Advisory Council
on Science and
Technology

Conseil consultatif
des sciences et de
la technologie

Report of the Expert Seminar on

Labour Market Information and Monitoring

Ottawa, April 23rd, 1999
Derwyn Sangster

Secretariat of the Expert Panel on Skills

Canada

Report of the Expert Seminar

on

Labour Market Information and Monitoring

The Secretariat of the Expert Panel on Skills

April 23, 1999
R.H. Coats Bldg, Ottawa

Contents

Background to the Seminar

Among the questions posed to the Expert Panel is the issue of whether Canada has reliable means to monitor the availability of critical skills, both currently and in the foreseeable future The Panel has therefore been concerned with the labour market information and monitoring system itself, and has sought to discuss whether it provides timely and accurate information which can be used in assessing the labour market situation in key skills areas. A significant aspect of this question, in turn, is how existing information systems treat *skills* as well as *occupations.*

In approaching to this question, the Panel saw it as important to discuss the strengths and weaknesses of the current monitoring systems and identify ways in which they might be improved. To inform its own discussions in this regard, the Panel sought the advice and insight of individuals knowledgeable in the area of labour market information and monitoring, including in particular those with expertise in the gathering, dissemination and use of this information. The Seminar on Labour Market Information and Monitoring was the main vehicle through which the Panel solicited this expert advice.

Structure and Format of the Seminar

The Seminar on Labour Market Information and Monitoring was held in Ottawa on April 23, 1999, and lasted a full day. It was hosted by Noah Meltz, a Panel member, and facilitated by John Butcher, a consultant. Twenty-nine people participated (see Annex 1 for a list of participants). Participants brought the perspectives of information gatherers, analysts, disseminators, and users.

Reflecting the Panel's discussions of *occupations* on the one hand and *skills* on the other, the day's discussion was structured to reflect this tw interest. The morning's discussions focussed on monitoring in an occupational context; the afternoon discussions looked at issues from a skills perspective. (The Seminar Agenda is included as Annex 2.) This report is also structured in this way.

Monitoring in an Occupational Framework

Participants first shared their perceptions on the key characteristics of occupation-based monitoring systems, focussing on those characteristics which constituted strengths and those in which there was need for improvement. These are discussed in turn.

Strengths of the Occupational Framework

A central strength of the occupation-based framework was the *consistency and uniformity* of the NOC classification system itself. The classification embodies a common logic and vocabulary, so that users in principle are able to use the same terms in the same way. In fact, Canada's world leadership in this area was recognized; many other countries have sought to incorporate similar approaches into their own classification activities.

This consistency and uniformity, in turn, permit:

- **the gathering of quantitative statistical data which permits measurement and the development of key indicators;**
- **linkages and comparisons among different data sets (e.g. different surveys, different geographical areas, different industries, etc.);**
- **consistent monitoring of changes and trends over time.**

These features allow analysts and others to watch the "vital signs" of the labour market and assess how they vary by industry, region, and over time. They also provide necessary consistency to forecasting and projections activities.

A second strength of the occupation-based framework was the variety of different measures, indicators, and data sets generated within Canada. This permits a process of validation of developments and trends using different data sets. Notably, some of these data sets may contain qualitative information in addition to the quantitative information of others.

A third strength was the general high quality of the data gathered, in particular by Statistics Canada, which is highly regarded internationally as an agency with considerable expertise and experience. This quality contributes in turn to the consistency of data over time, strengthening the ability to identify and assess changes in key indicators.

Finally, there was some agreement that existing labour market information systems are comparatively inexpensive, given the quality, breadth, and regularity of the information gathered.

Areas in Need of Improvement, and Necessary Actions

Participants acknowledged that a number of aspects of current occupation-based monitoring systems required improvement. This review led directly into a discussion of actions which might contribute to improvements. Both areas for improvement and actions are presented below.

Emphasis on Emerging Sectors and Occupations

Current classification systems are too slow to capture and describe emerging new occupations, many of which are based on emerging technologies in newer sectors, and require new combinations of skills. Even after they have been described, there is a further lag in gathering quantitative data relating to them. (In the extreme case, incorporating a new occupation into the Census may give a lag of as much as 6 years before Census data are available relating to that pation). For this reason, users in sectors which are based on emerging technologies are i ctant to use these classifications, and in some cases have developed their own. There is often a disconnect between classification systems such as the NOC and what industry uses for job titles and definitions.

Action:
Governments and industry must work closely together both to better link occupational classifications and industry job titles, and to ensure that new occupations are identified which reflect industry developments in a timely fashion. The basis of this work will be the accurate identification of the skills involved and the consistent use of terms and definitions among both government and private sector users. From a private sector perspective, the sector councils are well placed to participate actively in this process.

The results of this work, furthermore, must be shared widely with users and analysts, perhaps through a web site which would list the new/emerging occupations and the NOC codes that are most appropriate to reflect them.

Even where occupational titles are constant over time, the duties and skills required of individuals in those occupations are likely changing. Monitoring a given occupation over time, then, may not reflect these skill changes unless the skill sets embodied in the occupation are continuously re-evaluated and updated. Such revision of the NOC and related skills checklists occurs already on a selective basis. To occur on an ongoing basis can be time- and resource-consuming.

Action:
Such continued re-evaluation and updating is nevertheless essential if occupational classification systems are to maintain their usefulness. In most cases, the occupational title and code will not change, but the skills embodied in it may change significantly. A strong focus on identifying these major skill changes within occupations is essential.

The results of this updating, in turn, must be shared widely among analysts and users. In training decisions, for example, it is not enough to know what occupations are required if decision-makers aren't fully aware of changes in the skills that are embodied in those occupations.

There is an ongoing concern among many analysts and users that occupational data are not available in sufficient detail and/or timeliness for their particular purposes.

For some, lack of geographical detail in existing survey-based data sets hindered an accurate and useful monitoring of the labour market at a local level. Since this is the level at which many users (including students and jobseekers) operate, this remains a shortcoming of many existing series. As responsibility for labour market programs such as training devolves to the provincial level, the issue of having accurate provincial and sub-provincial data series becomes increasingly important.

For others, data from existing national level surveys such as the monthly Labour Force Survey or the five-year Census lacked the combination of timeliness and occupational detail, even at the national level, which would permit a frequent and detailed monitoring of occupational labour market developments.

Others drew attention to the absence of a demand-side labour market monitoring tool since the Job Vacancy Survey was discontinued. This absence robbed analysts and other users of a regular, consistent and fairly detailed measure of occupational demand. Even the upcoming Workplace and Employee Survey (WES), despite its potential, lacked the occupational detail to give more than a general overview of occupational demand.

Action:

Many of the specific suggestions for enhancing the detail and timeliness of labour market information had significant resource implications. These included increasing the Labour Force Survey sample size, conducting special surveys (including Census follow-ups) focussing on specific occupations, etc. These resource implications mean of course that these suggestions must be set against competing priorities.

A second approach to enhancing data detail was to make better use of the data which could be generated by administrative systems. Two specific suggestions here were to add NOC codes to the Record of Employment forms which employees receive when they leave an employer, or to capture better occupational data from the T4 taxation form. (It was recognized that these suggestions could in turn encounter issues of the accuracy with which occupations were reported on these forms.)

As a third approach, participants pointed to other electronic monitoring systems (stock markets, grocery-store scanning-based systems, etc.) in which individual transactions were recorded and, in aggregate, tracked to provide an immediate picture of market operations and developments. A number of participants felt that better use should be made of electronic technologies in order to gather and disseminate data generated by labour market transactions. These transactions could include instances where jobseekers and vacancies are matched through vehicles such as the Electronic Labour Exchange (ELE) or other Internet-based recruitment systems, including some under development by individual sector councils.

A number of participants noted that users -- and some labour market analysts -- are often not expert enough to interpret the labour market information once they get it. This may reflect inexperience in dealing with classification systems, lack of familiarity with the sources and significance of individual data sets, etc. The result of this, however, is that the data are not used effectively. This becomes more of a problem, unfortunately, as the use of labour market data devolves and disperses.

Action:

The solution to this difficulty was two-fold, i.e. educate users in the use and interpretation of the information, and stress with information providers the importance of making the information as 'user-friendly' as possible.

There are some concerns over the technical aspects of survey data collection, including the accuracy of occupational coding, the consistency with which occupational information is gathered, and the impact of breaks in time series which may be caused by changes in occupational classification systems. In terms of specific actions, this subject received relatively little discussion.

Monitoring in a Skills-Based Framework

Turning to skills-based monitoring, participants first reviewed the strengths of skills-based monitoring. This was followed by a discussion of related issues and difficulties, together with actions to address these.

Strengths of Skills-Based Monitoring

From a monitoring perspective, focussing on skills changes the plane of discussion from how jobs are described to what people are required to do or know. This in turn permits a direct link to be made between changing labour market requirements and education and training responses. In particular, this link makes it easier to:

- **identify skill gaps for further training;**
- **tie curriculum directly to labour market demand;**
- **identify common skills and training needs across occupations.**

These advantages have the potential to improve the career and training/education choices made by individuals and employers, and allow education/training institutions to respond much more directly to changing labour market needs. Nevertheless, participants identified a number of key issues which will have to be addressed in order for this potential to be realized.

Issues In Skills-Based Monitoring and Necessary Actions

Definitions and Measurement Issues

Participants shared their perspectives on the concepts of 'skill', 'knowledge', and 'competency'. It was clear from the discussion that there is no common definition or description of what these terms mean. Some sector councils, in the absence of national definitions, have done extensive work to develop skill and competency descriptions and standards within their sectors. These do not necessarily correspond to the definitions used elsewhere.

A second issue -- and a direct extension of the first -- relates to the difficulty of measuring skills. Even if definitional issues could be overcome, participants still felt that much work remained to be done in objectively measuring not only the presence but also the level of skills or competencies required in particular situations. This raises in turn the question of the relative importance of 'technical' versus 'employability' skills. If skills can't be measured, they are hard to monitor.

A third issue, which would remain even if the first two were addressed, focussed on the need to clarify, for general use, the relationships between occupations and skills. (This same point had been made in the earlier discussion of occupations.) This would involve not only commonly-agreed definitions of skills and measurement systems, but would also involve agreement on which skills were integral to which occupations. Since this would be an ever-changing relationship, this would require constant updating.

These three issues were raised with regard to skill sets of all kinds, but particularly with the 'softer' employability skills, which have also been called non-technical or 'essential' skills. In these areas, which may include management/business skills, personal skills, and other attributes, it was evident that common approaches to definition, documentation and measurement were particularly required.

Action:

This lack of consensus suggests that there is fundamental work to be done to:

- **develop definitions of skill-related concepts that are common and consistent among both developers and users;**
- **develop means to objectively assess the level of skills required in particular situations (and not just whether they are required or not);**
- **identify which skill sets are required in individual occupations, and constantly monitor changes in these requirements.**

Each of these actions requires a significant level of effort. While it is understood that actions on these fronts are being pursued by governments, particularly Human Resources Development Canada, and others, participants conveyed a sense that these were priority activities.

Gathering of Data on Skills

There is a need to gather data which regularly describe and monitor the labour force not only in occupational terms, but in terms of skills, using agreed-upon concepts. This immediately raised issues of the cost of such data-gathering. To do so, we would have to "ask the right people the right questions", i.e. ask individual workers and/or their managers/supervisors about the skills required in their positions.

It was not clear how best to do this. A national survey might not be the most effective :. do this, since it might lack focus on key skill areas. Sector-focussed work, perhaps organized through sector councils and similar bodies with a human resources orientation, would be able to provide more focus.

A further option would involve developing the capacity of electronic systems such as the Electronic Labour Exchange and similar systems to record, capture and disseminate skills-based information using common terminologies and definitions. In principle, these systems would be able to capture information generated by labour market transactions (i.e. when a job vacancy is filled by an applicant). In practice, there would still be technical issues to be addressed and overcome.

Action:

While there was no agreement on the best vehicle(s) for gathering skills-based data, it was clear that each of these approaches would require significant partnership and collaboration among industry, education, and government. For this to happen, and for the necessary resources to be applied, all these parties must collectively recognize the benefits of these skills-based approaches. This issue was specifically discussed, below.

Use and Benefits of Skills-based Data

Participants identified a number of benefits for key user groups, as follows:

Central among these user groups were *learning institutions* themselves. With generic skills better identified, their "decay rate" (when not used) could be determined and, just as importantly, the extent to which they could be developed through formal learning approaches. They could be explicitly encouraged and taught, both at senior levels of education as well as in the early years. The link between work skills and academic curricula could be strengthened. Indeed, it was noted that if generic, non-technical skills were taught to every student and were automatically part of their skill set, then occupational titles might be used as a complete proxy, since they would include both technical and non-technical skills.

Similarly, if *employers* were more able to measure the skills of their employees, training decisions would be improved and employers would be better able to identify the skill

enhancements which would result from training expenditures-- the elusive "return on investment" to training.

Finally, such skills assessments would also support *individuals'* efforts at lifelong learning, particularly if their existing skills could be assessed through a Prior Learning Assessment and Recognition (PLAR) approach, to identify the learning gaps they needed to fill to meet their employment objectives. This would permit much more focussed education/training programs, which would shorten them and increase their effectiveness.

Action:

It is apparent that many potential users of skills - based data are not aware of the benefits of such information for their own objectives. There is a strong need to promote these approaches to such potential users, to encourage the development and dissemination of these sorts of data. If the benefits are perceived, then employers and employees can join in making the case for enhanced skills-based data.

In this context, one suggestion was to declare a year focussed on "lifelong learning" to sensitize companies, employees, and the public to the importance of skills updating, and how these issues are being measured and promoted.

Conclusions

While the discussions of occupation-based and skills-based monitoring occurred separately in the Seminar, a number of common conclusions emerged from each discussion. That similar conclusions resulted from different discussions likely reinforces and strengthens them.

These common conclusions are as follows:

(i)   There is a fundamental need to strengthen our knowledge of the relationships between occupations and skills.

From an occupational perspective, this requirement is driven by the need to capture and document new occupations in emerging sectors, as well as capturing the changing skills requirement of occupations whose titles may remain constant over time In either case, the skills required in these occupations must be better understood. Work in this area is already occurring, but there is a strong sense that the importance of these questions has increased, and with it, the priority for such work.

However, for this to happen, from a skills perspective, there is an urgent need to develop common definitions or descriptions of skill-related concepts, as well as means to measure not only whether skills are required, but the level of such required skills. These efforts will require the full collaboration of both the public and private sectors.

(ii)   There is a need to explore the best ways to gather data on the occupations/skills
        relationship.

Issues of coverage, effectiveness and cost clearly influence how the occupations/skill relationship
is explored in practice. It is clear, however, that as with the development of common skills
definitions, a successful approach will require the collaboration of government, educators, and
the private sector. In this regard, it is evident that sector councils have important potential roles
as focal points for this activity as it applies in their sectors.

There was also significant agreement that the potential to use the new technologies, including
electronic and Internet-based employment systems such as the Electronic Labour Exchange and
similar private sector and sector council approaches, must be explored.

(iii)   Users or potential users of occupation-or skills-based data must better appreciate the
        benefits and uses of these data.

For occupation-based data, where the networks of developers, disseminators and users are better
established, the developers/disseminators must consistently strive to enhance the 'user-
friendliness' of the data. They must also ensure that they are able to interpret the data and educate
users regarding it.

For skills-based data, there is perhaps a more fundamental need to promote the benefits of these
data broadly among learning institutions, employers, and individuals. Successfully done, this will
help to generate an appetite for such information, as well as an increasingly sophisticated
capacity to use it effectively.

(iv)   Sector councils offer a strong potential for partnership in efforts to enhance the
        relationships between occupations and skills.

As organizations focussed on sectoral human resources issues, sector councils are in many cases
at the forefront of creative efforts to ensure that their sectors' skill needs are met. Many are
actively involved in initiatives which include:

- **identifying emerging occupations and related skills;**
- **developing skill standards;**
- **establishing Internet-based job matching services;**
- **working with governments and educators to improve the identification and provision of
  needed skills.**

Sector councils are thus strategically placed to bring their growing expertise to bear as partners
with other stakeholders in identifying and addressing skills-related issues, either on an ongoing
basis or through more focussed "task force" approaches on specific issues.

Appendix I: Seminar Participants

CO-SPONSORS/COMMANDITAIRES

Statistics Canada
Human Resources Development Canada

PARTICIPANTS

Sylvain Belisle, Chef economist, HRDS, Quebec Region

Geoff Bowlby, Senior Analyst, Labour Division / Statistics Canada

Paul Brennan, Senior Advisor, Membership Services and Public Policy / Association of
      Canadian Community Colleges (ACCC)

John Butcher, President, Associates in Planning and Moderator Seminar on Monitoring /
      Expert Panel on Skills

Lorne Flavelle, Registrar and Anglophone Director for Quebec, and Secretary of the Executive
      Board / Career Guidance and Counselling Association

Paula Goossen, Consultant, Personnel Systems / (Software Human Resource Council - SHRC)

Marie Gravel, Acting Manager, Economic Analysis and Information / Ontario Region
      HRDC

Gary Greenman, Senior Associate, Canada Career Consortium / Canadian Labour Force
      Development Board (CLFDB)

Stan Jones, Professor of Applied Linguistics / Carleton University

Howard Krebs, Chief, Labour Division / Statistics Canada

Stephen Loyd, Director, Labour Market Information Service / Labour Market Development,
      HRDC

Fran Manning, Project Manager, CTCA / Canadian Technology Human Resource Board

Ian McRae, Acting Coordinator, Career Information / Human Resources Partnerships Branch
Directorate, HRDC

Noah Meltz, Professor of Economics and Industrial Relations, Centre for Industrial Relations /
University of Toronto (Member of the Expert Panel on Skills)

Heather Mohr, Senior Associate, Planning and Development / Biotech Human Resource
Council

Scott Murray, Director, Education, Culture and Tourism Division / Statistics Canada

Robert G. Nicoll, Senior Research Consultant, Strategic Planning and Information Branch,
Information and Policy Services / Alberta Advanced Education and Career Development

Elaine O'Reilly, Senior Consultant / Canadian Career Development Foundation

Bert Pereboom, Member of the Secretariat / Expert Panel on Skills

Wayne Roth, Chief, Occupational Projections and Macroeconmic Studies, Applied Research
Branch / Strategic Policy, HRDC

Derwyn Sangster, Director, Business Canadian Labour Market and Productivity Centre
(CLMPC) and Member of the Secretariat for the Expert Panel on Skills

Len Schieman, Director, Canadian School Boards Association

Paul Stoll, Senior Analyst, Sectoral and Occupational Studies / Human Resources Partnerships
Directorate, HRDC

Gail Thomas, Director, Federal/Provincial Relations Branch / B.C. Ministry of Advanced
Education, Training and Technology

Grant Trump, Executive Director & CEO / Canadian Council for Human Resources in the
Environment Industry

Lori Whewell, Economist, Micro-Economic Policy Analysis Branch / Industry Canada
-   Stephen Loyd, Human Resources Development Canada