

Lessons from an Information Technology Leadership Laboratory

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Abstract

Over the past eleven years, the Information Technology Leadership Program has been conducted at Santa Clara University in Silicon Valley. During those years, we have developed perhaps the most extensive observations ever made of the senior leadership capabilities of the IT community. In this paper, we first report on the genesis of the program and comment on its unique architecture and design. Following this, we relate our observations and make recommendations that we believe will enhance the future success of the profession.

Introduction

There have been dramatic changes over the 50+ year history of information technology in the enterprise. The responsibilities of the former head of data processing, relegated to automating manual operations, have morphed into those of the current Chief Information Officer (CIO). This person is still expected to automate operations and drive down costs, but is also expected to make significant contributions to accomplishing strategic objectives and creating competitive advantage. The CIO's role is much more critical to the success of the enterprise than her historical forebear, in part because of the pervasiveness of information technology in all aspects of the modern corporation.

Another dramatic shift in the basis of economic growth has also impacted the IT function. During the industrial economy, the source of wealth was the means of production, and over time, the manufacturing group within companies became known as the "operating group." With the shift to the information economy beginning in the 1950s, the new source of wealth has become information and knowledge.¹ Is it not possible, therefore, to argue that IT will become the new operating group within companies? If this were to happen, the CIO would, by default, be assigned the most prominent role among the other senior executives of the company. Is our cadre of senior IT executives ready, however, to step into this exalted role? The following are some indications that, at least for the time being, they are not.

- Very few CIOs make it to the CEO position. We know of only a handful that have, and many of those have become CEOs of high-tech companies.

- CIOs in most companies are not viewed as a peer by the other senior executives in the company. Studies, such as the CEO study we will discuss later, consistently highlight the senior leadership deficiencies of the IT executive.
- IT organizations, in general, are not viewed favorably in many companies.
- Effectively aligning IT with the business continues to be the number one issue in the IT community despite some 20 years of effort on this issue.
- Major new strategic initiatives are not led by the IT organization. Looking back, total quality management (TQM), business process re-engineering (BPR), knowledge management, and E-Business have been led by corporate groups outside of IT. And more recently, leadership for Web 2.0 initiatives appears to be coming outside of IT.

In order to stem this tide with the next generation of IT leaders, in 1998 we introduced the Information Technology Leadership Program (ITLP) at Santa Clara University. During these past eleven years, nearly 600 IT practitioners have attended this program. The majority of participants has been from the United States, but a significant number has attended from Europe and from countries such as Australia, South Africa, Turkey and Japan.

Most of the attendees have been IT Director-level people, who have aspirations of becoming a CIO or other senior executive. A small percentage (approximately 5%) has been CIOs who recognized that they needed these capabilities to be more effective in meeting the demands of their role.

The vast majority of attendees report they have chosen to attend ITLP, rather than being directed to attend by a superior. As a result, we get some of the best IT professionals --- individuals that are highly motivated and come to advance their careers.

During these past eleven years, we have had the unique opportunity to make an extensive assessment of the senior administrative capabilities of this large group of IT professionals. What have we learned from this effort, and will those efforts be enough to position senior IT managers to make a more meaningful contribution to their organizations? In this paper, we report on our findings, and based on them, make recommendations for the future executive development of IT professionals.

Genesis of ITLP

In 1997, several members of the Santa Clara University (SCU) community initiated an interview study of Chief Executive Officers (CEOs). This team included, Professor Barry Posner, a leading authority on leadership, Ron Danielson, the CIO at the university, and Pete DeLisi, a faculty member of the Executive Development Center at SCU and President of the strategy consulting firm, Organizational Synergies. The purpose of the study was to investigate how CEOs viewed the IT organization and to determine what

CIOs needed to do in order to be successful. The study results were subsequently published in a *Business Horizons* article entitled, "A CEO's-Eye View of the IT Function."²

The CEO study produced a number of interesting results, but the one that struck us most was their consensus about the skill sets needed to be successful in senior executive roles. When first asked about the capabilities that they needed to be a successful CEO, our interviewees listed the following:

- *General management* - understands the business, understands the markets for the company's products, organizational development abilities, and a broad background in various facets of those activities essential to the company's success.
- *Strategic sense* - a "big picture" view of the organization, the ability to synthesize, calculated risk-taking.
- *Interpersonal skills* - communication, education, salesmanship, recruiting/hiring/growing staff, leadership.

When the CEOs were later asked about skills needed by a successful CIO, we were surprised that the list was virtually *identical* to that needed to be an effective CEO. The only addition was technical knowledge, defined as an understanding of information technology at an architectural level and an awareness of developing technologies that might be valuable to the company. Other than this technical knowledge, unfortunately, the CEOs said their senior IT executive demonstrated few of these essential executive characteristics.

Further reflection and discussions after the study led us to investigate where CIOs and senior IT professionals might acquire the skills that CEOs said were vital to their success. Our search led us to a number of esteemed executive development programs at leading universities, such as Stanford and Harvard. While we felt these programs could certainly provide the requisite skills, we concluded that the IT environment was sufficiently different, and therefore, warranted special focus. Unlike other corporate functions that dated from the early days of the industrial economy, the IT function originated in the 1960s, and therefore, was still experiencing unique "growing pains" and identity issues. We theorized that if we put IT professionals together in a room they would not only learn from one another, but also, serve as a support group for one another. This has indeed turned out to be the case and continues to separate ITLP from other generic, executive development programs.

The Design of ITLP

Our analysis of existing executive development programs led us to a decision to develop the Information Technology Leadership Program. From the beginning, our vision was to make ITLP into a world-class example of not only educational excellence, but also, learning design. We would borrow, for example, the use of role playing from leading programs, such as IBM's Sales School, to develop the skills we wished to impart. Other

academic programs that we investigated imparted knowledge, but seemed deficient in the skill-building elements of executive leadership.

Our design called for ITLP being a three day program centered on the non-technical skills that CEOs had told us they wanted to see in their senior IT executive. Although the content of each of the areas has evolved over time, a consistent set of modules has formed the core subjects of ITLP:

- Leadership
- Being Strategic
- Executive Thinking
- Thinking Styles
- Leading Technological Change
- IT as a Consulting Organization
- Influence Skills
- Developing Successful Relationships
- Effective Communications

From the beginning, our expected coverage of the topics was modest. We knew that in a three day program it would be impossible to cover any of the above subjects in depth. However, we believed it would be possible to distill each of these modules down to two or three key points that represented the essence of the topic. For example, in a one hour module on “IT as a Consulting Organization,” we convey the following key points.

- IT professionals can learn a lot by studying what makes a good professional consultant, such as, the use of good questioning and an awareness of the current strategic issues relevant to technology applications. The latter would be developed from the focused reading of selected business journals.
- The work of IT has changed dramatically from the paradigm of the industrial economy. Now that we are in the information economy, we need a new model. (We then lead them to develop an appropriate model.)
- Delivering IT solutions is passé. The new emphasis is on delivering value. Value is having an impact on the strategic purpose of the business. (We share with them the questions they need to ask to get at the strategic purpose of the business.)

In addition to condensing each module into the two to three key points that we want them to take away, we place major emphasis on each student using the three-day program to complete a self-assessment of their skills and knowledge in the areas covered in ITLP. On the first day, we challenge them to assess, over the course of the program, the areas in which they feel they will need further development. As the penultimate activity of the program, they then are given the opportunity to develop a specific plan to further develop their skills in those areas and to apply them to specific actions in their work.

A unique aspect of ITLP is its systems design. Our experience is that many educational programs present a series of unconnected dots, rendering retention of the material almost impossible. The systems integrity of ITLP is attained through the mechanism of a three part case study/role play that is used not only to impart executive skills, as we discussed previously, but also to tie together the individual pieces of the curriculum. In the case study, students see how the content elements of the program relate to one another and how those elements must come together for the students to be successful both with the case and in their careers. As we discuss later in the paper, some of our most fascinating observations come directly out of this case study environment.

The faculty is another unique characteristic of ITLP. Due to the university affiliation, we have a pool of distinguished faculty that we can draw upon. In ITLP, we use Business School faculty to provide the most current research on critical business topics. For example, management professor and co-author, Dennis Moberg, leads the module on “Executive Thinking.” In this three hour session, Dennis shares with the students important research on how senior executives think. The purpose of this is twofold. One is to help the students understand what they need to do if they wish to be a senior executive. The other is to help them be more effective in relating to their own senior executives.

While the scholarly element is important, IT professionals also need to learn about the issues senior IT practitioners experience “in the trenches.” Accordingly, every course contains presentations from several guest CIOs or CEOs that provide this perspective. These individuals are carefully chosen to not only provide practical wisdom and a real world viewpoint to the students, but also, to serve as role models. The CIOs demonstrate the skills that CEOs said were critical to success in the role, and the CEOs bring to life the message about how critical these skills are. Question and answer sessions allow students to bring questions of direct relevance to their work environments before these guest speakers and the other students, and help them in the process figure out how best to apply their fledgling skills to their own situations.

The full-time instructors of ITLP are the other co-authors of this paper. Pete DeLisi and Ron Danielson were chosen because of their breadth of IT industry knowledge and their own modeling of the skills being taught. Pete has 43 years experience in the IT industry. Ron is an associate professor of Computer Engineering at SCU and has been the university’s senior IT executive for a total of 17 years.

What We Have Learned from the IT Leadership Program

A careful assessment of eleven years of experience with ITLP has led us to two general conclusions. First, the most important focus for developing IT professionals should be on helping them acquire senior executive-level skills. While we originally used the term “leadership” as a catchy way to describe the program, it has become apparent to us that leadership is a necessary, but not sufficient, condition for becoming a senior executive. In other words, one can be a good leader, but without other complementary skills, one may not become a successful senior executive. For example, a leader without the ability to

think strategically will likely not succeed in a role at the top of a corporation, but rather, will be limited to positions at the operational and functional levels of the corporation.

The second general observation is that there is a gap between the skills required of a senior executive and the skills that most IT professionals currently have. Readers might ask, “Why is that surprising? Isn’t that the need that ITLP addresses?” Here our response is, “Yes, but we were not prepared for the *magnitude* of that gap.” Obviously, if we are correct in this observation, it will bear heavily on the future of the profession. Will there, for example, continue to be very few CIOs that ever become CEOs? And will CIOs continue not to be seen as a peer among the other senior executives in their company? In the section that follows, we use our observations from ITLP to identify the most significant skill gaps that currently exist.

Significant Skill Gaps Observed in ITLP Participants

Based upon our focused and intense interactions with the nearly 600 participants in the IT Leadership Program, we’ve reached some conclusions about the most significant impediments those participants face in becoming successful senior executives. While we haven’t engaged in similar focused study of a broader population of IT professionals, our more casual interactions with such professionals over decades suggest these impediments exist in many of them.

1. IT managers also need to become leaders. Over many of the past eleven years, we have been privileged to have Barry Posner, a leading authority on leadership, present the leadership module in ITLP. Barry presents his extensive research on leadership and challenges the participants to consider such seminal questions as, “How does leadership differ from management?” and “Are leaders born, or are they made?”

The latter question is particularly relevant for our later discussion on senior IT development. Here we would merely cite the many studies that have concluded that while some individuals are born with more of a natural predisposition for leadership, we can in fact develop people to be leaders. In ITLP, we introduce students to the research on leadership and challenge them to consider if there is anything that makes IT leadership different from traditional leadership.³

In a recent *CIO Insight* article, Bill George, the former chairman and CEO of Medtronic and professor of management at the Harvard Business School, emphasized the important role that leadership plays among senior IT managers: “There are a lot of IT people who are really good implementers, really good executors --- but I’m asking them to be my leader.”⁴ Later, in the same article, he clarifies this comment by saying, “Well, I’d like to see the IT executive leading me, since I’m not an IT specialist.” Our suspicion is that Bill George’s opinion is common -- people don’t expect IT people to be good leaders

Sadly, this mirrors our experience with ITLP managers. First of all, our case study/role play gives us a unique opportunity to observe some of these qualities. Students are asked at the beginning of this three part exercise to volunteer for a primary leadership role, and

eventually, each participant is assigned an IT role as part of their study team. As the role play proceeds, we have noticed that many individuals do not actively participate, but rather, sit back and let others lead the discussions. It is clear that these individuals do not feel comfortable in a leadership role.

2. IT managers are seriously deficient in their knowledge of strategy. It is generally accepted that senior executives need to be able to think strategically. This was confirmed in our study of CEOs and is consistently supported by research on how senior executives think. Over the past two decades, CIOs have increasingly been expected to be strategic thinkers as well, not just about the IT function, but as contributors to the corporate direction.

In one module of the IT Leadership program, we ask participants to describe their company's strategy and their organization's IT strategy. Few are able to do so with any detail or precision. This suggests that their company (and/or IT organization) doesn't have or doesn't promulgate such strategies (unlikely), or the participants have not appreciated the importance of strategy in guiding both long and short-term actions.

Further discussions focus on the strategy vernacular and specific strategy tools that IT organizations can use to align with their company's business strategy. These discussions reveal that these IT managers do not understand, for example, the difference between a goal (the desired result) and a strategy (the means to achieve that result), and why that is important. As we continue to discuss IT's role as a value-added company resource, they begin to see that favorably impacting a corporate goal will produce greater value than impacting the means to that goal. In the latter case, performance is unequivocally suboptimal.⁵

For the majority of our attendees, we find that this is the first time they have been introduced to the above topics. In all fairness, where would they have learned about strategy, and for that matter, where would our current contingent of CIOs have learned about strategy? Business Schools teach strategy, but in the majority of cases, they teach the theory of strategy. Few faculty members have the experience of learning strategy from its practical application in a corporate environment.

We believe strongly that greater knowledge of strategy among senior IT executives could help many IT organizations more effectively contribute to accomplishing business strategic objectives, often referred to as "IT alignment" and a topic that consistently ranks at or near the top of lists of CIO priorities.⁶

In an unpublished study conducted in the latter half of 2007, we interviewed 15 CIOs from medium to large corporations, both public sector and private sector, across a range of industry categories. We discussed at length with each of them how they defined IT alignment, the state of corporate strategy in their corporations, and the processes whereby that strategy was developed and how IT attempted to support accomplishing strategic objectives.

These interviews clearly showed that, among these executives,

- There was no generally agreed-upon definition of IT alignment;
- Many felt corporate strategic direction was either missing or unclear;
- Most had no effective process to map IT actions to corporate strategic goals; and
- Many exhibited a lack of understanding of strategic concepts and processes, as did the ITLP participants.

This study supports the idea, first suggested by our observations of ITLP participants, that lack of understanding of strategic concepts by IT executives, and the resulting sub-optimal contribution of IT actions to accomplishing corporate strategic goals, significantly hinders many IT organizations in truly contributing value to the corporation.

(See the following for more details: <http://www.org-synergies.com/ITAlignmentPaperFinal.pdf>)

3. IT managers possess poor synthesis skills. In our CEO study, we were surprised to hear a number of CEOs use the word “synthesis” to describe a skill that they believed senior executives needed to have. This word is not one we hear commonly in business circles. Synthesis, according to Webster, is the “putting together of parts or elements so as to form a whole; opposed to analysis.” In the IT Leadership Program, our case study/role play provides the students a unique opportunity to practice this skill.

In this three part case study/role play, students are presented a typical business problem from a senior corporate executive. In their first action as part of an IT team, they are asked to figure out what to do with this request. Their second role play involves the team in a series of discovery questions with the senior executive, and in the final step of the case study, the team formally presents an IT proposal to address the perceived, executive’s, business problem.

One of the most striking observations from ITLP is that in the eleven years of doing this case study, only one team has successfully solved the case. The reader might conclude that the case is overly complex, or that we use “tricks” to throw the students off, but the reality is that they are taught everything they need to solve the case during the three day class.

The case study result among our ITLP participants has tremendous implications for the IT community. As we have indicated above, the failure to solve the case stems from two things --- not being able to discern the underlying business problem and poor questioning techniques. The only way that the case can be solved in the timeframe that we allot them is by asking probing, open-ended, strategic business questions, listening carefully to the responses, and then, piecing what they have heard into a pattern about the root issues. Not only have we witnessed teams repeatedly asking the wrong questions, we have also detected a tendency amongst IT professionals to rush prematurely to a problem determination before a careful assessment is done of the data provided.

Perhaps these nearly universal behaviors of ITLP participants are one of the major causes of failed IT projects that are often reported in the profession. Without a clear understanding of the underlying business need that internal customers are trying to address, IT projects are doomed to failure. In addition, if we tie this back to our discussion on senior executive skills, we see that knowledge of strategy is absolutely vital to success at the senior executive level. How can IT executives be successful if they neither know the right, strategic, business questions to ask, nor are able to sift from the answers to the questions they do ask the critical information that will help them solve their customer's real business needs? In the final analysis, failure on the case study reveals the lack of the ability to synthesize, a very important senior executive skill.

4. IT managers lack effective communication skills. In our CEO study, one participant mentioned that his CIO was the worst communicator of all his direct reports, and indeed, this was one of our general findings. In contrast, our experience with ITLP participants has led us to conclude that IT managers are not bad communicators. They speak well, and in general, exhibit an attitude of being helpful and supportive. Thus, our conclusion is that the common belief that IT people do not communicate effectively is due to the absence of good questioning and listening skills described above.

Additionally, we have noted among ITLP participants an absence of standard sales skills. Among these is the very powerful technique of closing. This is the skill of asking a question requiring a yes or no answer and then remaining silent until the answer is given. Without the answer we tell our students, you can never know where you stand. In the program, we instruct them that every meeting and every presentation should be "closed." Other communication techniques we teach include how to effectively handle objections and how to make an effective presentation.

In all fairness, we believe few IT professionals have ever been taught the communication techniques of questioning, closing, and handling objections. Without schooling along these lines, IT professionals will continue to be seen as poor communicators even though they possess the right attitude and ability to speak and write clearly.

5. IT managers lack effective influence skills. This is another area in which we believe IT managers and executives receive no training. In this category, we place sales, marketing and other generic influence skills.

Recently, one of our guest CEOs told a class that in order to be a successful IT executive or senior corporate executive, you need to be able to sell. To this, we would add that one also needs to be able to market yourself and the IT organization. Marketing is essentially being able to make others see the value in who you are, what you do, and what the rest of the organization does. Not surprisingly, without this, we see the poor perception that is held of many IT organizations.

An area of influence that we observe IT managers not taking advantage of is education. With very few exceptions, we have had no ITLP attendees that have used education effectively in providing leadership to their corporation. We challenge the students in the

following manner, “You need to be out in front of every major emerging technology educating your senior corporate team on what it is, and more importantly, what it means for the corporation.” Sadly, either the senior team learns about the emerging technology on their own, or someone else plays this educator role.

Should IT managers, with the many roles they are already called upon to play, also be criticized for not being an educator? We answer this by telling them that they do not need to be an educator; they just need to be seen in the leadership role of having provided the education. This can be accomplished, we tell them, by bringing in someone else to do the instruction, but being sure that they organize the training, communicate the benefits of the training and are highly visible when the training occurs.

6. IT managers know what characterizes strong relationships, but lack the finer skills that would make them effective at this. It goes without saying that the ability to form and sustain strong relationships is a vital skill of anyone in a work organization. However, this is probably more critical at the senior levels of IT. In the CIO Insight article that we referenced earlier, Bill George says, “Ask CIOs if they have solid relationships with business leaders, and they’ll likely say, “Yes.” Ask business leaders about their CIOs, and you’ll likely hear a different story. And this disconnect has only increased.”

In ITLP, we introduce the students to the research on relationship-building. At the beginning of this module, we have them do a short exercise to list the three strongest relationships that they currently enjoy. Since most would list all family members, we give them a ground rule that they can only list one family member. This helps with the next portion of the exercise in which we ask them to list the three to five reasons for these strong relationships. They then share their results with several other members of the class and are asked to reach consensus with their team on the top three to five reasons for strong relationships. Over the past eleven years, the groups have converged on basically the same three to five characteristics of strong relationships, with trust appearing prominently on this list. We then share with them the latest research on factors that either enable or inhibit these strong relationships.

What we have learned over the past eleven years is that while the students can readily identify what leads to strong relationships, they have little practical knowledge about ways that they can enhance relationships --- especially in a corporate setting. We tell them, for example, that trust is not always destroyed through major transgressions, such as lying or stealing, but can be negatively affected by the simple acts of not returning a client phone call, or being on time for an appointment. The implication, we tell them, is that if the client can’t trust you in small matters, how will she be able to trust you in larger matters? We also share with the students the power of listening and discuss with them how they can use their thinking style, which they have assessed in the class, to further their relationships.

Our most significant finding from the module on relationship-building is that while client relationships are extremely important to IT professionals, the profession lacks an

effective model for building and maintaining these relationships. We believe that a very important component of this model is attitude. In the class, we instruct them that, “We can teach you the right knowledge and skills to be effective with your clients, but what we can’t teach you is the right attitude.” We tell them, “Your attitude is showing. Your clients will see this more than the words you speak to them.”

Our attempts to find a suitable client-centered model have led us to the esteemed psychotherapist, Carl Rogers and to other professions.⁷ We have concluded that perhaps the teacher is the best exemplar for the IT professional, for like the IT person, she is constantly challenged to allay the fears and lack of confidence of people that are presented ever new material and ways of doing things, even as they master previous work.

7. Senior IT managers have the potential to think like a senior executive, but are not perceived by others to have this capability. For years, IT organizations have struggled to achieve the respect that many IT executives believe they so rightfully deserve. Many reasons have been put forth for the poor reputation and lack of respect for the IT function --- failure to deliver, poor marketing and poor customer relation skills are just some that we have heard mentioned. We believe another prominent reason is that IT executives are seen as narrow, technical, analytical individuals. Research that we have conducted reveals that this is a misperception. *Indeed, our research shows that IT executives have the very thinking styles that CEOs have told us they would like to see in a senior executive, and specifically, in their IT executive.*

Over the past eleven years, we have administered an assessment instrument, the InQ, to students of ITLP. This instrument analyzes five different thinking styles --- synthesist, idealist, pragmatist, analyst and realist. When we began the ITLP workshops, and began using the InQ, we believed that IT professionals were mostly analytical people. This perception was shared by the CEOs we had interviewed and, in fact, has been that of virtually all the participants in the ITLP. However, as we began analyzing the thinking styles preferred by the individuals to whom we administered the InQ (over 500 IT managers and professionals) we were surprised. The results indicate that IT professionals are predominantly idealistic and pragmatic - not analytical. In fact, more IT professionals use the idealistic and pragmatic thinking styles than would be expected in a random sample of the general population, and fewer use the analytical style. These are really surprising and counter-intuitive results. It suggests, however, that the IT profession has some serious work to do to change the perception of who they are and what they have the potential of becoming. (See <http://www.org-synergies.com/ThinkingStyles.htm> for complete results.)

Recommendations

While we believe that ITLP fills a void in IT executive development, much more needs to be done. We mentioned earlier that ITLP provides the participants an excellent opportunity to self-assess and to develop a personal action plan. For some, this means attending more in-depth courses in the areas that they have identified needing further work.

Of great concern to us is the majority of IT professionals that do not acquire the skills developed in ITLP. As we have indicated, if skills are significantly missing in the talented population that attends ITLP, what of the rest? How can they be reached and be provided with the skills that we have identified?

Following are a number of recommendations that we have identified and that we believe offer significant potential for further executive development among IT professionals.

1. Role Modeling

Not all professional development occurs in the classroom. In fact, we know from learning research that most of what is heard in the classroom is soon forgotten. Development also occurs through coaching and through role modeling. Coaching, however, leaves a lot to be desired. The employee often feels threatened in the process and few managers have the time and talent to do it well. Far more powerful is the role modeling effect in which we observe someone performing a particular action and learn from that exposure.

This of course raises the question of who might serve as effective role models in the IT organization. Our CEO study would suggest that CIOs themselves rarely have the requisite skills of a true senior executive, and therefore, would not be suitable role models for individuals wishing to advance to that level.

We believe it is time for most CIOs to step up and admit that they do not have the skills to be an authentic senior executive. Not only is this limiting their own career aspirations, it is severely limiting the careers of those below them and the effectiveness of the whole IT organization.

If CIOs were to take the step toward educating themselves, where would they go to acquire these skills? Perhaps, a customized skill-building program needs to be developed for CIOs. We will discuss this later. As we have argued, this would be distinctly different from the knowledge-based development programs that currently exist for other executives.

2. In-House Management Development Programs

A number of corporations, such as IBM and G.E., have excellent in-house executive development programs. People on a fast track are usually asked to attend these programs. IT professionals, who have the opportunity to attend one of these type programs, should do so. While the focus would not be on IT issues, the opportunity to learn from other functions and the opportunity to move quickly up the corporate ladder, outweigh the IT concentration.

3. Further Education on Functional Specialties

In our own efforts to understand how we might continue to serve the needs of the IT community, we have received some very interesting ideas. An idea that has been put forth to us by several ITLP attendees, and by several CIOs, is that we develop a program in which senior IT managers would receive education on the other mainline corporate functions.

As we thought about this idea, it occurred to us that this would be an excellent way to begin to develop a general management capability amongst senior IT professionals. In addition, if we followed the ITLP model, we might structure the education in such a way that the students would not only understand the business needs of each function, but also, have to propose IT solutions that would add value to these functions.

4. Support of Other IT Groups

It is time for a major effort to be launched to seriously advance the professional skills of senior IT managers. Perhaps, a joint effort with academia is called for to develop a senior IT developmental curriculum. In most cases, this would differ from the individual course offerings that currently exist. This curriculum might be a collaborative effort with organizations such as SIM, the CIO Executive Council and the Center for CIO Leadership, and would take the best that each has to offer. Academia would contribute what it does well --- namely, curriculum development, course design and teaching. *Santa Clara University would offer to lead this effort.*

5. A Senior Executive Development Curriculum

A number of professions offer us perhaps the best clue about a curriculum for senior IT professionals. One of our authors has personal experience with the IBM sales curriculum model and has designed and developed a sales curriculum model for another large, high-tech corporation.

The sales curriculum model consists of a series of events that lead an individual to acquire the requisite knowledge, skills and attitudes to be successful in the sales ranks. A competency model is first developed, and then, the elements of the curriculum are designed from this model.

The activities include classroom attendance, interspersed with field activities that are designed to reinforce the classroom instruction. Coaching and role modeling also occur during these periods in the field and continue throughout the whole curriculum. Coaching is usually provided by the individual's immediate manager, but role models are carefully chosen from the ranks of the best sales people.

At the end of the curriculum (in the case of IBM, a 12 month process), a very intensive "final assembly and test" activity occurs. Over a period of two weeks, the individual pieces of the curriculum are brought together in a classroom setting and the participants must now demonstrate that they are proficient in the knowledge, skills and attitudes described in the competency model.

How might the sales model apply to a senior IT curriculum? We would see first that a competency model be developed. A number of IT competency models currently exist that we could learn from (see for example CIO Executive Council⁸ and the Center for CIO Leadership⁹ models). Our own CEO study and other research on executive development could further enhance these models. Secondly, appropriate classroom and field experiences could be part of the curriculum. As with the IBM model, an introductory class, such as ITLP, might provide an overview of all the skills in the competency model. This would be followed by individual learning modules that address the skills in more depth, and perhaps, a final course would tie all the pieces of the curriculum together. Field experiences could be designed to reinforce the classroom training. They might also include an episodic case study approach that looks at the collection of issues that senior executives need to deal with. Lastly, coaching and role modeling skills could be taught to the senior IT managers that would be providing oversight of the curriculum.

6. Personal Development Plans

We wonder if CIOs have a formal, personal development plan. And if they do, is the process working? This plan needs to be owned by the CIO. As the esteemed professor emeritus from the MIT Sloan School, Ed Schein, says:

"The primary responsibility of the career occupant is self-insight and the sharing of such insights with the relevant career manager in the employing organization....It is unrealistic to expect managers and organizations to understand employees well enough to make valid career decisions for them. Ultimately, people must learn to manage their own careers."¹⁰

If we were to develop a formal curriculum for senior IT leaders, as discussed above, this curriculum could become the center-piece of the development plan.

Conclusion

In this paper, we have related our observations from eleven years of conducting the Information Technology Leadership Program. In addition, we have made several recommendations for improving the executive development of IT executives. Much is at stake here. A number of facts point to the need to transform the IT executive ranks. Most often quoted is the high rate of CIO turnover. We question whether this statistic is in reality any worse than the turnover of other C-level executives. We believe that far more serious concerns exist and have enumerated these.

We are optimistic about the future possibilities for IT managers and executives. While we have taken a very strong position on their current skill deficiencies, we believe that these can be remedied with some of the recommendations we have made. What we believe has been missing, however, is the honest admission by the senior IT community that they do not currently possess the skills to be a true senior executive. Given this admission and the subsequent efforts to acquire the skills, we believe we can all look forward to a very bright future career for IT executives.

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8. The CIO Executive Council Competency Model contains the following capabilities: results orientation, market knowledge, team leadership, change leadership, collaboration and influence, people and organizational development, strategic orientation, commercial orientation and external customer focus.
9. The Center for CIO Leadership has identified the following areas as key to professional advancement: leadership, business strategy and process, innovation and growth, organization and talent management.
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