CONCORDIA UNIVERSITY
FACULTY OF ENGINEERING AND COMPUTER SCIENCE

ENGR 201
PROFESSIONAL PRACTICE AND RESPONSIBILITY

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CHAPTER 06

THE PROFESSIONAL RELATIONSHIP

TOPIC 1 : A RELATIONSHIP BASED ON TRUST

- **The nature of the relationship**

  - The *Professional Code* (R.S.Q., c. C-26) does not explicitly define the *professional relationship*; it only specifies that, to determine if a professional order should be constituted, account should be taken of the following factors :

    > [section 25 (3)] the personal nature of the relationships between such persons and those having recourse to their services, by reason of the special trust which the latter must place in them, particularly because such persons provide them with care or administer their property;

> [section 25 (5)] the confidential nature of the information which such persons are called upon to have in practising their profession.

- The *Professional Code* also specifies that :

> [section 26] The members of an order shall not be granted the exclusive right to practise a profession except by an act; that right must not be granted except in cases where the acts done by these persons are of such a nature and the freedom to act they have by reason of the nature of their ordinary working conditions are such that for the protection of the public they cannot be done by persons not having the training and qualifications required to be members of the order.

- The relationship is therefore, at least in theory, a personal relationship. This concept is not always obvious to professionals who provide professional services to mostly "corporate" entities, e.g. to a company, an administration or even a firm where they are mere employees. This is not a concern for engineers alone: architects, accountants, land surveyors, forestry engineers, town planners, chemists (only to name a few) face the same dilemma.

- To what extent engineers define their practice as *intersubjective* where two subjects (the engineer and the client) interact because the customer faces a particular need or problem will greatly influence how the engineer perceives his situation and duties : the more the relationship is perceived as intersubjective, the greater the ethical stakes will become.

- This may be true even in a context where the engineer is an employee.

- Examples abound :
  - The plant engineer who designs new tools for production employees
  - The engineer in the public service who manage individual citizen's cases
  - The consulting engineer who is sent out to manage a large industrial project

- However, the professional relationship may also be viewed as more "*objective*", even "*technical*", if the scenario involves a particular

problem concerning actual design, production, health, safety, management, litigation etc. Even professionals usually viewed as involved in more "personal" relationships, such as medical doctors, lawyers, social workers etc. may come to view their practice that way.

- A few examples :
  - The engineer who designs electronic circuit boards for consumer products
  - The quality control engineer
  - The power plant shift superintendent.

- According to some, the notion of "professional act" does not allow to define the essential components of the professional relationship.

- **<u>A theory of the professional relationship</u>**

  - One theory (Schön and Argyris, 1973) holds that there are two models :

    1. The "economics and legality" model where, ideally, the relationship between the professional and his client will be defined by the acts that this professional is allowed by law to take, since each and every act demands a formal qualification.

       This behaviourist approach makes it easy to determine which acts concern a profession or another, an controls can be accurate and efficient.

       <u>An example</u>: Following a major accident (The roll-on/roll-off passenger car ferry *Herald of Free Enterprise* capsized in about 90 seconds in the approaches to the Belgian port of Zeebrugge en route to Dover in England at 7:05pm local time on March 6, 1987, its bow doors having been left open), an engineer is called upon to design a computer-based safety interlock controller for deck doors on seagoing ferries.

2. The "educational" model where, ideally, an intersubjective relationship is created between a person in need (and, perhaps, vulnerable) and a professional who will diagnose and understand the need, search for a solution, mobilise resources and implement a solution with the concerned person.

   This cognitive approach will put forward the professional's communication and ethical competence.

   An example: After an intervention by a municipal inspector following violations of environmental regulations, an engineer is called upon by a property owner to resolve repetitive overflow problems with a domestic septic waste treatment installation (countless such cases occur every year).

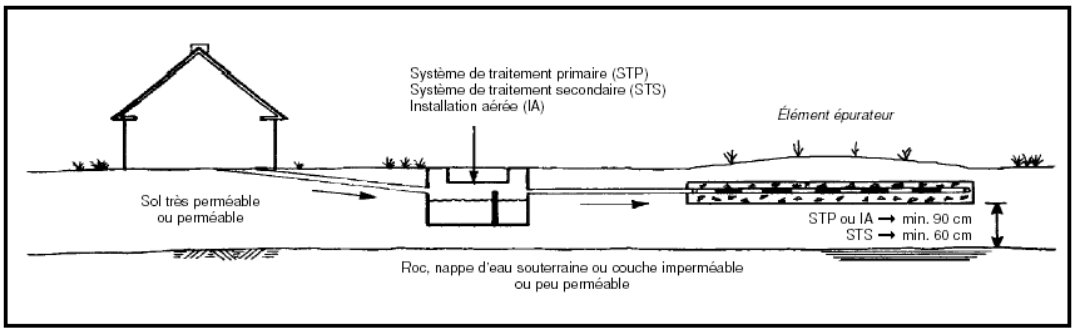

Figure 6 **Dispositif de traitement type avec élément épurateur**

- The meaning of "professional relationship" will therefore be a changing one. However, three major elements will generally be present to a varying extent :

  1. Communication / relationship
  2. Expert advice / knowledge
  3. Intersubjective intervention

TOPIC 2 : THE IMPORTANCE OF COMMUNICATION

- Engineers have a reputation, deserved or not, of being lousy communicators. This is a major problem.

- **Why communicate ?**

  - Practicing a profession is done "for others" :

    3. The practise of the engineering profession consists in performing for another any of the following acts, when they relate to the works mentioned in section 2:

    (a) the giving of consultations and opinions;

    *(*b) the making of measurements, of layouts, the preparation of reports, computations, designs, drawings, plans, specifications;

    (c) the inspection or supervision of the works.

    (*Engineers Act*, c. I-9)

  - The *Professional Code*, the *Code of Ethics of Engineers*, the *Civil Code of Québec* and various other laws and regulations make it an duty for professionals to communicate with their client and, if applicable, with other beneficiaries (or "victims"?) of their works and the general public.

  - In many instances, communicating with authorities, notably when danger is believed to be present, is also compulsory.

  - *Professional Code* : see sections 32, 36, 37.2, 39.4, 58, 58.1, 60.1, 60.2, 60.3 and 60.4

- *Code of Ethics of Engineers* : the following sections are concerned with communications

2.03. Whenever an engineer considers that certain works are a danger to public safety, he must notify the Ordre des ingénieurs du Québec (Order) or the persons responsible for such work.

2.04. The engineer shall express his opinion on matters dealing with engineering only if such opinion is based on sufficient knowledge and honest convictions.

3.01.01. Before accepting a mandate, an engineer must bear in mind the extent of his proficiency and aptitudes and also the means at his disposal to carry out the mandate.

3.01.02. In cases where it is in his client's interest, the engineer shall retain the services of experts after having obtained his client's authorization, or he shall advise the latter to do so.

3.02.02. An engineer must avoid any misrepresentation with respect to his level of competence or the efficiency of his own services and of those generally provided by the members of his profession.

3.02.03. An engineer must, as soon as possible, inform his client of the extent and the terms and conditions of the mandate entrusted to him by the latter and obtain his agreement in that respect.

3.02.04. An engineer must refrain from expressing or giving contradictory or incomplete opinions or advice, and from presenting or using plans, specifications and other documents which he knows to be ambiguous or which are not sufficiently explicit.

3.02.05. An engineer must inform his client as early as possible of any error that might cause the latter prejudice and which cannot be easily rectified, made by him in the carrying out of his mandate.

3.02.07. Where an engineer is responsible for the technical quality of engineering work, and his opinion is ignored, the engineer must clearly indicate to his client, in writing, the consequences which may result therefrom.

3.03.02. In addition to opinion and counsel, the engineer must furnish his client with any explanations necessary to the understanding and appreciation of the services he is providing him.

3.03.03. An engineer must give an accounting to his client when so requested by the latter.

3.03.05. Before ceasing to exercise his functions for the account of a client, the engineer must give advance notice of withdrawal within a reasonable time.

3.05.04. As soon as he ascertains that he is in a situation of conflict of interest, the engineer must notify his client thereof and ask his authorization to continue his mandate.

3.05.06. In carrying out a mandate, the engineer shall generally act only for one of the parties concerned, namely, his client. However, where his professional duties require that he act otherwise, the engineer must notify his client thereof. He shall accept the payment of his fees only from his client or the latter's representative.

3.06.04. An engineer shall not accept a mandate which entails or may entail the disclosure or use of confidential information or documents obtained from another client without the latter's consent.

3.07.02. An engineer who agrees to a request contemplated in section 3.07.01 shall give the client access to the documents in his presence or in the presence of a person authorized by him.

An engineer may, with respect to a request contemplated in subparagraph 2º of section 3.07.01, charge his client a reasonable fee not exceeding the cost of transmission, transcription or reproduction of a copy.

An engineer charging such fees shall, before they are incurred, inform his client of the approximate amount he will be asked to pay. An engineer has the right of retention concerning payment of such fees.

3.07.03. An engineer who, in applying the second paragraph of section 60.5 of the Professional Code, refuses to allow his client access to information contained in any record established in this respect, must furnish his client with the reasons for such refusal in writing.

3.08.03. An engineer must inform his client of the approximate cost of his services and of the terms and conditions of payment. He must refrain from demanding advance payment of his fees; he may, however, request a deposit.

3.08.04. An engineer must give his client all the necessary explanations for the understanding of his statement of fees and the terms and conditions of its payment.

4.01.01. In addition to those referred to in sections 57 and 58 of the Professional Code, the following acts are derogatory to the dignity of the profession:

(b) pressing or repeated inducement to make use of his professional services;

(c) communicating with the person who lodged a complaint, without the prior written permission of the syndic or his assistant, whenever he is informed of an inquiry into his professional conduct or competence or whenever a complaint has been laid against him;

(g) not notifying the syndic without delay if he believes that an engineer infringes this Regulation.

4.02.02. An engineer must, within the shortest delay, answer all correspondence addressed to him by the syndic of the Order, the assistant syndic or a corresponding syndic, investigators or members of the professional inspection committee or the secretary of the latter committee.

4.02.04. Where a client requests an engineer to examine or review engineering work that he has not performed himself, the latter must notify the engineer concerned thereof and, where applicable, ensure that the mandate of his colleague has terminated.

4.02.05. Where an engineer replaces a colleague in engineering work, he must notify that colleague thereof and make sure that the latter's mandate has terminated.

DIVISION V
OBLIGATIONS RELATIVE TO PROFESSIONAL ADVERTISING AND PROMOTION AND OBLIGATIONS RELATIVE TO THE NAMES OF PARTNERSHIPS OF ENGINEERS

»»» see the notes for Chapter 07

- **Communication problems**

  - The cause of communication breakdowns is usually rooted in human behaviour. It is the source of most litigation.

  - The problems are in :
    - An absence of communication
    - Communication with the wrong person
    - Untimely communication (such as "asking for permission after the fact")

- Not volunteering enough information ("Trust me, I know"…)
- Inaccurate vocabulary (e.g. "approving" instead of "accepting", "installing" instead of "providing", "equal" instead of "equivalent"…)
- Using superlatives and adjectives without due consideration ("best", "most efficient", "most recent"…)
- Using catch-all words ("all", "every", "generally"…)
- Using uncommon vocabulary ("jargon", "technobabble"…)
- Making overly optimistic statements ("will comply with all applicable laws") or promises (on cost or delivery, for instance)

- **Verbal communication**

  - Verbal communication makes up a very large part of all communication in an engineer's work day.

  - It also is a root cause of many problems :
    - Memory forgets it or, worse, reinterprets it
    - It is not understood
    - It is not heard
    - It is not thought out carefully

  - To avoid problems :

    - Validate understanding through feedback (words have different meanings)
    - What matters should be expressed in writing (this may end up to mean "everything")
    - Confirm verbal agreements in writing right away
    - Make sure every interlocutor is identified (especially on the telephone or in impromptu meetings)
    - In a formal meeting, make sure that minutes are taken.

- **Written communication**

  - Writings remain ("*Scripta manent*", in Latin, as notaries say). They are perhaps the most reliable way to document information, technical data, opinions, decisions, etc.

  - In judicial proceedings, documentary evidence is "the best evidence".

- Avoid mistakes :
  - Have a quality system (under ISO 9000 quality management systems standards and/or ISO 14000 environmental management systems standards, among others) that includes procedures such as:
    - design review
    - contract review
    - document control
    - procurement
    - records
    - etc…

    http://www.iso.org/iso/iso_catalogue/management_standards/understand_the_basics.htm

    http://www.iso.org/iso/iso_catalogue/management_standards/iso_9000_iso_14000/iso_9000_essentials.htm

    http://www.iso.org/iso/iso_catalogue/management_standards/iso_9000_iso_14000/iso_14000_essentials.htm

  - Read everything before it is issued; get someone else to verify.

  - Sign or seal and sign the documents you issue (see sections 3.04.01 and 3.04.02 of the *Code of ethics of engineers*).

- **Electronic communication**

  - E-Mails, project websites, CADD files, electronic file transfer have many pitfalls that only add to the ones that plague written documents :
    - lack of confidentiality
    - not tamper-proof
    - evanescent
    - machine dependent

  - Many have tried to develop "fool-proof" and secure systems. Did they succeed?

- **Authenticating engineering documents**

  - In October 2008, OIQ issued "Guidelines for Engineering Documents". It is available in French and English on OIQ's web site (See the **Required reading** section below).

TOPIC 3 : THE CONTRACT

REFERENCE: "Guideline for Contract Employees and Independent Contractors V1.0" issued in September 2007 by the Association of Professional Engineers, Geologists and Geophysicists of Alberta (APEGGA), with the necessary adaptations for Québec

http://www.apegga.org/pdf/Guidelines/17.pdf

CONTENTS

- **PART 2 : EMPLOYMENT RELATIONSHIP**

  2.1 Categories of Employment
  2.2 Determining the Employment Relationship

- **PART 3 : ENGAGEMENT ISSUES**

  3.1 Recruitment Agencies, Personnel Firms and Executive Search Consultants
  3.2 Development of a Contract
  3.3 Scope of Services
  3.4 Reporting and Supervision
  3.4.1 Supervision Received
  3.4.2 Supervision Exercised
  3.4.3 Use of APEGGA permit to Practice and Professional Membership Stamp *[in Québec : Ordre des ingénieurs du Québec]*
  3.5 Professional Liability
  3.6 Quality Control and Assurance
  3.7 Professional Development
  3.8 Ethics and Professional Responsibilities

3.9 Organizational Integration
3.10 Intellectual Property
3.11 Duration of Contract
3.12 Advertising

- **PART 4 : BUSINESS OPERATION**

4.1 Accounting, Tax and Legal
4.2 Canada Revenue Agency, Canada Pension Plan, and Employment Insurance *[in Québec, also see : Revenu Québec and the Régie des Rentes du Québec]*
4.3 Employment Standards Branch *[in Québec : Commission des normes du travail]*
4.4 Workers' Compensation Board *[in Québec : Commission de la santé et de la sécurité du travail]*

TOPIC 4 : BEING AN EMPLOYEE

NOTE : this text is adapted from a non-current version of "The concepts of professionalism" by the Association of Professional Engineers, Geologists and Geophysycists of Alberta (APEGGA)

- **4.1 Providing professional services to the public through an employer**

No one thing places more pressure on the professionalism of a professional than does providing his/her services to the public through an employer.

When a large proportion of the members of a profession provide their service through employers, real and rather intractable pressures are also placed on the professionalism of the profession.

These statements are not an indictment of employers. It reflects only the problems faced by professionals operating in the employee-employer mode.

- **4.2 Labour Exchange Systems**

Each person in the labour force provides a service — his/her effort, judgement, advice — to someone or to an organisation in exchange for pay. Although there are many variations, two basic models of labour exchange systems are of particular importance to the discussion of professionalism. Two types of each of the models are discussed in order to illustrate that there is a series or a continuum of types.

A. The Professional / Client Model
   Type 1 — The "Ideal" Type of the Model
   Type 2 — The Professional/ Single Client Model

B. The Employee/Employer Model
   Type 1 — The Visible Customer
   Type 2 — The Invisible Customer

A. <u>The Professional / Client Model</u>

Type 1 — The "Ideal" Type of the Model

This is the traditional or "ideal" model for the controlled exchange of professional services for compensation.

- The professional's reasoned judgements, based on his/her knowledge of an esoteric, abstract body of knowledge, are supplied to clients.

- Because of the clients' lack of knowledge, they are dependent on the ethics and competence of the professional to insure that the advice received is in the clients' short and long-term best interests.

- The client is dependent on the professional for the ***identification*** of specific problems, for a ***prescription*** as to the remedial action to take (if in fact a problem exists), where to find someone who is competent to ***carry out*** the proposed action (often the same person who diagnoses and prescribes), and even for advice to know when (or if) the prescribed action has been ***successful***.

- The dependency of the client on the ethics, competency and commitment to public service of the professional is extremely high.

- Because of this client vulnerability, maintenance of standards through a professional association is critically important.

Operating in this way, the "self-employed" professional is relatively autonomous to choose which clients to serve, when and how, what to charge, etc. The professional association will establish "standards" for these matters.

Clients are free to obtain services from any professional based on their own preferences.

Career development corresponds to professional development. As one becomes more expert, more recognised by one's peers in the profession, the cases referred to this now "senior" professional are the most difficult ones: those which require the most carefully reasoned judgements based on the broadest command of the most abstract segments of the professional knowledge package, or those which will have a far-reaching impact on standards of practice, or those which require the most up-to-date, in-depth knowledge of a specialized area.

Two facts are important to note. Firstly, the professional is relatively autonomous. Secondly, the professional association is the major quality control factor in the professional's work life.

Type 2 — The Professional/ Single Client Model

As the number of clients diminishes, the power of the remaining clients to control the time when the professional works, the type of work, the pay (fee) for work done, etc. increases to the point that if a professional is providing service to only one client, the professional has, in effect, become an employee even though some of the trappings of the professional/client relationship may still exist.

This is not to say that professionals cannot or should not enter into this type of service exchange system. The point to be recognised is that

this model is a long step away from the "ideal" professional/client model.

- The professional's autonomy declines and control moves into the hands of a single client.

- Standards of professional service will be influenced as much by the client as by the professional's association.

- The professional's expertise will narrow into the requirements of the single client and the single client's situation rather than expanding to meet the needs of a variety of situations which a professional with a variety of clients will encounter. This will have a tendency to cause a diminution in the number of times when reasoned judgements are required.

- Not providing service as required by the single client is to risk losing the single client.

- Being dismissed as an employee is not significantly different from losing one's single client.

Nevertheless, the professional with a single client is still paid by the client and the professional provides services directly to the client. This connection is lost when the professional becomes an actual employee.

Two factors now control the quality of service in the professional's work life: the professional association and the client.

B. The Employee/Employer Model

Type 1 — The Visible Customer

The professional offering services directly to clients in the professional/client mode, is both the employee and the employer.

Separating these two functions into two distinct segments and placing these segments into different controlling hands increases the difficulty the professional faces in trying to meet fully all the criteria set out as

being the characteristics of an ideal professional. The criteria affected most significantly are autonomy, commitment, identification, and ethics. This is because the professional now answers directly and daily to the employer and only indirectly and infrequently to the professional association and the client who is not the customer of the employer.

Many firms hire employees to provide services to the customers of the employer: banks, stores, consulting firms, temporary manpower firms are examples. It is important to note that the person or persons to whom the employee now provides services are not the clients of the professional. They are the customers of the employer. The customers pay the employer for the services (of the employees), and the employers pay the employees for providing services to their customers.

It is inevitable then, that the employer will desire to control such things as to whom, when, under what conditions employees provide services. The employer will wish to judge the performance, competence and ethics of his/her employees. Employers will not generally agree to have these duties carried out by the professional association although a shared role is not unusual.

One of the best methods of increasing human efficiency is specialisation of tasks. Employers have strong tendencies to reduce large complicated jobs to small or at least smaller segments. One person will then be assigned to do each segment on a repetitive basis rather than assigning one person to carry out all the segments on a project basis. As this happens, the need for a command of an extensive range of knowledge and the need for reasoned judgements declines. Replacing one employee with another is also made easier. Add to this the loss of autonomy (control of when to work, which problems to work on, working conditions, pay, etc.) as well as the intrusion of the employer into the field of standards, ethics, competence (the domain of the professional association in the "ideal" model), and it is not difficult to see the increasing problems the professional employee will have in retaining a "highly professional rating". Career development and progress depends on the employer and professional standards and attitudes may hinder career progress if the employer is not fully professional.

These problems increase if the services of the employee are used to make a product for the employer which is then sold to customers. The customer is now invisible to the employee.

Type 2 — The Invisible Customer

It is now the employer, acting to meet the needs of both customers and shareholders, who dictates standards, ethics, working conditions, pay scales and career progress for his/her employees.

Professionals providing their services in this type of system are almost indistinguishable from other employees unless the employer adopts a set of employment practices which allows the professional to retain his/her professional characteristics and unless the professional stands up strongly for his/her own professionality.

Obviously there are strong pressures for the professional employee to abandon some of the concepts of professionalism particularly those professional concepts which will or may negatively affect career progress, and to turn instead toward an allegiance to those concepts which will improve his/her chances of moving up the career ladder. This means a tendency to give primary loyalty to the company rather than primary loyalty to "the profession". That is no problem unless the employer wishes to shave standards too thin, take unjustifiable chances with public safety, ignore environmental "diseconomics" generated by the operation of the enterprise, etc. One author puts the dilemma this way :

> "In the case of the employed professional many of the traditional amenities of professionalism are lacking. For example, employers are perfectly willing to substitute their own judgement as to who is qualified to perform certain functions, replacing the concept of professional control based upon individual expertise. Institutions feel perfectly competent to judge what they think are adequate standards of performance. They say to their employed professionals, 'Not you, but I will decide adequate standards of performance, and I will tell you how your work is to be organised and what you should do on a day by day basis, and how much you will be paid for it.' This problem is only partially alleviated by selecting supervisors from among the professional staff. Supervisors, even if qualified professionally, are typically chosen by the employer and normally feel a closer

> identification with management than with the employed professionals. In summary, employers are likely to insist on controlling compensation and salary levels, the schedule of work and assignment of duties. Employers may even organise the performance of the entire range of professional tasks so thoroughly as to 'deprofessionalise' the occupation."

Organisations need not "deprofessionalize" their professionals as a place for professionals can be provided in both large and small organisations. What happens depends on the strength of the professional(s) in the organisation and the attitudes of the organisation's leadership.

It is usual that unions will exist in such organisations. If the professional becomes part of a union, by choice or by force, he/she now has three sets of expectations to meet: those of the employer, those of the union, and those of the professional association. The professional's responsibility to the public may seem rather remote in such a situation.

REQUIRED READING

- OIQ's "Guidelines for Engineering Documents", available from OIQ's web site http://www.oiq.qc.ca/ (select "Publications" and look for it in "Guidelines and framework documents")

- APEGGA's "Guideline for Contract Employees and Independent Contractors" V1.0 available from APEGGA's web site http://www.apegga.org/pdf/Guidelines/17.pdf

SUGGESTED READING

- OIQ's "Guidelines to professional practice", available from OIQ's web site http://www.oiq.qc.ca/ (select "Publications" and look for it in "Guidelines and framework documents")

- *An Act to establish a legal framework for information technology* (R.S.Q., chapter C-1.1) http://www.canlii.org/qc/laws/sta/c-1.1/20040802/whole.html

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