

SUMMARY OF FINDINGS
THE MANAGEMENT OF TOP TECHNICAL TALENT
SPONSORED BY THE CENTER FOR INNOVATION MANAGEMENT STUDIES
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EXECUTIVE SUMMARY¹

Scientists and engineers at the top levels of the technical ladder are a major resource and investment. Yet management must resolve issues of autonomy, resources and status in order to fully utilize this talent. These conclusions are based on interviews with some 64 individuals occupying top technical talent roles (TTT) and executive and management positions at five large companies in chemical production, resource exploration, systems manufacturing, and technology development/services. The TTT were typically in the top two technical levels of their company's technical ladder, had been with the company more than 20 years, and had records of "sustained value creation" for the company. Here are highlights of findings.

Promoting People to TTT

While there are lingering doubts about whether the TTT role is one of recognition for past accomplishments or an actual "job," the scientists and engineers who attained that status demonstrated the following characteristics:

- *A source of sustained value creation* for the company through technological contributions.
- *A well-recognized innovator*, both internally and externally, in their technical field.
- *A go-to person* in their technical area for hard challenges and problems.
- A strong *mentor* for young scientists and engineers.
- *A strategic business thinker* who is adept at linking new technology programs to significant business results.
- A politically astute *idea leader* with the interpersonal skills to work an issue within the organization and to draw people together around it.

It follows that decisions to promote individuals to TTT might want to consider explicitly such characteristics as criteria for promotion.

Effective Utilization

The degree of autonomy granted to TTT at the five companies ranged from having almost total control of their time and work focus to being housed within a business unit and devoting most of their time to BU assignments. However, findings suggest that TTT are most likely to deliver value and make things happen for the company when they are:

- Granted significant autonomy;
- Given access to and some control over budget and other resources;
- Have a significant amount of interaction with top Management, e.g., CEO, CTO, or VP.

¹ Portions of this summary are published in the Fall 2006 *CIMS Technology Management Report*.

However, effective utilization does not depend only on defining the TTT role. Based on the study findings, we also recommend:

- TTT candidates should be nominated by a manager in consultation with existing TTT or by a TTT.
- The subsequent “vetting” process should be “transparent” and designed to fit the company environment.
- Since TTT are a corporate resource, they should receive some form of training and expectation-setting for that role.
- The managers to whom TTT report should also receive training that will help them realize the TTT potential as a valued corporate resource. Who is managing the business and how much of TTT time should go to corporate vs. business-unit activities are significant questions that must be addressed.

Bottom Line

Deploy your TTT in an optimal manner, energize them to do their best, and they can be expected to make strong contributions in four areas:

- A *corporate conscience* for challenging management’s thinking about technology, related business practices, and strategy.
- An active and effective *technological networker*, both inside the company and in the external scientific community.
- A *technology champion* for emerging and radical technological initiatives with important business potential.
- A *leader on the technical ladder* who helps to manage and strengthen the ladder through fostering employee development and strategic thinking about the company’s technology needs.

DETAILED FINDINGS

Major categories of findings are presented below. Themes or interesting perspectives about the role and utilization of top technical talent (TTT) are presented. Due to the relatively small sample of companies in this study, one should recognize that these findings may not be representative of a larger sample of companies and respondents.

Respondent profile

- Data were collected in five, large (sales in excess of XXX) companies as described below:
 - A: chemical production
 - B: resource exploration
 - C: chemical production
 - D: large systems manufacturing
 - E: technology development and services
- Approximately 64 TTT, execs, and managers were interviewed.
- TTT were scientists & engineers typically in the top 2 levels of the technical ladder.
- Business managers were at the levels of VP, Director, or Business Unit leader.
- TTT typically had more than 20 years with the company and represent approximately the top 1% of the personnel on a company's technical ladder.

Road to the top: Characteristics that are needed to be a TTT

- TTT nominees typically had records of “sustained value creation” for the company through their technical contributions. This type of contribution appeared to be the single most important criterion for attaining TTT status. TTT nominees generally were expected to have had such contributions on more than one occasion.
 - An interesting dialogue is emerging in some companies as the types of people being nominated for TTT expands into areas that are not so defined by science and engineering, e.g., areas with more direct customer contact where implementation of technology in innovative ways may be more common than doing patentable research or engineering. In these situations, what constitutes IP and a technological contribution?
- Acknowledged technical mastery in an area is expected for TTT nominees. They are the “go to” person in a technical area.
- External visibility and strong network in scientific communities inside and outside the corporation characterize TTT nominees. Significant leadership roles in such communities also were observed in a number of cases.
- Mentoring and give back in the technical community characterized almost all TTT nominees. Grooming of high potential, early-career scientists and engineers was a role for most TTT nominees.

- There was some evidence of concerns about risk taking and failure on the path to TTT nomination. Such events were seen as potentially creating setbacks for attaining TTT status.
- Although not a universally held expectation for TTT nominees, it was seen as a very positive skill if a TTT nominee was adept at seeing business opportunities in technologies and seeing the path to new business contributions.
- Another enhancing factor, but not always required of every TTT nominee, was the demonstration of interpersonal skills to work an issue within the organization, to lead that initiative, find support in key quarters of the company, and to draw people together around that initiative.
- Achieving TTT status clearly depends upon a profile of the above characteristics; no single criterion could assure a scientist or engineer of achieving TTT status.
- In some cases, we found evidence of a tension between business needs and the nomination of individuals to the TTT role. Since TTT might be granted some autonomy for “TTT work,” business managers felt they could not nominate a person to TTT because they could not afford to have the TTT nominee reduce his or her commitment to business unit needs.

Road to the top: Key questions in the nomination and selection process for TTT

- Who does the nominating?
 - Manager nomination is common, but TTT also may arise through self nomination or nomination by other senior technical people.
 - There was some evidence that self nomination could result in a large number of nominees creating a burden on the nomination, review, and approval process.
- How is a TTT vetted?
 - Review by committees of managers and TTT was common.
 - Upper level management (CTO; CEO) may sign off.
 - In some cases, a “job description” for the new TTT role had to be developed as part of the nomination & review process.
 - This process typically stretched over months, including interviews of references and “scoring” of the various nominees.
- What’s in the review document?
 - Supporting materials (we did not have privy to details)
 - References including in some cases nay sayers, i.e., people the nominee might consider as opposing his or her promotion, job
 - Job description when part of company process.
 - In some cases, nominees had a manager/coach who helped in prepping the package for review.
- How to handle rejected people?
 - It appeared most, but not all, nominees were approved.

- In some cases, nominees are rejected. Then, detailed feedback goes back to the nominating manager for review with the nominee.

Training & Preparation of TTT's to assume role

- No training or expectation setting for the new TTT is the dominate model. There appear to be limited systematic efforts to have TTT's meet and discuss their roles.
- Preparation to assume the role is usually developed through experience and an understanding of the criteria that are described to become a TTT. The nomination and selection process tends to convey such expectations, but implicitly rather than explicitly.
- In a few cases, meetings or even a one-day retreat have been used to help new TTT understand their roles and expectations.
- We found one case where new TTT attended an executive training program. This program was the same program used by new executives in business management positions.

Training & Preparation of Managers to utilize TTT effectively

- During interviews, we came to recognize that a fair amount of effort is expended on shepherding the TTT into their role, but it appears business managers, to whom the TTT reports, receive little preparation for understanding how to utilize the TTT as they become available. Hence, there is great variability in how business managers use TTT or think they should be used. This finding is considered a significant oversight in the TTT programs.
- On the other hand, when the TTT program is highly developed and embedded in a culture that understands their potential role and value, business managers appear to learn within the culture how to use TTT and the utilization of TTT appears to be more uniform.

TTT role expectations

- There is still a lingering question of whether TTT roles are recognition for accomplishments or a job description. In general, TTT do appear to be expected to behave in new and different ways once they become a TTT. Lack of specificity in those expectations, however, can make expectations ambiguous. While these differing expectations still are being resolved, it is less the case when the TTT program is strong and well developed...utilization wins there.
- Expectations of how a TTT should behave vary a great deal across TTT and it appears they should. Context and talents leave TTT open to many different ways to contribute.
- "It's not all about money." TTT want to contribute to the company and are eager to have management seek and use their "wisdom."
- Some expectations appear to be held both by TTT and by business managers:
 - Mentoring – TTT should serve as role model and teach the younger scientists/engineers how to do "good" science, how to recognize business value in technology, how to negotiate the corporate politics, how to see where the company is going and how to grapple with the company to get there – this function of TTT is valued by all.

- TTT should be the “corporate conscience” and gadfly for technology related initiatives. The TTT should be a sounding board and speak the “real truth, not politics” when such issues are being discussed. It is important for upper management to legitimize this role for TTT.
 - TTT are the “ultimate go-to guys” in their technology area and serve as technical consultants to the corporation. They work on and solve the “hard problems.” Similarly, they may be the ones to work on problems that fall between businesses and are owned by no one.
 - TTT should engage in strong technology networking, inside and outside the company – collaboration, conferences, academic contacts are all important. Outside links are seen as especially key with some TTT given release time to serve officer roles in significant professional associations.
 - TTT should stimulate more radical innovation efforts within the company. They should be engaged in scanning and pushing for emerging technology projects/programs.
 - TTT must realize and appreciate that new technology programs and contributions need to be linked to business results.
- Some expectations diverge somewhat between TTT views of their role and business managers’ views of the TTT role.
 - TTT are expected to be stewards of the technical ladder – while all participants expected TTT to mentor young scientists/engineers, there was less agreement on how much TTT should be formally involved in evaluating and managing these younger people. TTT generally felt that they should identify talent outside and inside, groom it, be part of evaluation system for young R&D folks, and be part of technical ladder strategy setting and management. Management was mixed on these issues with reservations about TTT role in performance evaluation, promotion decisions, and formal management of the technical ladder.
 - TTT almost universally believed they should have some degree of autonomy and some budget that they could directly manage. Managers were less committed to these views and in some cases expressed fears about giving the TTT too much “freedom” or how one could justify such expenditures.
 - Many TTT believed they should be connected to the top of the organization, reporting at the VP or higher level, certainly no lower than a Director. This view was not so widely held by BU managers. (TTT should drive technical ideas to realization – be accountable for technology outcomes, lead technology to commercial successes (a view expressed primarily by business managers, not TTT’s))
 - Many TTT believed they could serve useful “gatekeeper” roles in key technical and business decision processes such as setting corporate strategy, decisions about mergers and acquisitions, stage-gate decisions, and purchases of new technologies. Managers were much more mixed on the value of including TTT in such roles.
 - Questions were raised about how well the TTT represented the diversity of the company and its talent – ethnic, gender, nationality. In general, both TTT and managers saw this as a positive goal for TTT, but it appeared to be a more serious concern for some individuals than others.

- There were mixed expectations about the extent to which TTT needed to be connected to each other in some formal fashion. Both TTT and managers saw such connections as positive, but others had never considered this question or were unsure of how important such connections were.
- In this report, we have addressed TTT as encompassing both scientists and engineers. Although it is beyond the scope of this study, it was our impression that expectations for engineering TTT and science TTT could be somewhat different and companies might need to take these differences into account in managing TTT programs.

TTT roles as realized

Below, we comment on what we observed when asking TTT and managers about what the current TTT were actually doing in their roles. These bullets mirror the set of issues identified above in the section on TTT role expectations.

- Mentoring was evident for almost all TTT.
- Corporate conscience role was evident, but appeared to be driven by personality differences more than TTT role expectations.
- TTT were always seen as a go-to person in their technology specialty.
- Strong technology networking was common for most TTT, but a few were deeply involved in external scientific community networks, e.g., president of a national association.
- TTT often exhibited awareness of emerging and radical technologies, but the extent to which they pushed such technologies within the company varied considerably.
- TTT generally had good track records for linking technology initiatives to business needs and opportunities. A subset of TTT, however, seemed to find this linking process especially interesting and tried to help younger scientists and engineers learn this perspective.
- TTT did see themselves as steward of technical ladder but often their input to its management was informally realized. Structural barriers sometimes existed to their full participation, e.g., they were not part of the formal performance appraisal process or not part of promotion decision making.
- The degree of autonomy granted to TTT was quite mixed across the companies. In one extreme, TTT has almost total control of their time and work focus. On the other extreme, a TTT might be housed within a business unit and have his or her time almost completely absorbed by BU assignments. In the stronger TTT programs, TTT were formally granted autonomy by not requiring their time be charged or by routinely charging it to overhead. As far as budget for TTT, we found very few cases where TTT actually had a budget line that they managed. In a number of cases, TTT reported that getting money was “no problem” and their manager would always support them. In other cases, TTT reported that they felt like they had to “go begging” if they wanted to initiate a project.
- In stronger TTT programs, TTT almost always reported to a VP or similar level. In some cases, we found a TTT team might meet with a VP every quarter to discuss matters. In a number of cases, TTT reported below the VP level and in a few cases, we found TTT reporting to managers who were actually below their level in the organization.

Reporting relationships appear to greatly affect the TTT role – if TTT report too low, it can constrain and hamper the TTT ability to deliver value. Their initiatives get lost in the world of “pocket vetoes” by business managers. They feel they do not have “voice” in areas where they should contribute. Having TTT report at higher levels appears to give them the perspective and scope to be a corporate resource – “The breadth of the (TTT) job is limited by the breadth of the boss’s responsibilities.”

- TTT were engaged as gatekeepers in technical decisions but this was often on an ad hoc basis as opposed to being formally structured into those decision processes, e.g., having TTT representatives on strategy boards. There were cases of such formal structures, but they seemed the exception not the rule. Many times it depended on the values and beliefs of the managers in charge. Thus, TTT involvement in such matters tended not to be systematically managed and too dependent on the whim of the manager. It did appear that the more that technology planning or decision making structures recognize and call for TTT input, the more active the TTT are in exerting technical leadership. Memberships on technology boards or councils were arrangements attempted to systematically tap into TTT as resources. Teams of TTT also were found to be used to exploit and roll out developing technology to other parts of the organization.
- Diversity among TTT was quite low. Companies sometimes noted this issue and spoke of initiatives to begin to rectify this matter.
- The extent to which TTT were formally connected to each other varied considerably. In some cases, TTT participated in “academies” or annual conferences where all TTT could directly connect with each other and share ideas and perspectives. Sometimes these associations are quite autonomous, self-electing, have own agenda, and are used as consultants by the rest of company. At the other end of the continuum, we encountered cases where TTT actually would have never met or knew very little about their TTT colleagues. It appears that TTT, and the company, benefit from having TTT be well connected to each other structurally. It is as if they need a mechanism to force TTT to interact. Business processes tend to isolate TTT and to pull them apart. TTT benefit from a “community of practice.” On the other hand, trying to develop unified action by TTT may not be feasible or desirable. Intra-org professional societies are used to connect TTT with conferences and workshops.

Unresolved questions about the management of TTT

- The location of TTT can significantly affect their role. When TTT are in a central R&D organization they seem to be able to enact the TTT role with greater autonomy and variety. Conversely, where TTT reside in a BU their role appeared somewhat more constrained by BU needs. Also concerns surfaced that pressures on BU managers to make plan or to hit the scorecard objectives can greatly curtail utilization of TTT when they report within a BU. Are these differences necessary, appropriate, or should they be explored?
- Should there be a cap on the number of TTT allowed in the company? As programs mature, concerns surface that TTT status may be “watered down.” At the same time, concerns were raised about elitism and creating a de-motivating situation if one restricts the opportunity to attain TTT status.
- How structured should the TTT program be in identifying, nominating, selecting, training, etc.? Can it get too bureaucratic?

- Who owns the TTT resource? Do they belong to the corporation, to the BU, or are they autonomous? Utilization of TTT can be significantly affected by the answer to this question.
- Performance appraisal of TTT is complicated. If they are utilized as a corporate resource with considerable autonomy, their manager often has limited direct knowledge of the TTT work and accomplishments. Thus, evaluation requires use of considerable amounts of second-hand evaluations, gathering information from others who worked more directly with the TTT. Who should evaluate TTT? How?

CONCLUSIONS AND RECOMMENDATIONS

Is the TTT role one of recognition or utilization? Companies promote individuals to TTT for recognition of past scientific/engineering accomplishments and to develop and better utilize TTT as a corporate resource. While both purposes are important, it became clear to us that the vital TTT challenge and more compelling question focused on the utilization of TTT as value-add resources within the company. Therefore, in this conclusion we focus on issues that bear directly on how to best create and utilize TTT as a corporate resource. Having said that, one should recognize that many of the same issues would be pertinent to thinking about how one should identify and select TTT even if the program is aimed specifically at recognition.

Our identification of what we regard as best practices in managing TTT focuses on two general areas: (1) Processes for promoting people to TTT, and (2) Effective utilization of TTT once they are promoted. Each of these topics are discussed below.

Promoting people to TTT

From our analysis, people who attain TTT status appear commonly to have demonstrated a number of characteristics as show below.

- *A source of sustained value creation* for the company through technological contributions.
- *A well-recognized innovator*, both internally and externally, in their technical field.
- *A go-to person* in their technical area for hard challenges and problems.
- A strong *mentor* for young scientists and engineers.
- *A strategic business thinker* who is adept at linking new technology programs to significant business results.
- A politically astute *idea leader* with the interpersonal skills to work an issue within the organization and to draw people together around it.

In addition, from our analysis of expectations for TTT, once they are in that position, it appears they also should be capable of serving a number of roles once they attain TTT status.

- *A corporate conscience* for challenging managements' thinking about technology, related business practices, and strategy.
- An active and effective *technological networker*, both inside the company and in the external scientific community.
- *A technology champion* for emerging and radical technological initiatives with important business potential.
- *A leader on the technical ladder* who helps to manage and strengthen the technical ladder through fostering employee development and strategic thinking about the technological needs of the company.

It follows that decisions to promote individuals to TTT might want to consider explicitly such characteristics as criteria for promotion. In addition to these criteria, a number of firms raised the question of *diversity in the TTT ranks*. In considering who should be promoted to TTT, management also should consider how well TTT represent their workforce, the scientific community, and the perspectives that the firm values and wants to draw upon. In light of these issues, however, any promotion process for TTT needs to answer a number of questions about such criteria.

- What do these criteria mean to you?
- Do these criteria for TTT fit your company?
- How do you judge or measure them?
- Are these criteria clearly explained, agreed upon, and understandable to individuals on the technical ladder who aspire to becoming TTT?
- Do our criteria promote diversity as it is valued in this company?

Nomination and selection of TTT

After reviewing our notes, we recognize there are many ways to approach the nomination and selection of TTT. In seeking to have a process that identifies and considers high-quality candidates, is seen as fair by participants, and allows for the efficient use of time and resources, we identified some practices that appear to have value. Our recommendation is that companies consider these possibilities and explicitly decide if they make sense for their goals and situation for nominating and selecting TTT.

- TTT candidates should be nominated by a manager in consultation with existing TTT or by a TTT.
- TTT vetting should allow for a staged process where:
 - Nominees are assigned a “coach” (someone familiar with the TTT nomination and selection process) who can help the nominee prepare materials as needed. This coach might be assigned at the outset or after the preliminary review stage (see next stage).
 - Initial nominations should receive a preliminary review by managers and TTT members of a committee with the possibility of counseling a nominee to withdraw from the process if it appears premature or inappropriate to consider him or at this time. Feedback from the nominating person should accompany such counseling to withdraw. Such initial reviews might be done by a subset of the full committee if deemed sufficient.
 - If preliminary review finds the candidate viable, a full review should take place with consideration of the full nomination package and the use of interviews as appropriate. The full committee would participate in this process.
 - If approved by the committee for promotion to TTT, the candidate should also receive final review by a top level manager, e.g., CEO or CTO, for final sign-off. This is a safeguard in the process and brings TTT to the attention of upper

management contributing to TTT being viewed as a significant accomplishment and a corporate resource.

- The nominating documentation should include information such as:
 - Supporting materials (we did not have sufficient detail here to make recommendations)
 - Feedback from interviews of appropriate sources, perhaps including “nay sayers” who would be explicitly critical of such a nomination.
 - The consideration of a “job description” for the new TTT position, if it is approved, that would set the stage for the TTT’s effective utilization and help set expectations for the new TTT’s role.

Training to support effective utilization of TTT

Conclusions about training are predicated on the notion that TTT are seen as a corporate resource and that the company wants to utilize them in that way.

- TTT should receive some form of orientation and expectation setting when they are promoted to TTT. Of course, the content of this training depends wholly upon the nature of the TTT role. Given the scenario we are depicting here, we would recommend training events such as:
 - Expectation setting sessions between TTT and management groups, possibly upper management as well as the manager to whom the TTT will report. The aim of this training would be to help the TTT see how such managers view his or her role.
 - Expectation setting sessions between the new TTT and already existing TTT. The aim of this training is similar, but approaches it from the experience of TTT.
 - If TTT are seen as operating in an executive capacity, opportunities to participate in training that other execs experience might be fruitful.
- Managers to whom TTT report, and perhaps managers beyond that position, should receive some training around how the company defines the TTT role, what are expectations for how TTT should conduct them, and valuable ways that managers have utilized TTT in the past. This training is not expected to restrict the manager in his utilization of TTT as much as it is to open them up the possibilities of TTT as a valued resource. It may be the case, however, questions about the utilization of TTT need to be addressed in terms of how the TTT divide their time between specific tasks. A significant question in the utilization of TTT was whether their time should be spent in corporate level activities or be spent focused more narrowly on business unit activities. These issues might be usefully addressed in these training scenarios.

Effective utilization of TTT

In trying to understand how companies might effectively utilize TTT, we drew upon our analysis of expectations for the TTT role. From that analysis, we identified three different aspects of TTT utilization (see the attached matrix):

1. TTT areas of contribution
2. Management practices that could be used to support/facilitate TTT contributions.
3. TTT roles that potentially would be served if such contributions and recommendations were followed.

For example, many thought it important that TTT help manage and develop the technical ladder within the firm. From these ideas, “stewardship of the technical ladder” was identified as a set of specific activities in which TTT might engage. Then, for each of those activities we tried to identify specific management practices that might help support and facilitate those TTT contributions, i.e., management practices. Finally, we noted specific TTT roles that might be served for such activities. This resulted in four different areas of TTT contribution being identified and explored:

1. TTT as empowered technology leaders
2. TTT knowledge management and deployment.
3. TTT stewardship of the technical ladder.
4. TTT networking.

As can be seen in the matrix, this perspective leads to a more comprehensive and complex view of what it might mean to “effectively utilize TTT.” A number of areas of contribution, management practices, and roles are possible. Our hope is that this matrix can serve as a basis for review, discussion and eventually action in considering how best to utilize TTT. We also recognize that all of these roles and practices may not fit all companies. Our goal, however, is to stimulate the discussion of these issues, to help management see the range of possibilities, and to make explicit decisions about how they wish to proceed. Each firm must find its own way in the management of TTT.

ATTACHMENT

EFFECTIVELY UTILIZING TTT

TTT's Area of Contribution	Management Practices to Support/Facilitate TTT contributions	TTT Role being Served
TTT as empowered technology leaders		
<ul style="list-style-type: none"> • Advisors to upper management on technology matters 	<ul style="list-style-type: none"> • TTT reporting relationships should be at the VP or Director level and no lower. • Use of technology planning teams or technology councils. • TTT sit as members of strategic planning bodies. 	<ul style="list-style-type: none"> • Well-recognized innovator; go-to person; strategic business thinker; corporate conscience
<ul style="list-style-type: none"> • Thought leaders in setting the technology agenda of the company 	<ul style="list-style-type: none"> • Budget set asides for TTT to investigate ideas and to create technological vision. • Granting of some autonomy to TTT for exploration and communication of new ideas. • Have TTT report high enough in the organization that they can “see” 	<ul style="list-style-type: none"> • Well-recognized innovator; strategic business thinker

	the larger corporate landscape and issues.	
<ul style="list-style-type: none"> • Stimulators for investigation of emerging and radical technologies 	<ul style="list-style-type: none"> • Budget set asides for TTT to investigate ideas and to create technological vision. • Use “emerging technology” workshops led by or attended by TTT. 	<ul style="list-style-type: none"> • Technology champion; well-recognized innovator
TTT knowledge management and deployment		
<ul style="list-style-type: none"> • “Go-to” person for hard technical problems 	<ul style="list-style-type: none"> • Identification and promulgation of TTT areas of expertise. • Use of searchable information systems for referencing such expertise. • Use TTT as customer consultants. 	<ul style="list-style-type: none"> • Go-to technical person
<ul style="list-style-type: none"> • Providing insights on technical investment issues 	<ul style="list-style-type: none"> • Serve on-stage gate committees. • Be used as advisers on mergers & acquisitions. • Have a forum for TTT to alert upper-management on emerging & 	<ul style="list-style-type: none"> • Strategic business thinker; corporate conscience; (push & pull)

	discontinuous technologies.	
<ul style="list-style-type: none"> Contribute technological knowledge to strategic planning 	<ul style="list-style-type: none"> Serve as members of “technology councils” and strategic decision making teams. 	<ul style="list-style-type: none"> Strategic business thinker; corporate conscience; (push & pull)
Stewardship of the technical Ladder		
<ul style="list-style-type: none"> Mentoring 	<ul style="list-style-type: none"> Training for TTT in mentoring skills; perhaps mentoring is explicitly evaluated as part of TTT performance. 	<ul style="list-style-type: none"> Mentoring
<ul style="list-style-type: none"> Performance evaluation inputs 	<ul style="list-style-type: none"> TTT assigned responsibility for performance evaluation of lower ladder scientist & engineers or are explicitly partnered with a manager for such evaluations. 	<ul style="list-style-type: none"> Steward of the technical ladder
<ul style="list-style-type: none"> Identification of high-potential talent 	<ul style="list-style-type: none"> Joint committees of TTT and managers for review and development action planning, 	<ul style="list-style-type: none"> Steward of the technical ladder
<ul style="list-style-type: none"> Promotion & career development 	<ul style="list-style-type: none"> Joint committees of TTT and managers for review and development action planning, 	<ul style="list-style-type: none"> Steward of the technical ladder

TTT networking		
<ul style="list-style-type: none"> Integrators of the companies technological community 	<ul style="list-style-type: none"> Create internal councils, conferences, or academies where TTT can gather and share ideas, vision, and accomplishments. TTT leadership teams to plan and execute initiatives that cut across the company – report to VP or higher. 	<ul style="list-style-type: none"> Mentor; idea leader; technological networker; leader on the technical ladder.
<ul style="list-style-type: none"> Outreach into the scientific community for knowledge transfer and promotion of the company to external stakeholders. 	<ul style="list-style-type: none"> Encourage and support TTT participation in external professional associations. Budget for TTT for external activities. Release time for participation in leadership of professional organizations. 	<ul style="list-style-type: none"> technological networker; technological champion