

# Technology Management Consulting

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*Some of the secrets in the art of technology management consulting*

It has been said that the ideal technology management consultant ("TMC") possesses a combination of the following attributes:

- Independence of mind
- A broad technical education and background
- Legal training
- Market research and technical research experience
- A knowledge of patents, trademarks and copyrights
- An understanding of what constitutes valuable trade secrets and know-how, combined with an ability to "package" such information effectively
- Knowledge of financial factors value technologies and the companies that own them
- An understanding of the different forms of technology transfer agreements
- The ability to get along with people
- Diplomacy
- Negotiating experience and enjoyment of the process
- Public speaking ability
- Foreign language abilities
- An appreciation of different cultures
- A broad-based scholarship and the habit of continuous reading
- Physical stamina, resistance to get "leg", and the ability to hold one's liquor
- An appreciation of the importance of discretion, including the necessity of keeping one's mouth shut at certain times

This list is not exhaustive. It should be readily apparent, however, that no one possesses all of the foregoing attributes to a high degree. This does not detract from

the profession of the listing.

As the lack of a formal scientific and engineering education could be a drawback, a TMC should have at least a roster of first-rate experts in the many different fields of technology in which he is active. If an assignment comes along in yet another technical specialty, his contacts should be such that an appropriate expert can be identified. A task-force approach, whereby a team of professionals with complementary skills surround all aspects of a technology management or licensing problem, is generally a desired approach.

A world-class understanding of technology is usually not necessary for a TMC, to provide a valuable contribution to the licensing, sale or other form of commercialization thereof. Assuming such technical expertise is available to implement such transactions, a TMC need usually be able to articulate the potential advantages (and disadvantages) of the envisaged transaction, frequently to someone who also does not have a strong technical background. The decision-makers in many major corporations have achieved their status after rising through the financial, marketing and even legal ranks of their companies. Even if their original education had been in science or engineering, these skills are rarely maintained at the state of the art. The language they speak is the "bottom line" of short- and long-term profitability and growth. Technical experts constitute only one source of their advice whether to proceed.

#### • Technical Aspects •

Financial success, to help appreciate the market value of technology as well as the amount of

funding that will be required to bring it to a viable commercial stage, is another valuable tool in a TMC. This need has become increasingly apparent in recent years with the growing importance of venture capitalists and the proliferation of start-ups based on some invention or technological achievement. The TMC should therefore consider establishing a relationship with specialized accountants and financiers to fill in any such gaps in his own arsenal.

Another area in which to supplement a TMC's strengths relates to the need to have created and knowledgeable local contacts in the important markets of the world. Extensive foreign travel, study and acquaintanceships with professionals in different countries are all valuable to a TMC. It is sometimes usually important to have as a collaborator a prominent citizen of the foreign country in which it is desired to close a license or otherwise carry on business. Such a person not only thoroughly understands the local language, laws and customs, but can also lend credibility to the client's position. Such professionals may often be contacted through attendance at international conferences convened by the Licensing Executives Society.

Further comments about some of the listed attributes are, in order:

Independence of mind constitutes one of the major contributions that an outside consultant, whether a TMC or a person specializing in another field, has to offer a client. This is especially true if the TMC has a multiplicity of clients and is therefore unaffiliated to either bank

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advice to a particular client without fear of being "scapegoated."

A corollary of the same point is that a TMC should avoid becoming entangled in company politics or infighting. When commencing a new assignment, the limits of authority should be clearly delineated, with the TMC reporting directly to the appropriate executive. In addition, the TMC need not be a prima donna who goes into a funk if his advice is not completely accepted by the client. Nevertheless, if the TMC's suggestions are being systematically ignored, there must be some flaw in the "chemistry" between the parties; in those circumstances the TMC should probably resign.

Legal training can be helpful but must be used sensitively. A TMC should never try to usurp the role of the client's traditional lawyer. Rather, his specialized skills in drafting a variety of agreements, or knowledge of some relevant aspect of the law of the U.S. or a foreign country, are made available to the client, including its lawyers, to the extent that this may be deemed useful to the task at hand. This approach usually promotes a healthy relationship with the client's regular counsel.

A TMC who is also an attorney is also aware of the existence of various bodies of law that could impact transactions he is trying to structure for the client. These include:

- U.S. regulations governing the export of strategically sensitive technology
- The evolving rules of competition of the European Communities
- Regulations of the Food & Drug Administration, and under the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA)
- Treaties for the avoidance of double taxation and for the enforcement of international arbitration awards.

A general acquaintance with all of these areas allows the TMC to be aware when they should be considered. He should also maintain friendly relations with top authorities in all these areas and be prepared to recommend to a client that their input be requested, when needed.

Finally, legal training is much more than the accumulation of substantive information about the law. It encompasses a form of mind that delineates and focuses upon the relevant issue at whatever problem may be considered. It helps everyone keep his eye on the ball, and thus promotes positive results.

Market research and technical expertise are very important functions to be performed under the responsibility of a TMC. A good portion of the technical research will already have been performed by an inventor, or will have been a part of the patenting process. In the business world, however, a certain amount of "post-patent vision" is important. For instance, if one is dealing with a new compound created by a chemical reaction, it is useful to explore whether the same result, at lower cost, might be obtained by biological engineering. If a TMC can bring a combination of objectivity and sophistication to assessing the value of technology for licensing purposes, a valuable service is being rendered.

#### —Market Research—

Market research is equally important. When "licensing.com" it is important to know the relative strengths and weaknesses of all logical target companies, as well as the probability that any be expected to be generated in the relevant market. This intelligence should be acquired from many sources and then correlated. Published statistics from government and private sources are useful. These can be tested and verified by a TMC, who might arrange to contact certain parties directly. Often this will be done on a basis whereby a TMC, because of an acquired reputation for discretion, need not reveal the identity of the principal. Such an open discussion can be very helpful in assessing the potential of a market.

A knowledge of patents, trademarks and copyrights is another important attribute of a TMC. This does not mean that the TMC be necessarily qualified to draft and prosecute patent applications; the writer is not so qualified. But an appreciation of

the strength and scope of a given patent portfolio—perhaps with the assistance of a professional patent agent—as well as an understanding of the workings of the Paris Convention, the PCT and the European Patent Office, can enable an experienced TMC to help formulate strategy and also give a better understanding of the potential profitability of the contemplated transactions.

The skilful use of trademarks and appropriate copyright protection of software are two other elements that can greatly enhance the value of a deal. The knowledge here to employ these tools is relatively easy to master and has proven invaluable to the writer.

The ability to "patent" know-how and trade secrets is another skill considered indispensable to a TMC. Frequently, companies do not realize that various procedures and methods they practice, and which they take for granted, may actually be novel and valuable to potential licensees. This can obviously increase the value well beyond that of a patent alone. Indeed, the know-how is frequently even more valuable than patents and/or trademarks.

Once a license agreement has been signed, it is important to transfer the licensed technology efficiently and expeditiously. This could entail the preparation of special manuals, designed to protect confidentiality by being organized so that various individuals in the recipient company will only have access to those portions which they have a need to know. An experienced TMC can best guide to the preparation of such documentation.

A knowledge of financial facts has become increasingly important in licensing as such deals, themselves, have become more sophisticated with the use of spreadsheets and the like. Licensing memoranda, the relatively straightforward and simple-selling documents employed in the past to present technology to potential licensees, have in recent years tended to resemble business plans more and more. This is considered to be a positive development because it sheds more light

upon the discussion whether to proceed with licensees. The point is that if a TMC does not have an MBA or similar financial training, it behooves him to place this type of skill at the disposal of the client.

An understanding of the different forms of technology transfer agreements is considered indispensable to the general skills of a TMC. These forms range, in ascending order of commitment, as follows:

- Direct sales
- Sales reps or agents working on commission
- Distributors who buy and sell for their own account, and may also furnish servicing of the products concerned
- Assembly or repackaging from bulk
- Straight, or "plain vanilla" licenses
- Joint ventures, whether minority, majority, or 50-50
- Wholly-owned subsidiaries

These forms can be evolutionary in nature, in that the parties may graduate to more deeply committed relationships. By the same token, it may be appropriate to change to a simpler form of relationship, for political or economic reasons. Thus, in Latin America, where there were some threats of nationalization and other forms of regulation of foreign-owned businesses, many U.S. multinational corporations converted their local subsidiaries into minority joint ventures or straight licenses.

### ■ Major Responsibility ■

The skill with which technology transfer deals are structured should be a major responsibility of a TMC. Often, a single relationship can incorporate several different forms, e.g. a license purchase contains key components for the licensed products from the licensee, manufacturer the rest of certain state-of-the-art models of such products, and sometimes other models from parts and subassemblies purchased from the licensee.

Furthermore, because of varying conditions in different national markets, one could have a wholly-owned subsidiary in the United Kingdom, a distributor in France who purchases products both from

the U.S. parent and the U.S. sub, a licensee in Sweden with the right to export throughout Scandinavia, a joint venture in Japan, and a sales representative in South Africa.

The ability to go along with people would seem to be an obviously necessary attribute. This does not necessarily mean that one need be a glad hander or powder to possible gross behavior by clients. But many brilliant and capable consultants have come a cropper because of their inability to relate to their clients. Arrogance, one form of which is the Not-Invented-Here Syndrome, has no legitimate place in licensing, in this writer's opinion, since a client's achievement in having developed new technology or organization is seeking to diversity merit respect.

Intimacy implies a readiness to approach a potential party to a license, even if the target was not previously known. It requires a thorough knowledge of the subject matter of the initiative, a positive belief in the technology concerned and attention to the collection of the presentation, both with regard to the person and the documentation involved. In addition to his personal interventions, a TMC should organize and coordinate the presentation by the client. Anyone who has suffered the vicissitudes of Murphy's Law, i.e. "anything that can possibly go wrong, will," will readily appreciate why careful preparation, indeed rehearsal, are indispensable. A poor presentation can at best delay and at worst permanently destroy the possibility of closing a license with the person who possessed such details. An experienced TMC can maximize the potential and minimize the risks of licensing presentations.

Before a TMC will have the opportunity to act on behalf of a client, he must first sell his services to a potential client. At each time, the TMC should indicate possession of the requisite range of skills and also that he will "fit" with the client's team. Two particular principles are relevant to such dialogue. First, "sell greater sticks,"<sup>1</sup> also known as *Eden* in the context of a difficult assignment (if he reason the client is considering to hire outside help in

the first place) can create suspicion in a potential client's mind — and rightly so.

Highlighting experience and enjoyment of the process is another of those basic attributes that a TMC should not have to delegate to a specialist.<sup>2</sup> Indeed, the TMC should play a key role in helping the client define his objectives from such negotiation, delineating the range of terms and conditions that will be acceptable. The TMC should also aid in establishing the respective roles of the various members of the negotiating team, and should be prepared to play an active part at the negotiating table if requested by the client. The wealth of experience a TMC should eventually acquire through participation in many types of negotiations, with various nationalities and in different industries, should enable a TMC to be particularly valuable to a client at the crucial negotiating stage of the technology transfer process.

Public speaking ability is an example of a personal strength that a TMC may possess that can be turned to the advantage of the client. It can also benefit the career of the TMC. Other special attributes that could be so utilized would be excellent writing skills (which would enable a TMC to pen articles for the media promoting the client's technology, or else participate in the preparation of specialized literature) or exceptional organizational skills (which a TMC might employ in developing a symposium that could serve as a showcase for the client's technology).

As even more diversified use of a TMC's public speaking experience can be during formal technology presentations to potential licensees. If so inclined and qualified, the TMC can carefully keep such discussions on the pertinent issues by acting as a moderator of the client's side of the discussions.

If a TMC possesses foreign language ability, this can prove to be a valuable

<sup>1</sup> For a further discussion of the writer's thoughts on this subject, see Chapter 8, *Joint Ventures and Licensing Agreements in Technology Management* by Robert Goldschmidt, CMAA (Bentley Company, Ltd., 1987) with annual supplements.

understanding between potential partners in technology transfer, assessing the TMC's language skills relative to that of a foreign party. Such a contribution to a possible bridge of communication could even be made in the course of discussions between representatives of U.S. and United Kingdom companies, if only to avoid possible extreme misunderstandings, or to promote a feeling of mutual concern. It is obviously indispensable in any event that dialogue between parties contemplating long-term agreements be quickly and correctly understood. TMCs should therefore be prepared to identify qualified interpreters and translators to participate in technical and general discussions, as needed. This is particularly important when dealing with senior Japanese executives, many of whom profess to have greater English language skills than is, in fact, the case. Misunderstandings create delays, at best, but could also disrupt and even destroy negotiations unless promptly corrected.

A corollary to the foregoing is an appreciation of different cultures. Unfortunately, many American executives are ignorant or naive about the impact of cultural differences, many of which can be traced to historical events. If a TMC can help bridge this gap, painful errors, sometimes of a deal-breaking dimension, can be avoided.

#### ■ Familiarity ■

Indeed, an American team of negotiators that displays familiarity with the geography, history and culture of their foreign counterparts often enjoys an important advantage over more "primitive" counterparts of their counterparts. In visits and other forms of technology transfer are usually long-term relationships. If the personal understandings and mutual appreciation among the participants is high, the chances of long-term success are enhanced.

Some visitors, especially those who regard themselves as "clients," may be skeptical about the importance to TMCs of a first-hand relationship and the value of continuous visiting. But it is the insights that

are acquired from these sources that provide an extra dimension to a client that constitutes partial justification for the expense of multiple consultants. For instance, a familiarity with the writing of M. Edwards Deming during the 1960s and 1980s could have enabled many U.S. manufacturing industries to at least mitigate costly loss of their respective market shares to Japanese competitors. Here was an American government official who developed a system of statistical quality control that, if rigorously applied, could result in lower costs, greater production efficiency, and ultimately outstanding product quality.

Japanese industry early appreciated and eventually wholeheartedly subscribed to Deming's theories. Indeed, he was awarded by Emperor Hirohito the highest award that the Japanese government can bestow upon a foreigner. Yet, Deming was virtually "a prophet without an audience" in his native United States.<sup>1</sup> There was an opportunity for an originator of TMC to make a powerful impact on the fortunes of its clients, by identifying and converting senior management to many of Deming's theories; they have now, helter-skelter, achieved respectability in the U.S. and are partially responsible for some recent, healthy results. Other opportunities for TMCs to earn peripheral visits and provide the quality of input to their clients exist today.

The characteristics of physical science, resistance to jet lag and the ability to hold one's liquor may seem pretty obvious, but there are certain rules and tricks of the trade that can enhance these important attributes. And they are truly important, because many significant aspects of learning business are assimilated away from the conference room and the negotiating table. Finally, physical stamina is a by-product of good health and physical condition; this involves a rational diet, regular exer-

cise and an understanding how to pace oneself. For instance, one frequently encounters frustrating delays beyond one's control when traveling domestically and internationally. Rather than get agitated and expend unnecessary energy, one should learn to relax and wait. One should also cultivate the ability to sleep on airplanes, perhaps using an eye shield. It is also usually a poor idea to engage in a serious business meeting, and especially a negotiation, within 24 hours of arrival from an overseas flight.

Further, if it is anticipated that the consumption of alcohol can be expected during a upcoming encounter with the opposing party, one might drink more milk or mineral oil before, and then consume the minimum amount of drink consistent with the understood level of local good manners. To win travel time can be put to productive use, and a clear head is indispensable at all times, for the TMC and all members of the client's team.

The significance of an appreciation of the importance of dietetics, including the necessity of eating one's meat (not at certain times in automatic business, generally, and definitely applies to TMCs). Indeed, a TMC should readily agree to sign any reasonable confidentiality agreement that a client may request, because the greater extent to which a TMC understands all technical and commercial aspects of a client's business, the more effectively the TMC may act on the client's behalf. On the other hand, a reputation of a loose tongue can be "the kiss of death" in that business.

#### ► End Product ►

Having listed and associated the relevant attributes desirable for technology management consulting, how is this all put together in a professional activity?

Learning On This results identifying qualified business, joint venture partners, distributors and sales representatives, as the situation may warrant, for properties of technology. These arrangements can be worldwide or localized to some particular area. The arrangement can cover a full range of services, such

<sup>1</sup> For a lively discussion of this theme see the foreword by David H. McClelland (Williamstown, Massachusetts) in "The TMC's Value Contribution to Client's Business Development," *Journal of Technology Management*, Vol. 1, No. 1, and particularly Edward the changing tensions between TMC activities and the TMC of the Nineties. For more information, see the U.S. and Japan, Ford and Nissan.

in market research including identifying and rating all logical potential licensees, documentation preparation, pricing strategy, negotiating and drafting of agreements.<sup>1</sup> It could also be limited to one or more of these aspects. In all cases, it is important to work in close coordination with the client's regular employees assigned to this program. In some instances, however, the TMC can play a valuable role for the client by not revealing its identity to third parties during early stages of contact with them.

**Licensing.**<sup>2</sup> This is not necessarily the other side of the coin from Licensing Out, and requires many different considerations. Perhaps the most difficult and crucial is to establish a suitable "shopping list" for the client, based on an analysis of its strengths, weaknesses and the core business. Help from the TMC in organizing a client's organization and procedures for evaluating technology submissions from third parties is often needed. Other aspects of these assignments are competitive and personal technology searches, as well as work on patent analysis, negotiations and drafting of agreements.

Often, clients consider themselves sufficiently equipped in-house to perform licensing in and licensing out, but are interested to have their technology or that of third parties appraised. These could involve full-fledged technology audits of their portfolio.<sup>3</sup> In other cases, it is desired to have a particular item of technology appraised. In recent years, one firm has appraised for its purposes a highly-developed method of building factories at the water's edge, with issued patents and considerable know-how, which the developer had decided to donate to the United Nations. Other assignments of this sort included the appraisal for water use purposes of a copyrighted game which was generating substantial royalties from a license that the inventor's descendant had granted to a major toy company, as well as the

valuation of a relatively rare trademark for the men's fashion industry owned by a famous designer, which was desired to be assigned to a different corporate entity.

The ability and experience to set royalty rates for commercial licensing negotiations, and otherwise to evaluate terms of technology, have also found opportunities in the field of litigation. The measure of damages in patent infringement litigation adequate to compensate the patentee is "not less than a reasonable royalty."<sup>4</sup> The TMC may be regularly called upon to testify in such cases, appearing on behalf of both patentees and infringers in these matters. Expertise in many other aspects of technology management may be employed, both as a witness and as an advisor, in numerous other lawsuits and other disputes involving intellectual property rights.

A TMC can also be utilized in a direct corporate capacity, such as a part-time advisor and member of the Board of Directors of start-up, high-tech companies. At this stage in the life of these companies, the input of a TMC is particularly crucial to corporate health and growth.

#### ♦ Practice ♦

Two questions arise. How does one get clients and how should a TMC be paid? This is a very personal matter, and there are obviously many possible answers. With regard to the first, several years of experience in the field working for others gives the TMC a personal network of contacts in the U.S. and abroad, and a modest reputation. He should also become a member of IES, an exposure provided by the Society can be most

helpful. For example, a TMC may offer articles to be featured in discuss philosophical and practical approaches to licensing. A TMC may also volunteer to speak or visit a workshop or local, regional or national meetings, assuming he has some insights or practical experience worth sharing.

As regards payment, I believe TMCs should be fairly compensated for their professional time, and also be eligible for a bonus based on success. The latter can be a reasonable percentage of the royalties to the client generated from closed licenses, a percentage of sales realized by the client from technology licensed in, a pre-approved lump sum, shares of the client's stock, or stock options at favorable terms.

Almost exceptional circumstances, a TMC accepts an unreasonable risk if he accepts a licensing out assignment on speculation, where by the TMC will receive as his only compensation a percentage of the royalties generated. Indeed, TMCs can experience personal financial hardship through acceptance of assignments on these terms.

Rather, TMCs should wherever possible be placed on a monthly retainer for reasonable periods for broadly based assignments, and be paid at their standard hourly rates for more narrowly focused tasks. Work relating to litigation should also be compensated at standard hourly rates. In addition, out-of-pocket expenses for teleconversations, document duplication and pre-approved travel should be reimbursed. Cash flow should always be carefully watched and bills should be sent monthly with the expectation of prompt payment.

#### Epilogue

No two TMCs approach the challenges of this profession in an identical manner. Rather, their work product tends to follow the profile of skills — included in the listing at the beginning of this article — that they possess. Whenever opportunity one gives to the specialty, it holds the promise of a stimulating career to those fortunate enough to be among its practitioners. There is plenty of room for others who may be interested to follow this calling.

<sup>1</sup> See Chapter 3, "The Art of Licensing Out."

<sup>2</sup> See Chapter 4, "Licensing In — A Key to Continued Corporate Growth," 2nd.

<sup>3</sup> See Chapter 5, "Technology Auditing: Piling a Log on the Balance Sheet," 2nd.

<sup>4</sup> "The TMC" is a fairly common phrase throughout the document as employed toward the following paragraphs. It is intended to compare one to one assignments, but does not mean that it is impossible to make for the use of the trademark developer, together with some and then as final by the owner. Please the developer are not bound by a law, the cost and more time. It could vary the cost may increase the damages to three times the amount based on trademark. The cost may increase upon testimony as to and to the determination of damages or value of the trademark. See *Grain Processing Co. v. Borden, Inc.*, 192 F.2d 100 (Ct. Cl. 1951). See also Chapter 26, "The Licensing Question and Intellectual Property Rights," 2nd.