A SKILLS INVENTORY: FROM DESIGN TO EVALUATION

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ABSTRACT

The Design, Development, Implementation and Evaluation of a Skills Inventory

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The Bank of Montreal has approximately 1200 branches across Canada. Employees have been trained historically through classroom sessions in central locations or by on-the-job training the branch.

Recent deregulation and increasing competition in the financial services sector in Canada have dramatically changed the environment for all employees in financial institutions. This has necessitated a much more proactive, focused approach from supervisory and management personnel in identifying and closing gaps in employees' performance. The Corporate Training Department is involved in designing and developing a simple, workable tool to enable branch management to improve the performance of their employees. This tool, a new "Employee Skills Inventory" will be launched shortly by the Training Department.

This thesis examines the design, development, implementation and evaluation of this guide in a large financial institution in Canada.

ACKNOWLEDGEMENTS

I first extend a sincere thank-you to my thesis supervisor, Dr. Richard Schmid, for his inspiration, patience and advice in helping me through the preparation of this thesis.

I am also grateful to my colleagues in Corporate Training at the Bank of Montreal for their on-going input. Their involvement in and critique of much of the material and many of the ideas contained herein have contributed to this final product.

Finally, a very heartfelt thank-you to special friends and family, without whose caring, encouragement and support this work might never have been possible.

DEDICATION

To my father for his gift of sharing, and my mother for her gift of love, this work is gratefully dedicated.

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CHAPTER I

INTRODUCTION

BACKGROUND

In the last two decades and particularly in the 1980's, industry has had to prepare employees to deal successfully in a faster-changing marketplace and serve a more demanding client base than ever before. In addition to this general evolution in the everyday business environment, institutions within the financial services industry have had to prepare for the impending deregulation of the industry and the resultant change and uncertainty.

While employees within the financial services industry have increasingly had to familiarize themselves with a plethora of new products and services over the span of their careers in the personal banking field, they have not had to deal with a significant change in focus in doing their day-to-day business. This has changed, and will continue to change very rapidly.

Employees are concerned about the future; they are uncertain as to what will be expected of them as their roles evolve, and fear that they may not be able to carry out what will be demanded of them.

This thesis outlines how Corporate Training developed an Employee Skills Inventory to address these concerns. The context, rationale, development, process, evaluation, results and recommendations are explained in detail.

CONTEXT OF THE PROBLEM

Financial Services Industry

In 1986, legislation, current and pending, was signaling the demise of the "four pillars" which had represented the segmentation of the financial services industry for the previous eighty years. These four pillars had been more commonly known as banks, insurance companies, trust companies and investment firms. This impending demise would see the differences between all four types of financial institutions become increasingly blurred over the next few years.

Thus, financial companies which had previously specialized in one of the four domains listed above would now all be offering similar products and services to a much more sophisticated and demanding customer base than had previously been the case. Customer loyalty was largely becoming a thing of the past, forcing financial institutions to

offer quick, knowledgeable service to all customers in order to keep them from going elsewhere for all or part of their business. Margins and spreads on products and services were no longer as wide as they once were as competition continued to increase. More institutions were being allowed into the arena formerly restricted to the "Big Five" Canadian banks.

Bank of Montreal

This new era in banking would require that staff be much more knowledgeable and proactive in providing all facets of financial and banking advice to the public. The increased pressure on branch employees would come from demonstrating enhanced product knowledge in terms of both a more sophisticated and in-depth knowledge of existing products as well as knowledge of a vast array of new products ranging from investment vehicles through insurance; more proactive marketing and selling skills; and new roles in terms of offering financial advice to clients, both prospective and existing. Another factor seen as important by the task force investigating this problem was the ability of the branch manager to fashion a cohesive and responsive team to provide this increased level of customer service.

While certain "high potential, high performing " individuals were

already offering much of this type of service to Bank clients in terms of existing products and services, selling and marketing, and management skills, a large number of branch managers and other branch staff were perceived to be unable to provide an acceptable level of service in the current environment for whatever reason. This situation had to be turned around as quickly and as effectively as possible.

Corporate Training

The Corporate Training Department of the Bank of Montreal was one of several departments under one corporate Human Resources umbrella which served all major Line groups of the Bank. These included Personal Banking, Corporate & Government Banking, Treasury and Domestic Operations. Figure 1 shows a global organization chart of the Bank as a whole while Figure 2 provides a partial organization chart showing the Human Resources function.

Corporate Training is basically divided into two functions. The Corporate Group is responsible for designing and developing most of the training materials. The Regional Training Departments, situated in Calgary, Toronto and Montreal, are responsible for delivering the training and providing the link between Line banking groups and the Training function. Requests for assistance from Corporate Training from any of

FIGURE 1: ORGANIZATION CHART OF THE BANK OF MONTREAL

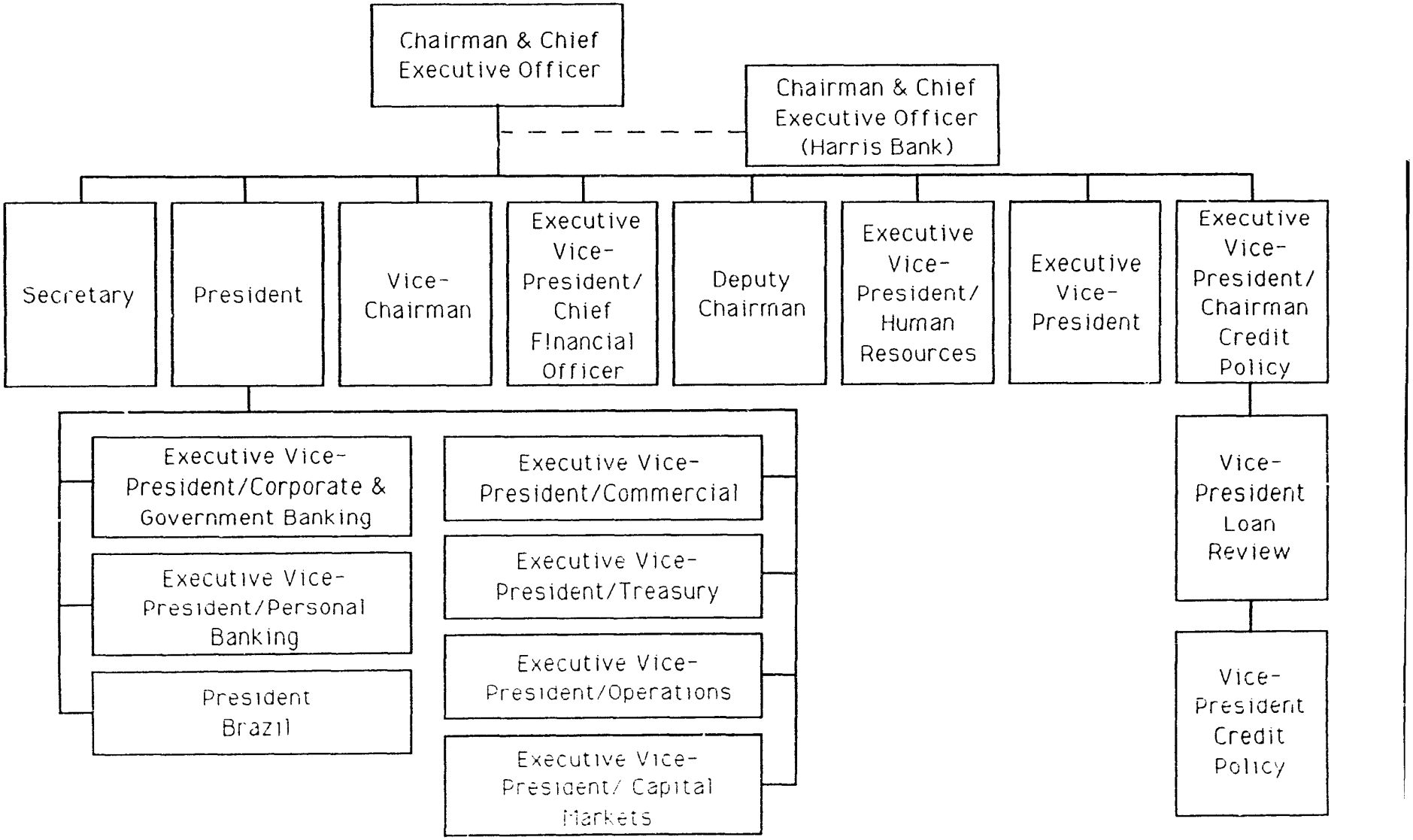
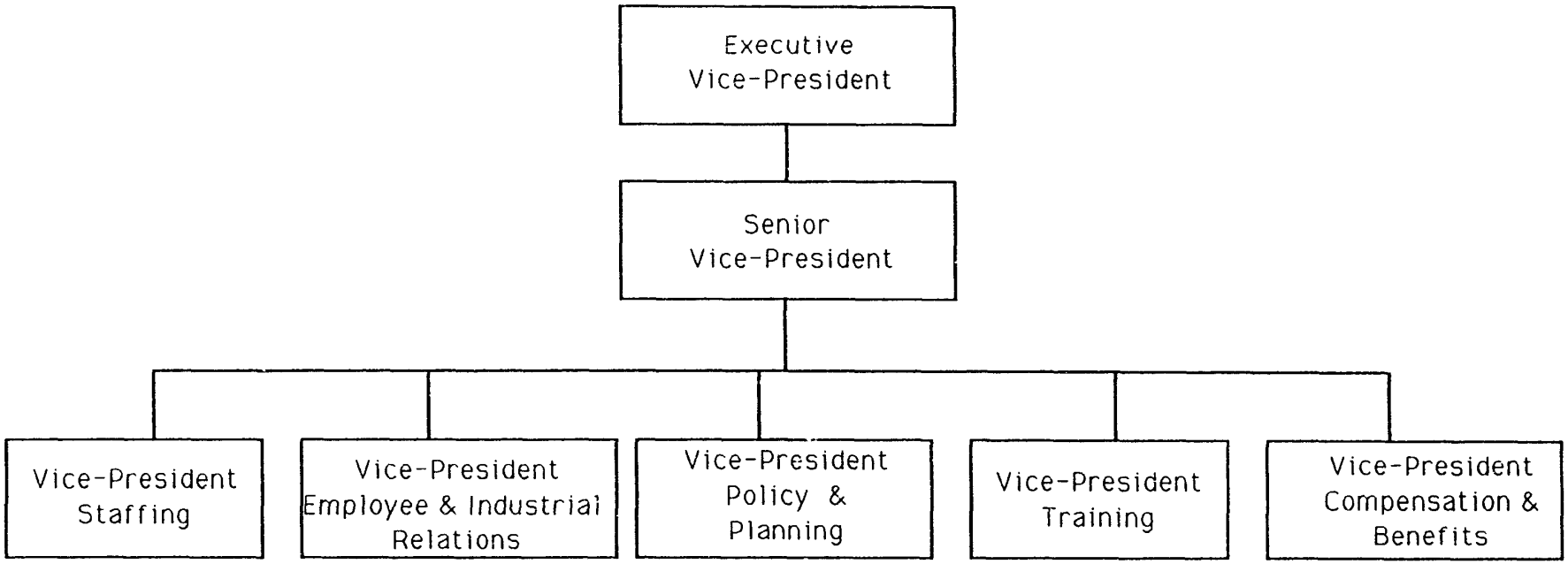


FIGURE 2: ORGANIZATION CHART OF THE HUMAN RESOURCES DIVISION OF THE BANK OF MONTREAL



these groups are funneled through the Vice-President, two designated senior managers or the appropriate representative in the Regional Department.

Corporate Training's involvement in this project began with a call from the members of the task force to the Vice-President, Corporate Training. He appointed a senior manager from his department to the Task Force investigating the future direction of the branch, its employees and all underlying issues relating to this new configuration.

Problem definition

A two-fold problem existed: not all branch employees were currently performing the existing skills at an acceptable level and additional job requirements would soon begin to place increased demands on all employees in the branch system. The first and immediate step was to get all employees in a position where they could perform existing tasks to a satisfactory level. The second, more long-term step was to map out the future requirements of employees in the branch network in terms of new roles and responsibilities. This second step, while more long-term than the first, still required addressing within a fairly short period of time.

Definition of Terms

As Gagne (1977) states, a broad educational goal such as " providing acceptable customer service" is broken down through analysis first into parts called job tasks, and at an even more detailed level, task descriptions. Task descriptions have a number of applications, among which is a classification which describes all tasks for which the target population is responsible. The usefulness of the task description for learning purposes is optimized by the subsequent inclusion of prerequisite skills and a categorization of learning outcomes.

The Employee Skills Inventory comprises several of these broad goals as Gagne calls them. As a learning analysis was the initial step in the analysis of determining the content to be included in the Employee Skills Inventory, the training designed will have taken into consideration the necessary prerequisite skills and a categorization of learning outcomes, although they are not listed in the skills inventory itself.

Initially, the supervisor and employee will determine the gaps in skills/knowledge for all branch employees. Once this is accomplished, formal courses, job aids and/or on-the-job exposures will be advised to close these gaps. The skills inventory is the "catalogue" of the component pieces, and one part of the entire training component offered to enhance skill and knowledge building.

Rationale

While representing a period of immense change and upheaval, the impending reconfiguration of the existing setup would present many new opportunities for the Bank. This was particularly true of those employees in the branch system who were classified as employees of the Personal Banking Group, the group with the largest and most diverse target population.

As Corporate Training was a key player on the task force investigating the future direction of training and other structures required to support the new roles and responsibilities of branch employees, the department was in the rare and enviable position of potentially influencing the direction and scope of the project, not only from a training perspective but from a broader performance perspective.

One of the fundamental courses which new hires and those seconded to Corporate Training attend is the "Front-End Analysis for Soft-Skills Training ", offered by the Harless Performance Guild in Atlanta, Georgia. While the department is committed to producing effective training materials and job aids, it is also espousing a broader performance improvement approach to identify the various components of a given problem, instead of reacting to the oft-demanded " Our people need a management course. Have it ready next month". Corporate Training is cognizant of the fact that many performance problems have more than a

training component. This department is encouraging the participation of other Human Resources departments in developing complementary solutions to provide a broader, more comprehensive approach to performance problems within the organization.

Personal Banking had historically been a good "client" of Corporate Training. Much of the relationship had grown as a result of this Line group's increasingly frequent and complex new product launches and seasonal campaigns which demanded a high level of expertise and service from employees. May of the supporting training materials needed revision almost every year because of important new benefits or systems enhancements which allowed and demanded new levels of customer service.

While some form of needs assessment or validation had always been carried out for each of the specific training programs, what was missing was an overall Personal Banking curriculum. No analysis had ever been carried out on the entire branch manager job. This was unfortunate, and as more and more training packages were developed and implemented, it became clear an outline of the broader system in which each of these pieces fit was a critical missing component. As this was not available initially, the training materials themselves increasingly suffered from some sort of "internal bleeding". This bleeding resulted from the fact that even though the boundaries of each separate training

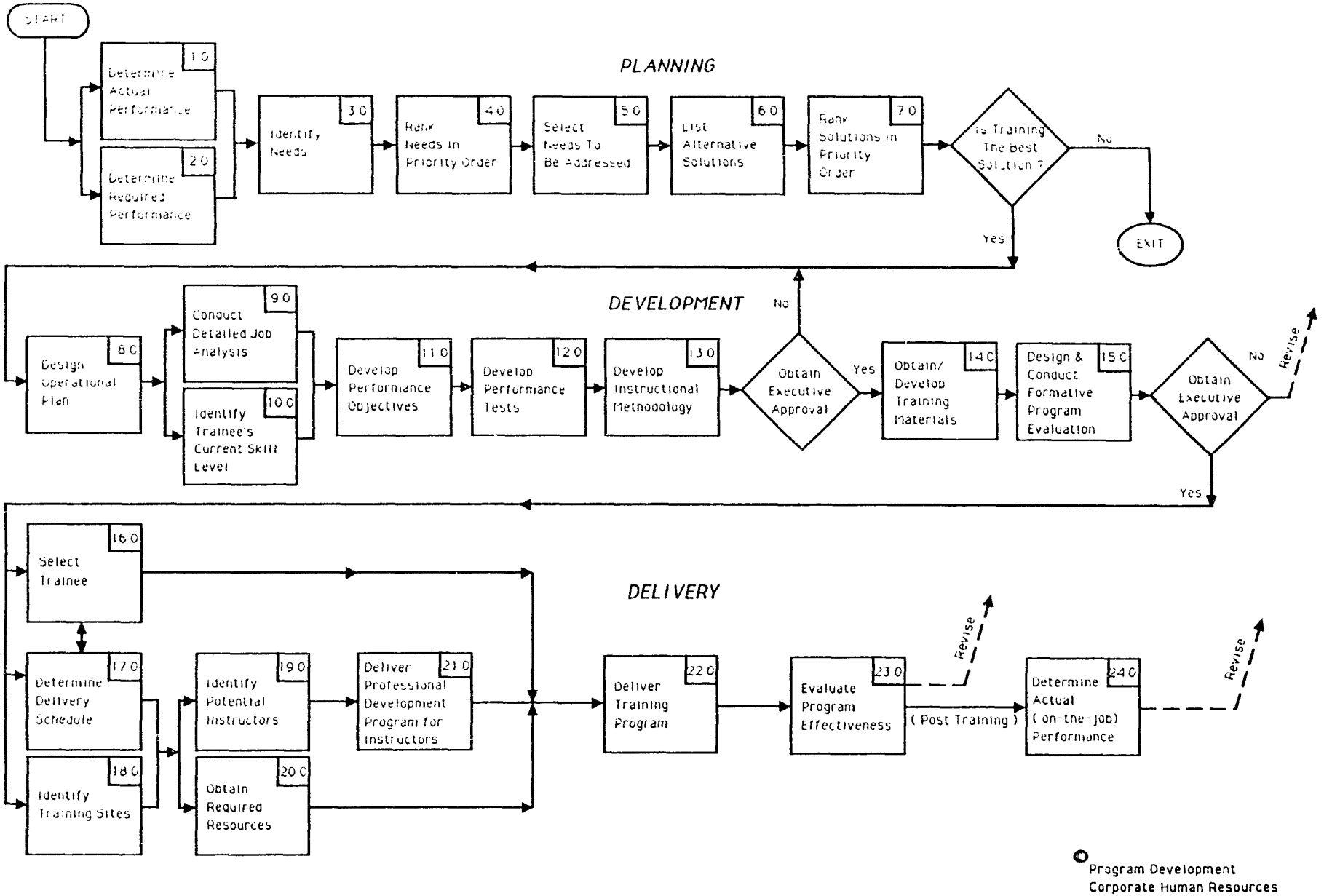
package were identified and validated, clients and other interested parties were wont to say that "such and such" had been left out. After some discussion, there was, unfortunately, little concrete evidence to show in terms of where in the larger system, shown graphically through an instructional analysis of the entire branch manager job, the "such and such" would and should fit. It became more and more difficult to stay within boundaries for given training materials identified through a needs analysis as people felt that it was better to put it all in a product they knew was going to be delivered rather than waiting for an always elusive " future training program".

Corporate Training had spent much time and effort in designing and developing self-study training packages, job aids and classroom-based courses for the population in the branches across the country. These training materials have been produced by following an instructional design model based primarily on the Dick & Carey (1978) model. The Bank's "24-Step Process" (Figure 3) was developed by two in-house instructional design experts with outside consultative support from Dr. Roger Kaufman.

These training programs and job aids were used with varying degrees of success by members of the target population.

Feedback from Line indicated that much of the training material,

THE BANK OF MONTREAL TRAINING SYSTEM



Program Development
Corporate Human Resources

especially the self-study guides, was not being used because people either didn't know the material existed or they didn't have the time to access it. This was particularly frustrating to Corporate Training because the material had been designed on a modular basis so that employees with a specific deficiency would not have to work through an entire training guide to try to find the one area in which they were deficient. Also frustrating was the fact that much time and effort had gone in to developing a "User's Guide to Training" which, while providing valuable information on available training and job aids for this target audience, had not been distributed at the branch level. This decision was outside the mandate of Corporate Training, and was made on the basis of cost control.

It was decided that the skills inventory would be implemented in such a way as to provide a link between the skills identified for all jobs within the branch network and the training available/necessary to support those skills, and would be positioned as a key training management tool. As a "User's Guide to Training" had recently been launched by Corporate Training, the relevant sections would be added to the proposed guide to combine all essential components for the entire process. Thus, the employee skills inventory will serve as the tool, not only to help employees identify the skills for which they are currently responsible, but also to determine the need for skill/knowledge development through training, and then effectively implement, monitor

and recognize the completion of that training.

A recent survey cited in Kirkhorn (1988) details how employees of American Telephone &Telegraph (AT&T) preferred to be recognized for successful application and completion of a new skill. Data indicate that recognition is most effective when it has the following criteria: It is provided by local management, is immediate and frequent and is consistent with established criteria. As well as expecting too much before reinforcers are provided, managers and supervisory personnel have perhaps not devoted enough time to differentiating between descriptions and evaluations of events or behavior. To that end, the skills inventory is an attempt to provide managers with a means for communicating expectations to the employee. In order to ensure that all branch personnel could satisfactorily perform these tasks required of them and to provide a model whereby future tasks could be easily communicated and addressed, a skills inventory was determined to be a necessary step in encouraging managers to isolate the training needs and subsequentiy offer the training and support necessary to ensure employee competence.

The goal of this thesis, therefore, was to detail the design, development, implementation and evaluation of this tool to support the Line manager in managing the responsibilities of training and developing all employees. Thus, the skills inventory should be seen as part of a

broader problem and solution, rather than as the sole component of that solution.

CHAPTER II

REVIEW OF THE LITERATURE

This chapter will examine the usefulness of using models of the instructional design process in general, and in the corporate environment, in particular. Further sections will more closely examine relevant research on the analysis and formative evaluation phases of the process. This literature review provides an overview of different perspectives on the various components of the instructional design process and thus serves as the theoretical basis for carrying out the design, development, evaluation and implementation of the employee skills inventory. Discussion and conclusions of the material and processes involved in this production are made more meaningful in light of this research and review.

A SYSTEMS APPROACH TO INSTRUCTIONAL DESIGN

Briggs (1977) defined instructional systems design as " the planning of instruction in a highly systematic manner where all components of the system (objectives, instructional materials, tests, etc.) are considered in relation to each other in an orderly but flexible sequence of processes; the resulting delivery system is tried out and

improved before widespread use in encouraged" (p. xxi). Later attempts at defining instructional design have become even more descriptive and explicit. Instructional design has been defined by Gagne, Briggs and Wager (1988) as incorporating five key assumptions: " First, it must be aimed at aiding the learning of the individual;...it has phases that are both immediate and long-range;...systematically designed instruction can greatly affect individual human development;...it should be conducted by means of a systems approach;... and finally, (it) must be based on knowledge of how human beings learn". The long-term phase that these researchers allude to includes both primary instructional design items destined for the student, but also other items to support this material destined for the teacher or course manager. Thus, the skills inventory as a tool to allow managers to better manage their personnel training and development falls clearly within these parameters. This definition is similar to the one given in the glossary of terms in the field of Educational Technology published by Association of Educational Communications and Technology (1979), for an instructional system: "...a design area relating to all or part of a combination of Instructional System Components (including a Technique plus any one or more of the other components) and a specified management pattern which : (a) is designed to achieve specified competencies or terminal behaviors for a total course of instruction, (b) includes the instructional methodology, format and sequence called for in the design, (c) includes a complete set of management procedures for using the system, (d) is replicable and

reproducible, (e) has been developed through the complete instructional development process and (f) has been validated."

The internally developed "24-Step Process" used to design and develop the skills inventory contains each of the components cited in the above definition. It is a good example of the "systems" approach to instructional design. Many researchers and practitioners in the field of instructional technology who have adopted this type of approach including Dick & Carey (1985) and Romiszowski (1981, 1984). It is prudent to note what appears to be some lack of clarity in the literature between systematic and systemic approaches to instructional design. Grovdahl & Lange's (1989) research indicates that corporate instructional designers differ in their advocacy for the use of the systematic approach rather than the conventional approach to instructional design. They report that "because the use of systematic instructional design is considered to have a more positive value, instructional designers in corporate settings may assign that word to whatever strategy they use". These researchers detail a wide variation in terms of the use of the systematic approach to designing instruction ranging from those who accept it as being totally feasible in a corporate setting to those who find it to be a totally academic (and therefore useless?) approach. There is no definition of the word "systematic" which makes it difficult to determine if the concept of "systemic" is embedded within it. The "systemic" concept does appear to be assumed by Thiagarajan (1987) who says that many

instructional designers don't follow the typical "analyze, design and evaluate" procedures which are the bedrock of the systematic design of instruction. It also appears to be an assumption of Stolovitch (1985), who indicates that more than 90% of the instructional materials delivered in the general marketplace, whether business or academic, are not evaluated before being introduced.

In summary, much of the literature supports both the use and effectiveness of a "systems" approach to instructional design in both academic and business settings. Recent studies have underlined the fact that practice is somewhat less enthusiastic in embracing this approach than one might suppose from reading the literature. In designing and developing the skills inventory there is no question that using this approach both caused and avoided problems. This is not to say that the "systems" approach is too cumbersome or complex to use in a real world setting. The question remains as to whether or not the skills inventory could have been put in place effectively using an approach other than an instructional design model.

THE INSTRUCTIONAL DESIGN MODEL

The basic approach used in the design, development, implementation and evaluation of this skills inventory is the "24-Step Model", a model based on the Dick & Carey Systems Approach Model for

Designing Instruction (1978). As Andrews & Goodwin (1980) show in their comparison of some forty instructional design models, most show the analysis stage as following that of setting objectives. The "24-Step Model" shows these two stages reversed, as does the Dick & Carey (1978) model on which it is based. This can be noted in the models used by the military and in industry as well; as Butler (1972) concurs when stating that "task analysis is virtually the fundamental source of training objectives". This was the approach taken in developing the skills inventory. Objectives were a key outcome of the analysis sessions, and were presented as a support to the learning hierarchy drawn up for executive approval.

While the product under development for this study is not essentially instructional material, it is an integral component of a system designed to support the effective and efficient use of instructional material, both existing and yet to be developed. As Gagne, Briggs & Wager (1988) point out, the immediate and long-range phases of instructional planning are best performed as separate tasks, and not mixed together. More immediate instructional products may be greatly influenced by accompanying long-range instructional products, such as teachers' guides, and other materials. In this spirit, we will follow most of the steps of the instructional design process outlined for the development of this product, although some may be followed more by intent than by letter.

The following sections of this chapter will deal with the analysis and evaluation components of the instructional design process in more detail.

ANALYSIS

Job analysis is defined in educational literature as part of the needs assessment process. Romiszowski (1981) states that "the literature of educational technology is full of names for analysis techniques, but there seems to be little standardization or coherence in the use of these terms". In this paper, our nomenclature will focus, then, on the systems under analysis. Three such analyses were carried out: a job, task and target population analysis.

The job analysis carried out as part of designing the employee skills inventory reflects the approach espoused by Romiszowski (1981). He says that job analyses are usually carried out by an expert in analysis with help from the master performers of the job. Once the job analysis has provided a structure of the job with all component duties and tasks identified, a task analysis may or may not be required. For designing and developing training materials, however, a task analysis is generally required. As the training materials were not being developed at the same time as the skills inventory, this is the approach taken in the

development under study. A full task analysis was not carried out for the development of this skills inventory, but will be completed before developing subsequent training materials. While the skills inventory contains the skills required of all employees in the branch network, it does not go into all the tasks which make up these skills. This approach would have resulted in a guide unusable because of its size. As Foshay (1986) notes, skilled practitioners know when to stop the analysis process. A key question to ask is " If I stop at this level of detail, how certain am I that my design will be effective and efficient?" (p.104). This question proved useful in determining where and when to cut off the analysis phase in the development of the skills inventory. The important point in considering the answer is to ensure the integration between analysis and design in the context of the most cost-effective approach to solving the problem.

Most of the literature indicates that there is no one best way to perform a task analysis; the technique(s) chosen will reflect the kinds of tasks and the prescriptions for interventions designed to address the performance problem. Jackson(1986) indicates that a task analysis is concerned with developing the answers to three types of questions:

a) who are the performers?

b) what results/outputs do/should they produce?

c) when? how? where? under what conditions?

Davies, Ammerman & Melching (1979), (cited in Educational Technology by AECT) define a task analysis as " the analysis and synthesis of a real world behavior and/or situation, including knowledge, skills and attitudes including: a) the listing of activities performed; b) an indication of the sequence and relationship among the knowledge, skills and attitudes; c) the conditions under which the knowledge, skills and attitudes occur, and; d) the acceptable criterion for knowledge, skills and attitudes performance." (p.59) A job analysis as defined by Davies et al is "the performance of a task analysis to identify the major tasks performed on a job".

To choose the analysis technique best suited for a given situation, according to Foshay (1986), it is important to understand how alternative techniques represent various kinds of tasks and how these techniques are linked to solutions. As the job/task analysis for the skills inventory was undertaken to identify macro level sequencing, a learning hierarchy analysis was selected. This type of hierarchy deals with identifying behavioral objectives to describe the conditions, actions and criteria for each component of the skill being taught as well as the relationship of entry level to terminal behavior. The learning hierarchy is a way of representing the sequence in which underlying concepts, principles and skills should be taught so the learner will fully master the job skill. This learning hierarchy analysis was used as the first step in identifying components of a terminal skill used by branch managers;

other types of analysis are available to further analyze these concepts, as development activities dictate. Gagne, Briggs & Wager (1988) list two major classes of task analysis: procedural and learning-task analysis. For the branch management jobs, the latter was more appropriate. As Gagne (1985) says, a learning hierarchy is a result of identifying successively simpler components of a target skill. To conduct this type of learning-task analysis for intellectual skills, one works backwards from a target skill. Continuously asking the question "what simpler skills would a learner have to possess to learn this skill?" is a good way to derive the various subordinate skills, once the terminal objective has been identified. It is important to note that the learning hierarchy represents the learning sequence as represented by this outline, though this is not the only alternative. The first level of Romiszowski's (1981) four levels of analysis is useful when deciding the syllabus of curriculum and the overall sequence of units in the course. Gagne, Briggs and Wager (1988) agree that "one possible product of a learning task analysis is an 'instructional curriculum map...'" This was important in planning the methodology for the skills inventory, as although many people had quite a firm idea of what the job entailed, it could only be successfully discussed in terms of a detailed document, which the 'curriculum map' approach provided. Previous discussions on identifying and planning instructional materials had centred on job descriptions, primarily because they were the only documents which could serve as discussion points. Romiszowski (1981), however,

cautions against relying too heavily on previously prepared job descriptions. He suggests checking the reality of how the job is done against the outline given in the job description in order to ensure that any discrepancies are ironed out before further design is carried out. This was included in the analysis sessions.

In gathering information from members of the target audience, several types of approaches have been suggested. Two of the most prevalent are interviewing and observation. Rossett (1986) and Gilbert (1989) both opt for some form of observation as interviewing only has certain drawbacks which may result in a faulty data. Gilbert (1989) says that we must rely for our data "on observation, not on hearsay", even if this "hearsay" comes directly from the exemplary performers themselves as they will generally give a lot of misleading information. In order to elicit information from these "exemplary performers" in the most efficient manner, Spitzer (1989) has developed a format based on documenting discrepancies across "nine major human performance factors: expectations, capacity, knowledge, skills, attitudes, job design, incentives, feedback and tools and resources".

SETTING PERFORMANCE OBJECTIVES

Much has been written on the importance of creating well-written objectives which contain the following essentials, according to Mager

(1975): "a statement of what the student should be able to do at the end of the learning session (the terminal behavior); the conditions under which he should be able to exhibit the terminal behavior and; the standard to which he should be able to perform (the criteria).

Later literature reveals even more attention to the phenomenon as Romiszowski (1981) espouses through his inclusion of a fourth component of a well-written objective: that of the "instrument or measure of evaluation" and Gagne, Briggs and Wager (1988) indicate through their "five-component objective", which has been designed so as to enhance the "unambiguous communication of intent". This type of objective specifies these five things: the "situation in which the performance is performed, the type of learned capability, the object of the performance, the specific action the learner takes in employing the capability, and the tools, constraints or special conditions associated with the performance". Although this "five-component objective" goes farther than those of Mager (1975), Dick & Carey (1985) and Popham and Baker (1970), it does not necessarily include a criterion of performance. The criterion may or may not be included in the category of "tools, constraints or special conditions". Reasons for not specifying this component are tied to avoiding thinking that criteria are likely to be similar for each type of human capability. Gagne, Briggs and Wager (1988) state that a precise definition of objectives is required to communicate the purposes of instruction and to evaluate the instruction. They also

state that unambiguous objectives allow the instructional designer to determine which conditions of learning to include in the instructional materials. Romiszowski (1981) suggests their inclusion will serve to aid clear communication as it is much easier to agree or disagree with a precise statement.

The best-known defense of their inclusion in the process is undoubtedly Mager's (1975) classic "if you're not sure where you're going, you're liable to end up someplace else" (Preface). While most literature includes objectives as a key component of the instructional design process, some authors disclaim their effectiveness as they do not allow students to formulate their own objectives, thus forcing students to fit a mold of someone else's making. Rowntree (1974), (cited in Romiszowski,1981), urges us to be clear about the fact that "the denial of behavioral objectives does not mean that none is being achieved" and Romiszowski (1981) in his summary, states that they are "used at a practical level, even if rejected at a philosophical level".

Several writers require that objectives be classified into learning categories, among them Gagne, Briggs and Wager (1988) and Kemp (1977). This classification allows for a certain economy of thought and much more efficiency than would be the case if we continued to deal with each of the possible hundreds of objectives for a given course. Assigning learning objectives to one of the five major categories of human

capabilities greatly simplifies the subsequent steps in the instructional design process. This process will be followed in designing instructional materials identified through the analysis process. It was not followed in developing the skills inventory as only four objectives were identified.

DEVELOPMENT OF AN INSTRUCTIONAL METHODOLOGY

According to boxes 13.0 and 14.0 of the "24-Step Model", the development of an instructional methodology includes the following components: identifying the entry behavior and general characteristics of learners; analyzing objectives for structure and sequence; identifying the amount of content to be taught at one time; identifying the most appropriate medium for each chunk; selecting the most appropriate instructional techniques for each objective and organizing all components to coincide with principles of continuity, sequence and integration. The development of this instructional methodology will be dealt with in more detail in Chapter IV.

EVALUATION

Once the information has been gathered and the material has been developed, one must turn one's attention to evaluation. In almost any instructional design approach, two types of evaluation are suggested:

formative and summative. Formative evaluation allows us to validate and evaluate during the development of the materials so that data collected can enhance the form of the material before it is finalized. Summative evaluation, on the other hand, is concerned with evaluating the entire package of materials as they would be implemented in the real environment for which they have been developed.

Formative evaluation is concerned with "the evidence collected and interpreted during the phase of development used to form the instructional program itself" according to Gagne, Briggs and Wager (1988). This is a critical phase. According to Dick & Carey (1985), it can be divided into three main phases. The first is a one-to-one or clinical evaluation. In this phase the designer works with individual students to obtain data to revise the materials. The second stage is a small-group evaluation comprising eight to twenty students representative of the target population who study the material on their own and are tested to collect the required information. The third phase is usually a field trial where the emphasis is placed on testing the procedures required to support the launch of the instruction or material in as close to a "real- life " situation as possible. Weston (1986) identified an expert review approach which precedes the one-on-one feedback stage outlined by Dick & Carey (1978) and is typical of the first stage of the evaluation process used by most researchers. Not all researchers agree with this approach, however. Wager (1983) has

determined that the one-on-one evaluation is sufficient to allow corrective revision of instructional materials and thus cut down on time and costs; two very important considerations for all those involved in the instructional design process, especially in a corporate setting. In spite of these added costs, the expert review approach was felt to be a critical component in the formative evaluation of this skills inventory as it represents the first time something of this type was developed. Any additional input in this stage is paramount in ensuring its eventual acceptability and usefulness in the field. Thus, a four-step formative evaluation model, first proposed by Weston, will be adopted, based on the four separate stages outlined above.

At the heart of performance technology are the twin concepts of evaluation and feedback. These form part of an iterative cycle, which is the nucleus of the systems approach.

While the product under development, the employee skills inventory is not an instructional product, the model outlined above has been chosen as an effective means to validate the product through the development process. As the Dick & Carey instructional design process is an iterative one, and the validation of the product is an essential component throughout this process, the four-stage model will serve as a guide to the validation of the content of the tool itself as well as its implementation in the system. This validation process comprises

two components. The first will focus on ensuring that all necessary skills have been identified and that no unnecessary skills have been included in the product. The second will focus more specifically on the implementation process for this guide.

The effectiveness of the skills inventory in isolating the key components of the various jobs in the branch network across the country and serving as a useful tool in identifying and prioritizing gaps in employees' performance will be measured. Feedback from the various individuals and groups will help determine which modifications should be made to this tool, and how best to make them.

Now that the relevant literature and research has been reviewed to provide the theoretical underpinnings for the design, development, implementation and evaluation of the skills inventory, the following chapters will outline the methodology used to produce and present this tool to branch employees based on the "24-Step Process". Because this model was already in place, discussion will at times include elements of a case study approach which will detail where, when and how some of the steps and procedures outlined in the model can and should be amended.

CHAPTER III

PRELIMINARY STUDY: PROBLEM ANALYSIS

NEEDS ASSESSMENT

A team of managers from different functions within the Human Resources Division and representatives from Line Banking had been established as a task force to identify and analyze the components of the problem, and to come up with a recommended solution. One representative from Corporate Training, a senior manager, was part of this task force. The instructional designer on this project, myself, reported to her. No formal needs assessment or needs analysis was carried out. In the opinion of the task force, the gravity of the situation, in terms of declining market share and increasing customer complaints was such that a formal analysis would only serve to confirm the obvious and would waste valuable time in the interim. In the true spirit of performance technology, the task force, however, did see the solution as having several components: improved and increased training packages, a more competitive compensation package, new hiring specifications and a reconfigured working environment.

As the Bank's "24-Step Model" indicates, the problem analysis and identification phases had presumably been carried out in steps 1.0

through 7.0. Because of the iterative nature of the model, more validation of the conclusions reached by the task force would be built in wherever possible during the actual development line phases (i.e. steps 8.0 through 15.0).

The task force was charged with determining just how many of the approximately 20,000 employees involved in retail banking through the Canada-wide branch network system were currently performing at an acceptable level. Other than the bank's performance management system, administered once a year, there was no mechanism in place to begin to access the employees' capability in performing the required skills. While the management appraisal system provided some important information, it did not provide a clear outline of the required skills and/or knowledge. Rather, it gave a norm-referenced view of employees' ability, when a criterion-referenced system would provide more in-depth information on how many were lacking which skills. Although the job description did in some manner delineate some skills required of branch employees, it did so in a very vague and ambiguous way. Using this document as a discussion tool proved very frustrating as comments were open to interpretation. One could rarely reach a consensus. There was an inability to clearly describe just which employees should be performing which skills at what level.

Given these mandated requirements, Corporate Training

suggested that, as a first step, a job analysis be conducted to establish those skills and the knowledge exemplified by the "master performers" currently in the system. Once this inventory of skills had been compiled, it would serve as an excellent vehicle for the Bank to establish the gap between current and future skill requirements. It would also provide the basis for designing a workable tool to help branch staff identify and train up those skills identified as weak in their personnel. This would make for a more efficient and effective manner of identifying and addressing performance problems which could be improved through a training intervention. A further use of this inventory would be to serve as the basis for establishing a Personal Banking curriculum as the additional roles and responsibilities of the branch personnel became clearer. This work was difficult to do from the job descriptions as the skills were described in such broad and vague terms as to be open to widely-ranging opinions on scope and context which could not be easily resolved. A more clearly defined listing of skills and knowledge was required.

Corporate Training was contracted to conduct a job analysis to determine exactly what skills were required of exceptional branch managers as they were currently performing the existing job. The new aspects of the job - specifically those tasks required in the investment and lending areas - would be added later after consultation with Executives and sessions with those employees involved in pilot-testing

these new roles and responsibilities. These skills would later be vetted by executives and those on the task force, as well as those in the Operations Division of the Bank whose responsibility it is to design job descriptions.

Although no formal needs analysis was carried out, those on the task force, representing both Line and Staff groups met regularly with representatives of the target population. There was obviously some reluctance on the part of Line employees to be as open and frank in their discussions with their Executive, as members of the Executive represent, in many instances, a promotion or move within the context of a career path for these Line employees. Included in the initial job analysis, therefore, was a question on some of the factors which prevented employees from doing their job as they would like to.

This analysis represented an attempt to address the four key components affecting performance: skills and knowledge, motivation, incentives and environmental concerns. These critical components have been identified by various practitioners in the field of performance technology (e.g.,Harless, Rossett, Romiszwowski). While Corporate Training was interested primarily in the first of these four components, most performance problems stemmed from a lack or discrepancy in a combination of them. Harless (1985) has stated that approximately 28% of the time, a performance problem is due solely to a

lack of skills and/or knowledge on the part of members of the target population. Thus, it was determined to be worthwhile to try to provide a more substantive focus as to what the non-training factors might be. Because the instructional designer represented a fairly impartial body who could not significantly influence the career path of the participants, this information was given quite freely at the end of the analysis sessions, once a degree of trust and openness had been established.

Once the job analysis had been completed and the results formatted in a learning hierarchical chart, it was submitted to the task force for discussion and verification. It was presented along with a list of "Factors Other Than Training Issues" which required investigation and possible action before a fully satisfactory answer to the problem was developed. Executive approval was requested before further design on the skills inventory was carried out.

CHAPTER IV

DESIGN AND DEVELOPMENT OF THE MATERIALS

The design and development of the skills inventory and the guide in which it would be presented was subsequently undertaken. The Employee Skills Inventory would be a paper-based guide, available in all branches, for all branch staff, in both English and French.

The evaluation design consisted of the development of evaluation materials to assess the applicability and ease of use of this guide in the branch system. The activities of this stage of the instructional design process are based on the "24-Step Process" and the on-going validation of the direction and focus of the task force through discussions with members of the target population.

There are two distinct phases to the design and development of the guide entitled" The Employees Skills Inventory": the first is the design and development of the skills inventory (both the branch skills standard and the individual skills inventories); the second is the development of the supporting material which details the broader process of determining if, in fact, there was a skill/knowledge gap and if so, whether this gap may best be addressed through a formal or informal training intervention.

STEP 8.0 - DESIGN OPERATIONAL PLAN:

The first step in the development line of the "24-Step Process", the Operational Plan, was completed. A Project Summary (figure 4) was submitted to the Vice-President of Corporate Training, detailing the various operational issues, as well as some broad design considerations, for departmental sign-off before proceeding with the project.

As Morrison (1988) says, the instructional designer often assumes the responsibility for directing and completing the instructional development project in business and industry and thus shifts from role of consultant to the client to the role of project director. Although Tessmer (1988) has experience in an academic setting, rather than in business, his findings that the duties and roles of the Subject Matter Expert(SME) and designer are not well defined and thus can cause considerable frustration appears to confirm Morrison's views. Tessmer feels that because the client is usually the SME, this leads to an "in authority-an authority" perception. Even after this role definition has taken place, the assumption that individuals will stick to their agreed-to roles is often just that - an assumption. Often, in a corporate setting, there are many individuals with many different goals and needs. Ongoing communication, as well as reviewing the success of initial roles and responsibilities, play a significant role in assuring the schedule of costs and timelines previously established. Clearly, as Greer (1988) and

PROJECT SUMMARY (Amended 4/87)

Project Title: _____ Project # _____

Project Manager: _____ Date: _____

Client(s): _____
(name) (title) (division)

Main Contact: _____

Background: _____

H. R. Contract Priority: _____

Target Population

Banking Group: _____ No. Affected: _____

Job Title: _____

Grade Level(s): _____

Location: _____

Prerequisite Skills/ Knowledge: _____

Non-Training Alternatives: _____

Learning/Project Objectives: _____

Curriculum Contribution: _____

Project Deliverables: (Key Dates)

Needs Assessment Complete - _____

Program Design Complete - _____

Program Development Complete - _____

Pilot Test & Location - _____

Full-Scale Delivery - _____

PROJECT SUMMARY (Amended 4/87)

Project Title: _____ Project # _____

Estimated Completion Date - _____ Training Time - _____

Development Resources:

- Bank -

Name	Title	Dept.	Project Role	Est. Days

- External -

Contact	Title	Company	Project Role	Est. Cost

- Internal - (Hard Dollar Cost of Extraordinary Projects - see Appendix below) $ _____

- Regional Training Delivery Liaison: _____

Cost/Benefit Analysis Comment: _____

Budget Allocation: _____

Training Methodology: _____

Pilot Instructor(s): _____

Permanent Instructor(s): _____

In-Unit Training Guide (if applicable): _____

Evaluation Plan:

Level (1) - Reaction - _____

Level (2) - Learning - _____

Level (3) - Performance - _____

Level (4) - Valuation - _____

PROJECT SUMMARY (Amended 4/87)

Project Title: _____ Project # _____

French Courseware:

Translation Required No ____ Yes ____ Est. Person Days: ____

SME Vetting Required No ____ Yes ____ Est. Person Days: _____

If NO, how will dual language availability be accomplished & what is cost?

Maintenance Plans:

Reinforcement Plans:

Comments:

_____ Project Manager

_____ Senior Development Manager

APPROVED TO PROCEED: V. P. TRAINING _____ DATE: _____

Sleezer & Swanson (1989) agree, the roles and responsibilities must be clarified and agreed to if the project is going to meet the budget requirements and deadlines set out in the initial contract, in this instance, the Project Summary. After several years of frustrating efforts in trying to assure the success of projects without a formal system in place, the Project Summary was drawn up and implemented as a mandatory preliminary step to instructional design and development. The Project Summary also represents the first Executive control point as the Vice-President must sign off for the department. Sleezer & Swanson (1989) indicate that without these explicit process control decisions, " a number of people, including subject experts, trainers and managers of other departments will shape the training department's policy for the purpose of serving their own best interest".

STEP 9.0 - CONDUCT DETAILED JOB ANALYSIS

Notwithstanding Gilbert (1989) and others who question the value of using only the interview method instead of the observation method to gather information, the job analysis was conducted by using the interview method in the interests of time and cost efficiency. As the job analysis was to serve as the basis for defining a curriculum for Personal Banking and for developing a management tool for supervisory personnel in the branch, it was felt that observation could and should

play a role in the subsequent design of any training falling out of this initial analysis.

A list of the potential representatives of the target population to take part in the analysis sessions was submitted to Corporate Training by members of the Regional Line executive. A letter from the Executive Vice-President (Line) was sent to each Regional Vice-President (Line) requesting the names of any and all branch managers who fit the attached outline of a "high-potential, high-performing" branch managers or assistant branch managers. This tabulation of "high-potential, high-performing" managers was compiled by the Corporate Staffing department based on yearly personal performance information and input from the Regional Executive. It was felt that by using either branch or assistant branch managers, all necessary information regarding the jobs of all employees in the branch would be gleaned in as cost-effective and timely manner as possible. If any areas of discussion remain, these could be ironed out in later sessions, if required, or through various stages in the validation of the product.

Initial response to our request was generally favorable although participants had many questions as to exactly what they would be expected to do in the sessions. Part of the reason for insisting that Corporate Training make the initial contact with the participants was to ensure that a consistent, accurate portrayal of the process, time involved

and expectations was given. As the specifications for being included as a potential participant included being designated a "high potential, high performance" employee, reaction was generally good and a high degree of willingness to help was expressed. Before the analysis phase began, the participants were told what to expect in terms of process and that their open and frank discussion was vital to the success of the materials which would finally be produced. I was in a very favorable position, as I could ask many questions and test many assumptions without appearing to "lose face" and also without trying the participants' patience unduly. This approach may have met with less acceptance had this step been conducted by someone with more experience in banking.

The instructional/job/task analysis was initially carried out with representatives from Metropolitan Toronto as well as representatives from the outlying areas, such as London and Winsor. These participants represented all facets of the target population except females. While there was one female identified in the "High Potential, High Performing" classification, she was on holiday at the time this step was carried out. The initial results from the Toronto sessions were representative of a small section of the country which served a generally affluent marketplace and was more slanted to the urban centers than other areas may have been. Thus, it did not necessarily approximate conditions elsewhere in the system Subsequent sessions were held in various centers across the country to validate the initial results. These

centers were chosen so that a cross-section of all those representing the various sub-groups within the target population was included. An initial four-hour session was set-up in Toronto for participants identified from Central Region (which basically covers the province of Ontario). Three subsequent sessions of four hours were held, some three to four days apart. This enabled me to review and reconstruct all information from previous sessions prior to further meetings. As it is difficult to ask Line bankers to be absent from their jobs for any amount of time due to the daily demands, it was essential that the process be as effective and efficient as possible. There was little opportunity for revision once the managers returned to their jobs.

The number of sessions required with this initial group was difficult to establish initially. It depended largely on the quality of information elicited by the session leader, as well as the time available between sessions to rework and reorder the information. After some discussion, the group decided that to contribute a worthwhile document which could serve as a blueprint for all training programs to support the branch staff, we needed to meet at least four times, approximately four days apart. We would see how things evolved from that point on.

As the analysis sessions were held during the summer, some slippage in sticking to the specifications developed by the project team occurred. The overall representation , however, was broad, and

suggested substitutions were acceptable for the most part. These validation sessions were held in Winnipeg, Edmonton, Vancouver,Kelowna, Quebec City and Halifax (with sessions by telephone hook-up to other Atlantic Canada centers including St. John's and Fredericton). Efforts were made to ensure that the participants were representative of the target population which included both urban and rural branches, small, medium and large branches, managers with university and non-university backgrounds, older and younger managers, and managers with experience in the former pre-1980 environment, which at that time included lending responsibilities, now no longer part of the role of branch staff.

The hierarchical analysis was completed by beginning with the instructional goal, and completing the subordinate and prerequisite skills through a series of interviews. There was an incredible amount of information to be covered, assimilated and represented during this process. While it seems fairly innocuous to say that the analysis was begun by completing the instructional goal, it is fair to say that coming up with this goal was far from easy and was more time-consuming than had been anticipated. However, much more was accomplished by leaving the instructional goal "half-baked" after several hours work, and returning to it continuously to tighten the language and scope as more and more of the prerequisite and subordinate skills were identified.

A chart of all composite tasks and activities carried out by the

"expert" branch manager was compiled. This visual representation of the learning hierarchy was supported by a further document which detailed the "how" and "to what level" aspects of each of the tasks and activities in the visual representation, giving in effect, a listing of all learning objectives. This would serve as a starting point for designing and developing any required training to support the tasks and activities outlined, and also serve as the basis for a Personal Banking curriculum.

There were several constraints imposed on this process, either formal or circumstantial. Because of the heavy workload of these people and the fact that they represented "the brightest and the best", time was not a luxury. Pressure was being brought to bear from Line personnel and from customers such that they felt compelled to return to their branches. Travel time and costs being borne continued to mount, as did suggestions that these be kept to a minimum. I had already completed two other significant job analysis sessions which allowed for some short-cutting of the process in that I could make some assumptions based on previous work and have these validated rather than spend time truly eliciting all components from the participants.

As there were no members of the target population currently performing the tasks within the investment and lending arenas, the instructional designer began by conducting the job/task analyses sessions to elicit those tasks currently being performed. Once the

format had been developed, further work with the executive and those branches involved in pilot-testing new roles and responsibilities for investment and lending within the branch was carried out. As Harless (1985) says, "this situation is one of the softest possible in that there are no successful job incumbents to observe or interview". This portion of the process, however, will not be included in this study.

Included with the listing of the skills and knowledge required by managers to do their job was a list of key non-training issues which participants felt impeded them from doing their job. Although it was felt to be outside the mandate of the job analysis as such, feedback on these issues from the participants was considered important, and was therefore included. The feedback served as validation for the training solution as well as the other approaches considered as part of the overall solution.

I was solely responsible for conducting the analysis sessions which included eliciting all necessary information through questions and follow-up inquiries, interpreting participants' comments and transposing them into a hierarchy of learning objectives covering the major components of the job. Also generated was a supporting document which listed the learning objectives and the sub-objectives from which future training materials could be designed and developed. From these two documents, a skills inventory was developed which listed the main tasks

and activities required of all branch staff, in all types of branches across the country.

STEP 10.0 - IDENTIFY TRAINEE'S CURRENT SKILL LEVEL

Other Departments within Corporate Human Resources had access to much relevant and current information on the target population. In terms of this project we were interested in ascertaining the general profile of our potential users in terms of the following:

number of employees by position
education
experience
part-time/full-time employees
age

The Consumer Marketing Department was asked for figures on the number of small, medium and large branches as well as those branches designated as "high-profile". This information enabled us to ensure that all tasks listed in the skills inventory were valid for all employees, no matter what sized branch they worked in. We were able to include similar positions from these various categories of branches in our evaluation study to determine whether, in fact, there were any substantial differences in tasks required of employees in a small, medium and large branch, for example.

The target population analysis was easily conducted because of available statistics on the breakdown of the number of part-time and full-time employees in the branch, the split of males and females by number and position, and their education background and previous experience. The total population includes close to 22,000 people whose mother tongues are predominantly English and French but also include other languages. The makeup reflects the breakdown of the total population of Canada as per Statistics Canada and is available through the Corporate Staffing Department.

Information held by Corporate Staffing does not include such things as motivation levels or learning styles particular to this target audience. Given the numbers of the target population, it is difficult to come to grips with this type of target population analysis. This information is not available within the Bank, but the question of motivation levels was included as part of the agenda for the sessions held to conduct the job and task analyses across the country.

STEP 11.0 - DEVELOP PERFORMANCE OBJECTIVES

The objectives for the use of this tool were presented to the task force for final concurrence as follows:

1. Given the branch skills standard, the manager will be able to amend the generic set of skills listed as required, to more closely reflect the actual environment.

2. Given the individual skills inventory for the relevant branch position, each employee will be able to self-assess against all tasks listed for any job within the branch environment.

3. Given the individual skills inventory for the relevant branch position, each supervisor will be able to independently assess each employee against all tasks listed for that job.

4. Given the individual's and supervisor's assessments of performance, the employee and supervisor will be able to formulate a contract in which the required training is identified, set up and monitored.

STEP 12.0 - DEVELOP PERFORMANCE TESTS

This step was omitted as no performance tests were included as part of this package.

STEP 13.0 - DEVELOP INSTRUCTIONAL METHODOLOGY

The "24-Step Model" indicates six tasks that fall under this category: identify entry behaviors and general characteristics of learners; analyze objectives for structure and sequence; identify amount of content to be taught at any one time; identify most appropriate media for each chunk; select the most appropriate instructional techniques for each objective and organize all components to coincide with principles for continuity, sequence and integration.

Again, not all components were relevant in this case. No entry behaviors were identified as there were no skills which appeared below the line on the instructional analysis chart.

General characteristics of the population included a very broad range of items in terms of education, experience and age. While it was fair to say that in terms of mother tongue, the breakdown reflected that of Statistics Canada reports of approximately 80% English, 20% French; no such approximations against information presented in Statistics Canada publications could be made in other categories. A significant turnover of approximately 20% in employees working in the branch system did not change the general characteristics of the population, but compounded the problem of keeping the members of it up-to-date from a training perspective.

While the computer would seem an ideal medium for this tool, not only in terms of presentation of information but also in terms of management of the process, this was not feasible as no computers existed in the branches which could be freed for this purpose.

Dick & Carey outline five key components of an instructional strategy which appears to straddle steps 13.0 and 14.0 of the Bank's "24-Step Model". The remaining components of step 13.0 include pre-instructional activities, information presentation, student participation, testing and follow-through activities. Each of these components is embedded in the skills inventory with the exception of testing.

Pre-instructional activities

In designing instructional materials, the pre-instructional activities involve the following three things: motivate the participants, indicate what they will be able to do at the end of instruction and outline any prerequisite skills. Not all facets of this component were built into the materials as there are no prerequisite skills to outline. Motivation and "selling" the benefits of this new tool, were, however, extremely important. As the sheer volume of information contained in this guide made for an overwhelmingly bulky guide, consideration was given to making the guide appealing, as well as useful, to the target population.

Several options presented themselves in terms of including easy-to-use job aids and visuals to support the textual content. Also, as the skills inventories themselves were content-heavy, we decided to house the branch skills standard and individual skills inventories in different bindings, with individual skills inventories presented in separate booklets for each of the job classes in the branch. Written objectives as well as the benefits to the various user groups based on different perspectives were included.

Information presentation

The table of contents for information contained in the skills inventory broke down as follows:

- Products and Services, which covered all accounts, plans, products and services offered to customers through the branch system
- Customer Service, which covered customer service management and effective customer service;
- Marketing, which covered business growth and monitoring profitability;
- Branch Control, which covered cash control,accounting control, security precautions and administrative duties; and
- Human Resources/Management, which covered personnel administration and management.

Tasks under all categories outlined above translated very well from job analysis to skills inventory. The content areas as per the table of contents (above) represented the first level of objectives leading to the terminal objective in the learning hierarchy. All tasks in the Customer Service section, those in Marketing/Business Growth, Branch Control/Administrative Duties and Human Resources/Management were taken as objectives from the instructional analysis and listed in the skills inventory in the same format. The objectives were written in the skills inventory in terms of behaviors only. Criteria and conditions were omitted. Tasks in the other categories which included numerous skill areas with similar responsibilities were amalgamated somewhat using a "key" concept which considerably abbreviated the format while preserving the integrity of the content as described in the instructional analysis.

As the analysis had not elicited each of the products, services and skill areas in some of the content areas outlined above as they were too numerous, the information for these areas was developed in three iterations. The first was built from existing materials. The design team wanted to avoid unnecessarily creating a new approach which might confuse the target audience as they were already used to an established breakdown of duties and tasks. To do this, members of the design team took the existing lists of tasks from the materials, and tried to present them in lists as a starting point for the pages of the branch skills

standard. This approach did not work out as well as we had hoped. The listing down the left-hand side of the page contained a mixture of skills and content areas. Part of the reason for designing the key was to make the skills inventory less bulky and more effective in presenting a lot of material. This goal was not going to be attained by mixing content and skills in the same list. We wanted to keep the content areas purely that, grouped in a way that reflected branch practice. The existing materials did provide a good source in terms of content and in terms of format and showed us very vividly what we did not want to do, which is sometimes just as instructive as showing what to do.

Thus, the second iteration clearly showed a separation of content and skills, incorporating a "key" for those content areas which contained many products, services and responsibilities. From this format, we were able to then design the skills inventory in its two component parts; the branch skills standard and the individual skills inventories. The individual skills inventories incorporated features which supported the implementation and follow-up strategy.

As far as the branch skills standard and the individual skills inventories were concerned, the information to be presented was fairly obvious and lent itself to division into easily identifiable "chunks". With few exceptions, each page represented one complete content area so everything pertaining to that area was on the same page.

The branch skills standard was designed to contain all positions found in the branch, from manager through teller, on one page. One could easily identify the different performance levels quickly and easily to see the progression of responsibilities from teller to manager. This relevant information for each position was taken from the branch skills standard to the individual skills inventories where employees and supervisors could rate knowledge in each of the content areas against the standard for that position. Potential users would be able to see and access the appropriate information "at a glance" (Figures 5 &6).

Within the new guide, the skills inventory was designed in two different formats: the branch skills standard; and the individual skills inventories. These different formats allow supervisory personnel to easily identify and use each of the components to effectively meet each of the stated objectives.

The branch skills standard enables managers to effectively develop their own branch profile against the generic standard. The individual skills inventories allows supervisors and employees to assess performance against the standard for their own position; then from this identify individual and branch performance discrepancies on both an individual and composite level. As there is a wide variety in the size, location, marketplace, and staff in the some 1200 branches across the country, the inclusion of this step in developing a tool for supervisory

PRODUCTS & SERVICES
LENDING PRODUCTS & SERVICES

SKILLS INVENTORY STANDARD

KEY:
1. Explain the features & benefits and identify typical users
2. Select appropriate forms
3. Conduct successful interview to complete applications
4. Complete documentation to close loan
5. Process/distribute forms
6. Handle problems

SKILL AREAS	BRANCH MANAGER	ASS. MANAGER/ CUSTOMER SERVICE	CUSTOMER SERVICE REPRESENTATIVE	HEAD/ SENIOR TELLER	TELLER
Automatic Overdraft Protection	1 - 6	1 - 6	1 - 5	1	1
Personal Overdraft Protection	1 - 6	1 - 6	1 - 5	1	1
Personal Loan Plan	1 - 6	1 - 6	1	1	1
Personal Line of Credit	1 - 6	1 - 6	1	1	1
Gold Mastercard	1 - 6	1 - 6	1	1	1
Mortgages	1 - 6	1 - 6	1	1	1
Personal Demand Loans	1 - 6	1 - 6	1	1	1
Life Insurance					
- PLP	1 - 6	1 - 6	1	1	1
- Mortgage	1 - 6	1 - 6	1	1	1
			1		
Disability Insurance	1 - 6	1 - 6		1	1

POSITION : Manager/Assistant Manager, Customer Service EMPLOYEE NAME :

LENDING PRODUCTS

KEY:
1. Explain the features & benefits and identify typical users
2. Select appropriate forms
3. Conduct successful interview to complete applications
4. Complete documentation to close loan
5. Process/distribute forms
6. Handle problems

SKILLS AREAS	LEVEL OF SKILL/KNOWLEDGE				TRAINING PLANS		
	REQUIRED	ASSESSMENT BY		IDENTIFIED GAP	RESOURCES REQUIRED	TIMING	
		EMPLOYEE	SUPERVISOR			PLAN	ACTUAL
Automatic Overdraft Protection	1 - 6						
Personal Overdraft Protection	1 - 6						
Personal Loan Plan	1 - 6						
Personal Line of Credit	1 - 6						
Gold Mastercard	1 - 6						
Mortgages	1 - 6						
Personal Demand Loans	1 - 6						
Life Insurance							
PLP	1 - 6						
Mortgage	1 - 6						
Disability Insurance	1 - 6						

personnel was critical. If the tool could not be made to represent the environment in which most of the critical differences could be amalgamated, the motivation level of users would substantially drop.

These key components, the branch skills standard and the individual skills inventories, must be introduced and presented in a document which contains all the necessary information on who should use them as well as how, when and where they are best employed.

Often, Line has criticized Staff groups, and perhaps fairly so, for providing tools that do not reflect actual practice and are too cumbersome and complex to be of use in a changing, customer-driven environment. Thus, considerable effort was spent in conducting informal interviews and round-table discussions to ascertain exactly what needs the target population had for this type of document, and how they envisaged it being most easily and effectively implemented and used.

This approach has been worthwhile. First, the branch staff's desire and ability to shape the document to some degree for their own particular situation has been a critical factor in producing a branch skills standard. Also, the individualized skills inventories represented a "contract" between the supervisor and the employee for specific action within a specific time period. Again, to avoid the vagaries of job descriptions and help managers become more adept in defining and

communicating exactly what was expected of employees, this tool had to be something more than a listing of general skills and attributes. Furthermore, the tool had to allow the supervisor to prescribe, describe and monitor specific actions to improve a given lack of skill or knowledge, and subsequently serve as proof to show that the employee had been successful in doing so.

Thus, the guide which housed the skills inventories was designed to include the following key components:

- An initial section which identifies for the manager the four key steps to follow when using the skills inventories;
  1. determine whether training is the answer
  2. plan the training and development
  3. make training happen
  4. monitor and evaluate training

- A generic branch skills standard which identifies those skills required of every employee group working in the branch across the country;

- Individual skills inventories specific to each of the employee groups employed in the branch; and

- Relevant pages for the target audience from the "User's Guide to Training", a publication of Corporate Training which lists all available, formal training courses, programs, self-study guides and job aids offered by the Bank.

The employee skills inventory will initially be housed in a paper-based guide. While the content of this guide is subject to constant revisions, either because of the additional responsibilities to any or all of the employee groups or because of the shifting of some responsibilities between employee groups, it was not feasible to put the skills inventory on computer at this stage. This direction will be suggested to the task force in terms of future enhancements.

The packaging of the skills inventory comprises two separate pieces; a three-ring binder including all sections outlined above with the exception of the individual skills inventories to be completed by branch staff. These inventories are packaged separately and are available as stationary items which the branch can reorder as required. One binder is delivered to each branch across the country.

Managers begin the process by amending the branch skills standard if necessary to ensure that it reflects actual branch practice. Once any amendments have been made, the manager holds an information meeting to discuss the new tool and how it is used to ensure that the

branch has a fully trained staff at all times. Auxiliary uses such as cross-training and career planning are touched on as well. Once this information meeting has taken place, all first-line supervisors within the branch are responsible for working through the guide with all their direct reports. Employees begin the process by evaluating themselves on all the skills listed against their job by completing the individual skills inventories. The employee's immediate supervisor also assesses the employee's performance using these individual skills inventories. This information serves as the basis for a series of meetings to determine if training is required and if so, how and when to provide the training.

Included on these individual skills inventories, as indicated above, are spaces for assessing the level of skill and knowledge by both the employee and the supervisor and also spaces for the individual training plans for the employee. The resources required and the timing of the training will be noted so that follow-up can be effective and efficient. Monitoring and evaluating training will be done by the employee's immediate supervisor, once the training has begun.

STEP 14.0 - OBTAIN/DEVELOP TRAINING MATERIALS

Once the strategy had been determined and existing materials

had been reviewed in light of the objectives, it was decided to include the relevant pages from the existing "User's Guide to Training". They provided a clear, concise synopsis of the target audience, prerequisite skills, content, objectives and costs of each of the courses, self-study guides and other training material available through the Bank. The relevant pages were being updated just prior to the pilot test of the skills inventory and were included without changes with the material to be tested. Other than this material, nothing else yet existed which would serve the objectives and strategy of the product under development as it stood.

Several materials did exist which listed in detail the different products, services and responsibilities for which different branch employees were responsible in the different areas listed in the table of contents for the skills inventory. The design team tried to make use of these materials in providing the necessary breakdown to support some of the content areas; this, however, did not work as well as had been hoped. The material did provide a starting point for ensuring that all necessary content areas were included; thus saving a considerable amount of design time.

STEP 15.0 - DESIGN AND CONDUCT FORMATIVE PROGRESSIVE EVALUATION

While step 15.0 is discussed here for the first time in the

instructional design process, the entire process is itself iterative, such that the formative evaluation has been ongoing since the Project Summary had been prepared.

Four stages of formative evaluation were carried out: expert, one-on-one , small group and the field test evaluation. The first two stages were conducted concurrently.

Expert and one-on-one interviews

A number of expert and one-on-one interviews were held for several reasons. This was the first product of its type that Corporate Training issued and close adherence to an accepted systematic approach should ensure much needed acceptance later in the implementation process. The acceptance of this product would probably also focus more attention of accessing and using the self-study materials and job aids already existing. The sheer size of the product made detailed explanations and clear and concise breakdown of skills and knowledge very important. Anything less could clearly compromise the eventual acceptance of the product. Finally, the complexity of the information presented made it essential that the presentation be used by all levels of branch staff who have much diversity in terms of background and experience as discussed earlier.

These one-on-one sessions were held with the following participants:

1. two "experts" with a strong and fairly recent background as branch managers as well as experience in the Corporate Training Department;

2. one Human Resources personnel "expert" in Corporate Planning who was in a position to comment on the commonality of terms used. This guide was evaluated against other already-published career development and personnel systems products issued by other Human Resources departments;

3. two Regional Training Department representatives in Calgary and Montreal to ensure that vocabulary, task lists and instructions make sense from a regional perspective;

4. three regionally selected members from the target population to comment on all aspects of the product.

This stage was largely developmental. The feedback gained in this first step of the validation process was critical in the eventual successful launch of the product and made the time and care invested in this step very worthwhile. As the name implies, individual interviews were used at this stage to ensure that developers, users and experts were

aware of each other's perspectives and worked to make the product as worthwhile as possible.

Although the focus of this first step of the evaluation process is on the input from learners, a review of the material by specialists is also important.

Eight participants took part in this phase as previously discussed. Participants were given a first draft version of the prototype branch skills standard and individual skills inventory to review before being asked for their input. One member of the design team then sat with each person to record the revisions suggested on the prototype itself. This format of recording the changes was chosen because of the length and complexity of the material to be reviewed.

Small group interviews

The small-group evaluation was held with nine branches in the Central Ontario area. These branches included those designated small, intermediate and large and included the following breakdown of employees:

PARTICIPANTS

branch managers	9
assistant managers	6
customer service representatives	21
tellers	27
TOTAL	**63**

By investing so heavily in the expert and one-on-one sessions, we had largely refined the content of the skills inventory by the time we tested it in this format, and the results reflected this effort. The expert and one-on-one evaluation of the revised prototype had left us with some unresolved questions. We purposely left some ot these questions for the small group to give us feedback on by presenting our original thinking as well as the reaction of the first series of participants.

The information was discussed and written down by observers from the design team during the sessions. A pre-trial introduction and post-trial sessions were conducted by the design team with the participants. Any necessary follow-up telephone interviews were held once the initial feedback had been discussed.

Pilot Test

The pilot test was conducted Canada-wide with some ten percent of the total number of branches (i.e. 120 out of 1200) across the country. The pilot test included members from the target population representative of the diversity of backgrounds and education found in the total population.

Inventories and an evaluation questionnaire were provided to approximately 10% of branches across the country. Completed responses were received form 63% (76 out of the 120) pilot branches, who, in total, returned inventories on 619 employees. The employees included 27 branch managers, 75 assistant managers, 203 customer service representatives, 73 senior/head tellers and 241 tellers.

These branches were in all ten provinces and fully represented the three designations of branch size identified by the Consumer Marketing Department as well as the characteristics of the target population identified earlier in the instructional design process.

Materials used in both the small group and pilot test evaluations are found in Appendix A.

Results and discussion follow in Chapter V.

CHAPTER V

RESULTS AND DISCUSSION

This chapter outlines the major findings of this evaluation process and reports them in sufficient detail and number to justify subsequent recommendations as to how the guide could be improved.

Data were collected during each phase of the evaluation process. This formative evaluation was conducted to ascertain the following:

1. the inclusion of all required skills and knowledge for all positions within the branch

2. an acceptable and workable key which allowed all branch staff to determine the tasks for which they were responsible within each of the skill areas

3. the appropriateness of the content, sequence and layout of the material

4. the difficulties with proposed implementation procedures, clarity of instructions to branch managers, supervisors and employees, as well as administrative feasibility.

Time and effort spent on the formative evaluation process was seen as a critical component not only of the instructional design process, but also of the subsequent successful launch of the guide.

Participants were asked to comment specifically on typographical errors, inaccuracies and omissions in content, lack of clarity in instructions, time required to complete each component and any other general problems encountered. Care was taken to emphasize to the participants the importance of revisions at this stage of development and stress the usefulness of any and all questions, even those which might have seemed irrelevant to the questionner.

As the material was reviewed by each of the participants in the first two stages of the formative evaluation process, expert and one-on-one evaluation, results were noted based on the following questions posed to participants by a member of the design team. A member of the design team interviewed each participant individually. Responses were noted directly on the copies.

Expert, one-on-one, small group questionnaire

A. Is the breakdown of skills/knowledge appropriate to employees in the branch environment? Why or why not?

Are there areas included which should be deleted?

Please list.

Are there any skill areas not included which should be added?

Please list.

Are there any skill areas improperly labelled?

Please list.

Are there any skill areas which are unclear?

Please list.

B. Is the key appropriate for use by all target groups in the branch environment?

Why or why not?

Is the breakdown of the key appropriate for each given skill area?

Why or why not?

Should the key should be broken down into more steps.

Please indicate where.

Should some of the steps in the key should be eliminated?

Please indicate where.

C. Is the breakdown of skills in the branch skills standard appropriate for each of the positions in the branch?

Why or why not?

Should any areas of the standard be narrowed?

Please identify.

Should any areas of the standard be widened?

Please identify.

D. Is the content complete?

Is the content accurate?

Is the content up-to-date?

Is the sequence of material logical?

Should the sequence of material be changed?

Is the layout of material clear?

E. How much time did the completion of this inventory take?

To read the instructions?

To review the branch skills standard?

To make changes on the branch standard and individual skills inventories?

To complete the individual skills standard?

How much time do you think it will take:

To review individual/supervisor input with supervisor?

To review results of training?

F. Are the instructions to the supervisor clear?

If not, where should they be revised?

If not, how should they be revised?

Are the instructions to the employee clear?

If not, where should they be revised?

If not, how should they be revised?

Results

Results of the expert and one-on-one evaluation were generally positive. Participants felt that the breakdown of skills/knowledge as outlined was appropriate for employees in the branch environment. There were minor clarity issues which were cleared up by using more common terminology. Discussion about where to draw the line in terms of making the tool as broad-based as possible without making it too vague reflected the designers attempts to come to grips with the same issues. A few areas were deleted as individual items but were then incorporated under the existing headings. Two additions were incorporated which reflected new product launches since the design stage. The key was felt by all to be useful and appropriate. Again, some discussion centered around the proposed breakdown but after review, all agreed that it should stay as proposed. Most of the changes suggested centered around the breakdown of the skills in the branch skills standard. While the content was admittedly accurate and up-to-date, there were several admendments to the standard in terms of widening the skills of the junior branch staff. These suggestions for changes were reviewed and appropriate revisions were made prior to small group evaluation.

Valuable information was collected during this stage as to how the package should be positioned and implemented. While the evaluation process contributes to the effectiveness of the material being developed, it can also contribute greatly to the "public relations" aspect of launching a new product. While this aspect might be frowned upon by those purists who might view this as some sort of "hucksterism" in the instructional design process, it should also be recognized that it represents an extremely valuable launching pad. It can be invaluable in attracting attention and can help create an atmosphere of expectation and support from the target audience, who then create a demand through their Line executive. This is more in the vein of the creativity advised by Romiszowski. This demand, in turn, sometimes speeds the approval process and removes some potential barriers to the eventual release of the material into the field.

Small group evaluation

The small-group evaluation gave us the opportunity to carry out two things. The first was to validate the changes and new direction we had taken based on the findings of the one-on-one evaluations. The second was to try out the directions and implementation plans we envisaged for the country-wide pilot test and future launch.

A preliminary meeting was held with the area and nine branch managers by a member of the design team. This was held to introduce the concept and outline exactly what the development team wanted to see as a result of running these small group sessions. The instructional design team also wanted committment from the supervisors of those participating.

The small-group evaluation was introduced to the participants by a member of the design team. The purpose of this stage of the evaluation was to collect date on the following:

1. the effectiveness of the material
2. the quality of the inventories
3. the implementation of the material

Questionnaires and a round-table discussion after the trial provided the following information.

Small group evaluation - questionnaire

1. Is the branch skills standard feasible for your branch?

Yes	96%
No	4%

2. Do the components of each task or skill accurately reflect branch practice?

Yes	89%
No	11%

3. Is the Employee Skills Inventory package complete and accurate?

Yes	90%
No	10%

4. Is this tool useful in...

   (i) identifying gaps in skill and knowledge which can be resolved through training?

Yes	97%
No	3%

   (ii) linking identified gaps to actual course and self-study guides offered both internally and externally to ensure that the training identified matches branch requirements?

Yes	96%
No	4%

5. Please indicate the time involved in:

(i) customizing the branch skills standard	1.25 hours
(ii) presenting the concept to employees	0.50 hours
(iii) completing individual skill inventories	0.50 hours per employee

A round table discussion elicited the following points:

- All respondents felt that the proposed content of the skills inventory was very representative of what was expected from all employees in the branch. Minor changes in wording and some deletions, additions and amalgamations were suggested and incorporated.
- Feedback on individual managers/branches being able to adjust the branch skills standard for their particular environment was viewed very positively.
- The time involved for completing each part of the process was discussed. While time allotted for training always provokes a heated discussion with this audience, most agreed that the benefits of the process were well worth the time involved.
- Some instructions were not very clear and should be rewritten to make it easier for the participants to follow directions, and to save time.
- The objectives were clear and valid.
- The language was generally good, but some words were "our" jargon and didn't mean anything to the target audience.

Field trial evaluation

A pilot test of the materials was used to determine the effectiveness of the skills inventory in the field. Criterion of effectiveness had been established at 85% for the overall program. This goal was met.

A questionnaire was sent to all participants with results indicating that each of the objectives had been met.

Results of this pilot test, suggested revisions and next steps follow:

PERSONAL BANKING

Branch Staff Skills Inventory -Pilot Test

EVALUATION QUESTIONNAIRE RESULTS

Total number of respondents 63%

(76 out of the 120 branches)

1. Is the branch skills standard feasible for your branch?

Yes	89%
No	11%

2. Do the components of each task or skill accurately reflect branch practice?

Yes	96%
No	4%

3. Is the Skills Inventory package complete and accurate?

Yes	93%
No	7%

4. Is this tool useful in...

(i) identifying gaps in skill and knowledge which can be resolved through training?

Yes	99%
No	1%

(ii) linking identified gaps to actual course and self-study guides offered both internally and externally to ensure that the training identified matches branch requirements?

Yes	95%
No	5%

5. Please indicate the time involved in:

	Average time
(i) customizing the branch skills standard	1.5 hours

(ii) presenting the concept to employees	0.75 hours
(iii) completing individual skill inventories	0.50 hours per employee

6. Please feel free to add any comments you wish on the usefulness and implementation of this tool.

Usefulness:

o good concept/excellent tool/ useful package to identify training requirements and plans	48%
o time consuming, but very worthwhile/worth the time and effort spent to complete it	25%
o made employees more aware of true job requirements/ avoids assuming employees are well-trained/clear indication of what employees should know	20%
o employees liked having input/excellent employee relations tool/staff felt process was useful	8%

o gives branch management an overall branch picture — 7%

Implementation:

o branches require additional time/complement to complete necessary training, especially for part-time staff/part-time and casual employees work peak hours only-training time is limited/getting all P/T employees involved in training and maintaining customer service and complement requirements is still a problem — 43%

o training needs identified should be consolidated and addressed at area level/inventories can be scrutinized by Area Manager/can plan area training sessions for common 'gaps'. — 35%

Recommendations

1. A revised standard which incorporates the feedback received from participants in the pilot test should be developed.

2. This revised branch skills standard will be sent to Personal Banking and various staffing groups for their input before requesting final executive sign-off.

3. Pilot participants identified insufficient time/complement to effect training as a major barrier to using this new tool. Successful implementation dictates our attempting to provide for additional training time. This requires further discussion with Personal Banking.

4. An efficient reporting system will ensure that area and branch managers place a high priority on completing and following up on the exercise. This would also provide Personal Banking Executive and Corporate Training with information on branch training requirements, plans and activities. A skills data base, which branches could access, is the optimal solution, but will not be feasible in the short term. For launch, we propose branches and areas complete a Recap of Training Plans report as indicated in Figure 7. Branches would forward their reports to the area manager with the existing quarterly training monitor reports. Area managers then report to Regional Training Departments to allow Training to respond to Line needs.

5. The Employee Skills Inventory can be used as a tool to measure branch managers' performance in training and developing staff. Corporate Audit is prepared to make observations, where warranted, in

SAMPLE REPORT

AREA TRAINING PLANS RECAP

TO: Domestic Training Manager
FROM: Area Manager
FOR QUARTER ENDING: April 30, 1987

SKILL AREA	EMPLOYEE POSITION	TRAINING PLANS			COMMENTS
		RESOURCES REQUIRED	PLAN	ACTUAL	
FirstBank Investment Account	Managers	- Area meeting with CBU Mgr	May 12		
	AMCSs	- Branch training session	May 17		
	CSRs	- Branch training session	May 17		
FCMF	CSR	- RRSP Training Guide & FCMF job aid	April 15	April 30	- Training completed. CSR opened 3 FCMF accounts ($80,000)
	AMCSs	- RRSP Training Guide & FCMF job aid	~~April 20~~ *May 10*		- Training postponed due to illness
Frauds and Forgeries	Tellers (3)	- Coaching by head teller	June 15		- If other areas have same need, we could set up area session
	CSRs (3)	- All review P&P Topic 710-4	June 15		
		- Branch meeting	June 15		
Personal Administration	AMCSs	- Branch Manager Administration Seminar			- Please advise course dates for 3rd quarter
		- Review Manager's Guide to Human Resources	May 10		

SAMPLE REPORT

AREA TRAINING PLANS RECAP

TO: Domestic Training Manager
FROM: Area Manager
FOR QUARTER ENDING: April 30, 1987

SKILL AREA	# OF EMP.	EMPLOYEE POSITION	SUMMARY OF BRANCHES' TRAINING PLANS	SUMMARY OF AREA TRAINING PLANS	COMMENTS
FirstBank Investment Account	8	Managers	- Opening Accounts Training Guide	- Area meeting with CBU manager	Are there any training materials on Commericial Service ?
	10	AMCSs	- Branch training sessions - Opening Accounts Training Guide		
	33	CSRs	- Opening Accounts Training Guide		
FCMF	8	AMCSs		- FCMF Training Session at Area AMSCs meeting	
	21	CSRs	- RRSP Training Guide/ Branch Meetings/ - On-the-job coaching sessions & FCMF job aids		- FCMF job aids were helpful but most branches had to order more.
Frauds and Forgeries	6	Tellers	- P&P topic reviewed	- Area Security presentation	- Presentation was well recieved. Managers will reinforce.
	9	CSRs			
Personal Administration	5	AMCSs	- Manager's Guide to Human Resources	- 20 AMCs attended Branch Management Administration Seminar	- Please advise future course dates for remaining AMCs

the Audit Report. The potential application of the skills inventory to this and other performance measures requires direction from Personal Banking Executive.

6. The introduction to the guide should be reworked to include more graphics and provide a clear, concise, interesting opening. The content of the guide is extremely text heavy and a balance of graphics and simple bullet-form instructions would be desirable. A removable job aid should be included to allow users to have everything they need at hand without having to flip back and forth in the guide.

CHAPTER VI

CONCLUSION

The primary goal of this thesis was to detail the design, development, implementation and evaluation of the skills inventory. A secondary goal included examining the internally-developed instructional design process of a large corporation. The primary goal was met, it was met in conditions which allow us to draw some conclusions which might not have been possible had the constraints and structure of the environment been different.

In summary, the following conclusions can be drawn from the development of this product at the Bank of Montreal. The systematic design of instruction can indeed work in a corporate setting. This has already been documented by various other studies including Romiszowski (1981), Zigon (1987), Greer (1988) and Schmid (1987). The Bank of Montreal is to be commended for having introduced this concept in 1983 and continuing to use it since that time. The introduction of an instructional design model , in and of itself, however, does not provide any assurance that the process will be followed by members of the department, especially those with no educational technology or instructional design background.

Let us examine some components of the instructional design process as implemented in the Bank of Montreal to determine their usefulness in developing an instructional product.

The first component is the introduction of the "24-Step Model" itself. The development and implementation of this model represented the first time a formal design process had been implemented at the Bank. Initial reaction suggested that most people with no design background saw the model as being quite linear and rigid. This reaction was quite prevalent among the employees who had been seconded to the Training Department for a two-year rotation. To address this issue, the instructional design team prepared a series of job aids to explain and lead users through each step of the model. This was well-received, especially by those with little background in training. Perhaps the point to underscore in implementing an instructional design model in a corporate setting is that no model should be followed slavishly; our circumstances will dictate that some projects need a more creative, thoughtful approach to maximize the iterative nature of this process.

The "24-Step Model" was implemented under the auspices of an internal consulting group within the training function with a background in instructional design. The advantage of hiring those with a background in educational technology might lie in the fact that they can see beyond any algorithm inherent in the design and development phase of the

instructional design process and lead others in its successful application to a given problem. Thiagarajan (1987) and Nelson et al (1988) talk about the use and abuse of instructional design models and stress the need for the creative and flexible use of models in response to difficulties. As has been previously pointed out, many instructional design models are readily available. Care should be taken in their selection and implementation to ensure they are systemic yet flexible enough to work in a business setting.

To bring an instructional product from design through implementation without some form of instructional design process would appear inefficient and ineffective. While good products may have been produced without an explicit model, some form of intrinsic model was probably used as a guideline. There is nothing magical about an instructional design model. As many people say when they finally study the "24-Step Model", "it's just common sense". This may indicate that common sense may no be so common.

Implementing an instructional design model in a corporate setting will bring to the fore many questions which relate to the cost-benefit of the process. Following a series of steps which generally increase both time and energy in designing material historically accomplished in a much shorter time frame does not make sense to many who have always been measured by "getting something out there quickly". This is a

matter which is difficult to address from an "academic" perspective. It has seemed much easier to convince others of the benefits of this approach by examples of successful, past experiences within the corporation. In order to create an experience of this type, the instructional designer must have an appreciation of the politics and motives of key players in the corporation. This approach reinforces a key tenet of the instructional design process itself: never lose focus of the intended audience.

Within the instructional design process, there appear to be three distinct roles. These may be classified as instructional design, project management and subject matter expertise. Experience on this project and others at the Bank has shown that these roles are not always complementary, thus creating friction for the instructional designer who has assumed or been given the project management role for the project. Greer (1988), Tessmer (1988) and Foshay (1988) describe the multitude of roles assumed by the instructional designer in the course of program design. They report that this multitude of roles causes two critical problems. It not only creates an unfair and unmanageable workload but also sets the designer up for a conflict of interests in roles and responsiblities which can lead only to the unsuccessful completion of a given project. This aspect of the instructional design process is not often addressed in courses on the subject and unfortunately is one of the first painful lessons learnt on the job. If our approach to problem

definition and resolution is to be as useful as possible, educational technologists and those working in the performance technology field have to become more involved in communicating our mission, and encouraging dialogue with others to come up with a solid approach which meets the needs of all concerned. As Zigon (1987) indicates, this can be done by borrowing and applying strategies from other fields like advertising, communications and marketing to elicit commitment and support from top management. It is not enough, however, to do this from one perspective only. There is much benefit in working in a true team approach. In order to do this, instructional designers have to not only communicate their needs and roles in the process, but just as importantly, understand the corporate mission and relate their role within the training department to the achievement of corporate goals and objectives.

In reviewing the design of this particular instructional material within the steps outlined in the model, the following points should be noted:

1. The establishment of the operational plan, and its management through the Project Summary, was a critical initial step in establishing the parameters and roles and responsibilities of this project. While some shifting in roles and responsibilities occurred at various stages of development and implementation, the Project Summary represented a contract to be reviewed and amended as circumstances dictated over the

course of the project. Concerns and questions raised were then discussed in light of the previously agreed-to terms.

2. Conducting a job analysis was the step in the process which actually provided core content for the Employee Skills Inventory. It was a necessary step, not only in terms of providing the content for this instructional material, but also for the development of all subsequent training materials for this target audience. While a job analysis is identified in the "24-Step Model" as a critical component of designing instruction, it is also seen as a costly, time-intensive step from a Line perspective. This project afforded an opportunity to conduct a regionally-based target population and task analyses which provided solid information from which to develop this and subsequent training materials. The investment in conducting this front-end activity well was validated through the results of the formative evaluation. While it is clearly not feasible to conduct a thorough analysis for every project under development, it makes sense to try to establish appropriate linkages in the annual plannning phase to group development projects so that one analysis serves many projects. This type of forward planning is seen as responsive and proactive by both Line and Staff executive and enhances the receptivity and value of instructional technologists to the corporation.

3. Setting performance objectives and developing material in a team

approach works well within a corporate environment. Each member of the project team, the instructional designer, subject matter experts and project manager bring a different area of expertise to the project and provide a valuable perspective. This resulted in a focused, well-tested final product.

4. The formative evaluation stages were extensive and broadly based. These stages may have been redundant. After the time and effort of the expert and one-on-one evaluation, both the small-group and field trial may have been unnecessary. The next time a project of this size is undertaken by the Department, this instructional designer will be better positioned to evaluate whether all phases of the evaluation process are required.

In conclusion, the design, development, implementation and evaluation of "the Employee Skills Inventory" proved to be a successful experience. Further work and research should be conducted to ascertain an answer to the following question:

How can self-study/line-led programs and materials be implemented to ensure use by the intended audience? While it appears obvious that this type of material must be supported by supervisors and senior management, this does not often translate into specific policies and procedures. More work must be done on substantive approaches to

administer and foster the required support for this type of training. Both aspects must be dealt with in light of environmental constraints and job responsibilities. Follow-up questionnaires and focus groups after the implementation of this program will enable some of this direction to be determined for future projects.

In summary, The use of an instructional design model in the design, development, implementation and evaluation of this product has clearly shown its value. The model, as its design and evolution in the Bank of Montreal attests, has been a success. Much of its success has stemmed from the internal support it has received within Corporate Training. Input from all users has resulted in it being modified, enhanced and supported by both the instructional design team and the senior management of Corporate Training.

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APPENDIX A

SMALL GROUP / FIELD TEST MATERIAL

INTRODUCTION

DEFINITION OF COMPONENTS

The Introduction - an overview of what's included and what to do with each component (" Instructions to the Manager ") and a questionnaire on which to include your feedback (" Skills Inventory Commentary "),

The Skills Inventory Standard - an overview of the skills and knowledge required, by position, from the Teller through the Branch Manager; and

The Skills Inventory - an individual assessment and planning tool for each position and employee.

FOR THIS COMPONENT	THE BRANCH MANAGER WILL :
1. SKILLS INVENTORY STANDARD	* REVIEW (STEP 1) * CUSTOMIZE (STEP 2)
2. INDIVIDUAL SKILL INVENTORIES	* CUSTOMIZE AS REQUIRED (STEP 3) * HOLD A STAFF MEETING TO : (STEP 4) - INTRODUCE CONCEPT - DISTRIBUTE INDIVIDUAL SKILL INVENTORIES * CONDUCT ONE-ON-ONE MEETINGS TO (STEP 5) - DUSCUSS ASSESSMENT - IDENTIFY TRAINING RESOURCES (STEP 6) - PREPARE TRAINING PLANS (STEP 7) * IMPLEMENT/MONITOR TRAINING (STEP 8)

SKILLS AREAS

The skill areas you will be assessing are :

- Products and Services
- Branch Control
- Human Resources/Management
- Customer Service

(Marketing and Sales responsibilities will be added at a later date, to complete the inventory)

BENEFITS

Upon completion of the review and customization of the Skills Inventory Standard, you will have :

- a list of skills required for <u>your</u> branch staff.

Upon completion of the Individual Skills Inventories, you will have :

- the skills <u>required</u> as compared to skills which each employee can <u>demonstrate</u>;
- <u>identified training requirements</u> for individual employees;
- <u>a scheduled plan</u> to address the identified training requirements.

Because you and your employees will be directly involved in the identification of training requirements, and the preparation of individual development plans, your branch employee relations as well as the career counselling process can be enhanced.

TIME INVOLVEMENT

We estimate that the time involved will be approximately :

- four hours for Branch Managers
- two hours for those Branch employees with a supervisory role
- one hour for each Branch employee with no supervisory role

INSTRUCTIONS TO BRANCH MANAGER

Branch Managers/Supervisors should

STEP 1 **Review the Skills Inventory Standard and Skill Definitions**

The Skills Inventory Standard outlines the basic skill and knowledge requirements of each branch position. Review the Skill Definitions (Appendix A) for a full explanation of the skill requirements. Example 1 on the following page, shows that an Assistant Manager should be able to perform skills 1 - 6 with respect to Foreign Exchange, as defined in the key at the top of the page.

These standards were determined by Canada-wide branch surveys, and their distribution will ensure that a consistent message is sent to all branches. It will give you an overall perspective of the average branch, however, your branch requirements may differ. If they do, you will have to

STEP 2 **Customize the Skills Inventory**

Determine which skills, if any, should be eliminated/added because of individual branch circumstances. Differences in requirements may arise due to your branch size, location or type of clientele. If this is the case, amend the Skills Inventory to reflect these changes by deleting or adding any skills and/or knowledge required in your particular circumstances.

Example 2 on the following page, shows that skills 1-5 with respect to Foreign Exchange - ' Forward contracts/Swap transactions ' are not required of a CSR in the branch at Comfort Cove. The Skills Inventory Standard has been amended by the Branch Manager to show that only Skill 1, " Explain the Features, Benefits and Typical Users " is considered a job requirement.

Please make any changes to ensure that the Skills Inventory Standard accurately reflects the current requirements in your own branch.

PRODUCTS & SERVICES
FOREIGN EXCHANGE

SKILLS INVENTORY STANDARD

KEY:
1 Explain the features & benefits and identify typical users
2. Select correct rate
3 Select appropriate forms
4 Complete documentation to purchase and sell
5 Process/distribute forms
6 Handle problems

Example 1

SKILL AREAS	BRANCH MANAGER	ASS. MANAGER/ CUSTOMER SERVICE	CUSTOMER SERVICE REPRESENTATIVE	HEAD/ SENIOR TELLER	TELLER
U.S. & Sterling cash	1 - 6	1 - 6	1 - 6	1 - 6	1 - 5
Sundrey Foreign Currency	1 - 6	1 - 6	1 - 6	1 - 6	1 - 5
U.S & Sterling Cheques	1 - 6	1 - 6	1 - 6	1 - 6	1 - 5
Offset Transactions	1 - 6	1 - 6	1 - 6	1 - 6	1 - 5
U.S. Account Transactions	1 - 6	1 - 6	1 - 6	1 - 6	1 - 5
Travellers Cheques	1 - 6	1 - 6	1 - 6	1, 2	1, 2
U.S & Sterling Money Order	1 - 6	1 - 6	1 - 6	1, 2	1, 2
Foreign Drafts	1 - 6	1 - 6	1 - 5	1	1
Telegraphic Transfers	1 - 6	1 - 6	1 - 5	1	1
Forward Contracts/ Swap Transactions	1 - 6	1 - 6	~~1 - 5~~ 1	1	1

Example 2

STEP 3 **Customize Individual " Skills Inventory "**

The Individual Skills Inventory is the tool to assess the skill and knowledge level of each individual employee, and is packaged by position.

Ensure there is a blank Skills Inventory for each member of your staff and record each employee's name on his/her form.

If you amend any ' skills required ' on the Skills Inventory Standard, make sure the same changes in the ' Skills/Knowledge required ' column on the ' Individual Skills Inventory '.

STEP 4 **Introduce the Skills Inventory**

To introduce the Skills Inventory, you should :

i) hold a meeting with all employees to discuss the benefits and uses of this new tool;
ii) distribute Skills Inventories to employees and
iii) review instructions.

Ensure that employees understand that this is a development tool to identify and address areas of development, and while it can improve career counselling sessions, IT IS NOT A PERFORMANCE REVIEW.

STEP 5 **Discuss Assessment**

Allow employees no more than 1 week to complete the ' Skills Demonstrated ' column, and schedule a follow-up one-on-one meeting with their Supervisor to discuss their assessment.

In the event that the employee and his/her Supervisor assess the skill level differently, a discussion as to how and when the employee has *demonstrated* the skill on-the-job should provide an assessment that both agree on.

Identify development areas or " gaps " where the skill demonstrated does not meet the required standard.

POSITION : Manager/Assistant Manager, Customer Service EMPLOYEE NAME : Joan Smith

BANK-WIDE CAMPAIGNS

KEY:
1 Explain the features & benefits and identify typical users
2 Select appropriate forms
3 Complete documentation to purchase/make contributions/transfer/redeem
4 Process/distribute forms
5 Handle problems

Example 1

SKILLS AREAS	LEVEL OF SKILL/KNOWLEDGE				TRAINING PLANS		
	REQUIRED	ASSESSMENT BY		IDENTIFIED GAP	RESOURCES REQUIRED	TIMING	
		EMPLOYEE	SUPERVISOR			PLAN	ACTUAL
Canada Savings Bonds	1 - 5	1 - 5	1 - 5	-			
- Monthly Payment Purchase	1 - 5	1 - 5	1 - 5	-			
- Official Payroll Savings Plan	1 - 5	1 - 2	1 - 2	3,4,5	CSB training guide CSB job aids Bank of Canada info Demonstration by Manager	Oct 14/86 Oct 14/86 Oct.21/86 Nov.5/86	
RRSPs							
- Special Retirement Accounts	1 - 5	1 - 5	1 - 5	-			
- Super Daily Interest Retirement Accounts	1 - 5	1 - 5	1 - 5	-			
- Retirement Investment Certificate	1 - 5	1 - 5	1 - 5	-			
- Retirement Term Deposit	1 - 5	1 - 5	1 -5	-			
First Canadian Mortgage Fund	1 - 5	1	1	2- 5	RRSP training guide Coaching by Manager	Dec 15/86 Dec 20/86	
Registered Retirement Income Fund	1 - 5	1 - 5	1 - 5	-			

Example 1 on the preceding page shows that the Assistant Manager has demonstrated skills 1 & 2 with respect to ' CSB - Official Payroll Savings Plan '. As the required skill level is 1 - 5, skills 3, 4, & 5 have been enter in the ' Identified Gap ' column.

At this point, you have only determined that your employee has a gap in the skill and knowledge requirements of the task. Once the employee demonstrates that s/he can perform the task,you may wish to consider other factors which may affect the overall level/frequency performance.

If employee....	Then take this action :
Is NOT AWARE of the performance shortfall, i.e., WHAT is expected, WHEN is it expected, or is not able to MONITOR PERFORMANCE (e.g. submitted last three monthly reports three days later than expected)..	Provide constructive feedback, including desired performance levels
Is NOT REWARDED for performance at the desired level (e.g. an excellent cross-sell proposal submitted to the Manager was not acknowledged)...	Ensure that the desired performance is rewarded
FACES OBSTACLES which inhibit task performance (e.g. the CSR responsible for telephone answering must also serve the counter which is 60 feet away from the phone) .	Remove or minimize the obstacles

As we discussed above ·

If employee....	Then :
LACKS THE SKILL OR KNOWLEDGE to perform or progress as desired (e.g. it's Canada Savings Bond time and the new Customer Service Representative has never seen one)...	Read On ! Training or Development is likely the answer

STEP 6 If you and your employee decide that training is the answer, complete the ' Resources Required ' column by listing the appropriate self-study training guide, classroom course and/or on-the-job training plans. Your Area Manager has a copy of the " User's Guide to Training " which provides information on all available existing materials and courses To ensure that you are aware of all availlable existing training, we have enclosed excerpts from the " User's Guide to Training ". The catalogue describes all of the available courses and self-study guides.

Should you decide that a self-study guide and/or on-the-job training is the best solution, the chart below outlines options for in-branch training solutions and indentifies the necessary support required.

IN-BRANCH	TYPE OF SUPPORT NEEDED *			
	'Tutor'	Time	Place	'Tools'
- **demonstrated** by a skilled employee (e.g., early morning branch entry)	X	X	X	†
- **coaching** by experienced empoloyee (e.g., de-brief of a joint sales call)	X	X	X	†
self-study or line-led training : - limited Bank self-study (e.g., CSB Campaign Guide) and - " line-led ", i.e., supervisor as trainer (e.g., " Doing More In Customer Service ") training is available; you may consider other line-led activity	†	X	X	†
- **job-aids**: a step-by-step guide designed to be used during task performance (e.g., RRSP Job Aid; you may have others available on-site)				†
- **practice** of the required skill - either **routine** practice on-the-job **or scheduled seperately** (e.g., group role plays to practice selling a new product)	X	X	X	†

* X indicates support needed
indicates support may
† be required for an option

On-the-job training is particulary relevant for routine, job - specific tasks in which other, experienced employees are highly skilled and can assist in training

As Manager, you should ensure that the necessary **SUPPORT** is available, e.g, a skilled employee '**tutor**', **time, place** and **tools**, (e.g., VTR)

STEP 7 Prepare Training Plans

* Prioritize Your Training Requirements

The skills which require training should be looked at in terms of how often they are used in the branch.

IF	THEN
THE SKILL IS REQUIRED ON AN ONGOING BASIS (i.e. Personal Lending)	SCHEDULE TRAINING WHENEVER CONVENIENT FOR EMPLOYEE
THE SKILL IS REQUIRED AT A PARTICULAR TIME OF THE YEAR (i.e. Campaign)	SCHEDULE TRAINING JUST BEFORE SKILL/ KNOWLEDGE IS REQUIRED

* Set realistic goals, and insert planned completion dates in ' Plan ' column These dates should.

- Allow for " release " time and/or changed work hours to allow participation in training.
- Include work coverage arrangements.
- Ensure there will be no interruptions of employees involved in training
- Include feedback sessions; allow you to participate as required in a coach/ resource capacity.

Note: At this point, we ask you to send in the completed forms, (Commentary, Skills Inventories, accompanying letters and instructions) to the address indicated, with any comments and suggestions you have made. We suggest that the employee and his/her Supervisor should keep a copy for future reference

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STEP 8 Implement/Monitor Training Plans

After the training has been completed , and the employee feels s/he has demonstrated the skill, s/he will enter the date in the 'Actual' column. If you are satisfied that the skill level has increased to the desired level, initial beside the appropriate column. Review the Skills Inventory to address other ' gaps ' and discuss future development plans with the employee.

To ensure that the desired skill level is maintained, you should :

- recognize successful completion of training;
- reinforce the use of acquired skills;
- provide opportunities to practice/apply the skills;
- encourage the employee to share the learning with others; and
- provide ongoing coaching and counselling.

SKILLS INVENTORY

INSTRUCTIONS TO INDIVIDUAL EMPLOYEES

The skills inventory is a tool designed to help you and your Manager or Supervisor :

1. Identify the areas where you require training; and
2. Prepare a plan to ensure that you receive the training.

STEP 1 Review ' Skills Required '

- Review the Column " Level of Skill / Knowledge Required "
- For a full explanation of the skill requirements, refer to Appendix A, " Skill Definition ".

See Example 1 on the following page :

- These " skills required " were determined by Canada -wide branch surveys and pilot tests. The requirements for your position in the Branch have been verified by your Manager/Supervisor.

STEP 2 Assess Your Skill Level

- Complete the " Level of Skill / Knowledge Demonstrated " column by recording your assessment of skills you demonstrate on the job.

Note : This tool will help you and your Manager/Supervisor identify areas that might require additional training. It is not a performance review.

STEP 3 Discuss Assessment

- Your Manager/Supervisor will schedule a follow-up (one-on-one) meeting with you to discuss :
  - Your assessment and his/her assessment of your present skill level.
  - If the two assessments do not match, discuss how the skill was demonstrated on the job and try to come to a mutual agreement.

POSITION : Assistant Manager, Customer Service

EMPLOYEE NAME :

PRODUCTS & SERVICES

INVESTMENT SERVICES

KEY:
1 Identify customer need
2 Explain features and benefits and identify typical users
3 Match product and customer need
4 Select appropriate forms
5 Complete documentation to purchase, transfer and redeem
6 Process/distribute forms
7 Handle problems

SKILLS AREAS	LEVEL OF SKILL/KNOWLEDGE				TRAINING PLANS		
	REQUIRED	ASSESSMENT BY		IDENTIFIED GAP	RESOURCES REQUIRED	TIMING	
		EMPLOYEE	SUPERVISOR			PLAN	ACTUAL
Canada Savings Bonds	1 - 7						
Terms Deposit Receipt	1 - 7						
Monthly Income Deposit Receipt	1 - 7						
Guaranteed Investment Certificate/Monthly Income Investment Certificate	1 - 7						
U.S. Term Deposit Receipt	1 - 7						
U S Fixed Term Deposit Receipt	1 - 7						
Certificate of Deposit	1 - 7						
Savings Certificate (redemptions only)	1 - 7						

Example 1: Shows that an Assistant Manager should be able to perform skill 1 - 7 with respect to ' Investment Products as defined in the key

STEP 4 Identify ' Gap '

- Note any development areas i.e., where your assessed skill level does not meet the " required " level, in the ' Identified Gap ' column.

See Example 2 on the following page :

- There are numerous factors that may contribute to a performance gap e.g., not being aware of what is expected, or facing obstacles which inhibit performance. **Training may or may not be the best solution.**
- Discuss the possible causes of your development areas with your Manager/Supervisor.
- Also discuss any areas where a specific skill is not required for your position, but such training could benefit your personal development and the operations of the Branch.

STEP 5 Prepare Training Plans

- If you and your Manager/Supervisor decide that training is the answer, discuss and select the most appropriate training resources available

  e.g. * self-study training guides
  * seminars/workshops
  * on-the-job/cross training

- insert planned completion dates in ' Plan ' column
- discuss the specifics of your training plans i.e., times/locations, resources, work coverage arrangements and feedback sessions.

STEP 6 Complete Training

- As your training is undertaken, discuss your progress and any questions or concerns with your Manager/Supervisor as they arise ..
- When training is completed and you have demonstrated the task, record dates on your Skills Inventory. Have your Manager/Supervisor initial after seeing you perform this skill on the job. Review your plan and discuss future development plans with your Manager/Supervisor *We* suggest that both your and your Supervisor keep a copy for ongoing reference.

POSITION : Manager/Assistant Manager, Customer Service EMPLOYEE NAME : Joan Smith

BANK-WIDE CAMPAIGNS

KEY:
1. Explain the features & benefits and identify typical users
2. Select appropriate forms
3 Complete documentation to purchase/make contributions/transfers/redeem
4 Process/distribute forms
5 Handle problems

Example 1

Example 2

SKILLS AREAS	LEVEL OF SKILL/KNOWLEDGE				TRAINING PLANS		
	REQUIRED	ASSESSMENT BY		IDENTIFIED GAP	RESOURCES REQUIRED	TIMING	
		EMPLOYEE	SUPERVISOR			PLAN	ACTUAL
Canada Savings Bonds	1 - 5	1 - 5	1 - 5	-			
- Monthly Payment Purchase	1 - 5	1 - 5	1 - 5	-			
- Official Payroll Savings Plan	1 - 5	1 - 2	1 - 2	3,4,5	CSB training guide CSB job aids Bank of Canada Info Demonstration by Manager	Oct 14/88 Oct 14/88 Oct.21/88 Nov 5/88	
RRSPs							
- Special Retirement Accounts	1 - 5	1 - 5	1 - 5	-			
- Super Daily Interest Retirement Accounts	1 - 5	1 - 5	1 - 5	-			
- Retirement Investment Certificate	1 - 5	1 - 5	1 - 5	-			
- Retirement Term Deposit	1 - 5	1 - 5	1 -5	-			
First Canadian Mortgage Fund	1 - 5	1	1	2- 5	RRSP training guide Coaching by Manager	Dec 15/88 Dec 20/88	
Registered Retirement Income Fund	1 - 5	1 - 5	1 - 5	-			

OVERVIEW OF PROCEDURES

WHO DOES IT ?	WHAT IS REQUIRED ?		HOW MUCH TIME DOES IT TAKE ?
YOU	STEP 1	Review Skills Required	15 Minutes
	STEP 2	Assess Your Skill Level	30 Minutes
YOU AND YOUR MANAGER/ SUPERVISOR	STEP 3	Discuss Assessment	30 Minutes
	STEP 4	Identify ' Gap '	15 Minutes
	STEP 5	Prepare Training Plans	15 Minutes
	STEP 6	Complete Training	As required

APPENDIX A

SKILL DEFINITIONS

Explain The Features, Benefits And Identify Typical Users

- Explain the features of the product or service including :
  - characteristics
  - rates
  - fees
  - legal and Bank requirements
  - servicing information
  - customer responsibilities

- Explain the benefits of the product or service, including the value and competitive advantages as they relate to customers' emotional and financial need.

- Identify other Bank of Montreal products and services that complement this product or service for complete customer package.

- Describe the characteristics of a typical user.

Select Appropriate Forms

- Identify the form number, purpose and location of all forms and documentation relating to the product or service.

Complete Documentation

- Accurately complete all necessary forms, giving explanation to customer as required, as measured by the First-time acceptance by customer and/or processing department.

Process/Distribute Forms

- Verify that all forms are accurately completed
- Distribute copies as required
- Ensure forms are dispatched and filed as required

Handle Problems

- Follow-up and resolve customer or processing department inquiries or complaints (e.g., lost or rejected items)