles
    - Relationship between different IT support processes and between support processes and clients

    - Implementation and management of services using the principles and methods associated with industry best practices (e.g., Information Technology Infrastructure Library (ITIL))

    - Service level agreements

    - Processes and practices to ensure the Agreement and Statements of Work or contracts are met while taking steps to minimize any adverse impact on service quality

    - Government of Canada and department policies and standards (e.g., Service Management Life Cycle Framework)

- Change Management

    - Processes and practices to ensure changes to the IT infrastructure are introduced successfully and on a scheduled basis

    - Planning, scheduling, distribution, application and tracking of changes to the IT environment

- Configuration Management

    - Management of the physical and logistical properties of resources and their relationships (e.g., physical connections and dependencies)

    - Configuration management technologies that affect the IM/IT environment including the physical and logistical properties of resources

- Release Management

    - Processes and practices to ensure the introduction and maintenance of all IS/IT infrastructure and that existing infrastructure falls within the standards and the technology suppliers supported release levels

    - Problem Management

    - Detection, reporting, analysis, recovery, resolution and tracking of problems

- Help Desk/Client Support

- Concepts, techniques and practices of help desk operations and service delivery

- Provision of a single point of contact for all users of the IT infrastructure services

- Installation, configuration, troubleshooting and application software support

- Technical problem analysis, evaluation and solution proposal

- Techniques and practices for client queries, troubleshooting and problem resolution and prioritization

1. Introductory

- Understands service management processes and concepts (e.g., incident management, change management, release management).
- Understands concepts, techniques and practices of help desk operations and service delivery.

2. Basic

- Understands and follows a process in problem management, change management or configuration management.
- Provides IT help desk support services.

- Gathers information from end-users to determine the nature of problems and resolve them.

- Monitors SLAs and escalates problems.

- Performs initial evaluation of problem and routes as necessary.

- Understands the requirements of process (e.g., involvement of service management early in the process).

3. Intermediate

- Understands interrelationships and interdependencies between service management processes.
- Installs, configures, troubleshoots and supports application software.

- Analyzes, evaluates and diagnoses technical problems and proposes solutions.

- Manages process ensuring it is followed (e.g., change, problem, testing, costing, backup and recovery, QA release).

- Schedules release after ensuring absence of conflicts.

- Serves as a point of escalation.

- Conducts customer satisfaction surveys.

- Guides others in processes.

- Implements changes to processes.

4. Advanced

- Implements and manages services using the principles and methods associated with Information Technology Infrastructure Library (ITIL) and other industry best practices.
- Identifies who to call for severe or complex problems.

- Manages the provision of help desk services and problem resolution.

- Analyzes problem trends and makes recommendations.

- Develops service management processes.

- Writes/negotiates SLAs for operational level agreements and internal SLAs.

- Develops customer satisfaction surveys.

- Sets guidelines for others to follow.

5. Expert

- Negotiates, develops, implements and manages service level agreements.
- Develops service management standards, practices and policies.

- Builds and maintains a network of experts.

- Develops SLA templates.

- Negotiates complex SLAs.

- Provides guidelines for service management (e.g., recommends changes based upon results of a customer satisfaction survey).

- Recommends continual improvements in service management strategy and processes.