ABSTRACT
        This paper analyzes an institutional change in a
large, Turkish public university, the Middle East Technical
University (METU), by using an anomaly-based organizational change
model. The model explains change as an organizational response to
anomalies caused by internal and external organizational conditions.
The study used a qualitative case study design that included
interviews with 51 individuals: deans, department heads, faculty,
students, unit heads, and administrative personnel. Open-ended
interviews, typically about 45 minutes, were used with the informants
to elicit their ideas on the most important issues or problems facing
the University. Interviews were audiotaped and later transcribed,
yielding about 200 pages for thematic content analysis. Various
institution-specific documents were also reviewed as secondary source
data, such as speeches, administrative memos, bulletins, statistical
information, and historical documents. Interview findings identified
six sets of major organizational issues facing METU: general status,
students, academic staff, administration and governance, teaching and
learning, and physical infrastructure and facilities. These are
compared with a separate set of anomalies, devised from the document
study, that are attributed to changes sought by the president of the
institution. A great deal of overlap was found between the two sets
with some differences in the community direction and spirit. Results
confirm that recognition of anomalies does not require the executive
touch; they are commonly recognized and framed by the organizational
community. It is noted that the community of 51 interviewees detected
more subtle anomalies than the presidential administration. (Contains
43 references.) (NAV)

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ANOMALY-BASED CHANGE IN HIGHER EDUCATION: THE CASE OF A LARGE, TURKISH PUBLIC UNIVERSITY[1,2]

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Introduction

Organization theory in higher education is based on four powerful models: the bureaucratic or structural frame, the collegial or human resource frame, the political frame, the organized anarchy or symbolic frame. Bensimon, Neumann and Birnbaum (1989) added a fifth frame, the cybernetic system, as an integrative perspective of the earlier four frames. The bureaucratic or structural frame involves a hierarchical, rule-based administrative scheme in which change is explained as structural reconfiguration of organizational apparatus as the environment demands. The collegial or human resource frame considers higher education institutions as a collegium "where differences in status are deemphasized, people interact as equals in a system that stresses consensus, shared power and participation in governance, and common commitments and aspirations (Bensimon, Neumann and Birnbaum, 1989, p. 54). In this frame, change is through community-wide consensus and participative decision-making. The political frame sees the higher education institutions as essentially political entities in which there exist more than one interest groups or coalitions. Change, under the political frame, is dynamical politicking process among various groups struggling for more control and influence. The organized anarchy or symbolic frame, on the other hand, explains higher education institutions as cognitive or expressive domains. Change, in this frame, is through negotiation, not by command, and through applying preexisting solutions to problems, not by comprehensive planning (Bensimon, Neumann and Birnbaum, 1989, p. 60).

The cybernetic model, on the other hand, was developed to be an integrative frame of the former four models (Bensimon, Neumann and Birnbaum, 1989, p. 62). The authors explain the important facets of their frame as well as how change can be interpreted within this frame as follows:

> "Within this model, institutions are seen as controlled in part by negative feedback loops created and reinforced in the institution's (bureaucratic) structure and negative feedback loops created and reinforced in the institution's (collegial) social system. The balance and relative importance of these loops are mediated by systems of (political) power and cultural and cognitive (symbolic) elements unique to the institution... institutional performance is continuously assessed by 'monitors'-institutional leaders or groups interested in a limited number of specific aspects of organizational functioning. If organizational performance in a monitored area (e.g. minority enrollment, faculty parking) falls below the threshold considered acceptable by a monitor, the monitor is activated to alert others to the 'problem' and to press for corrective action" (Bensimon, Neumann and Birnbaum, 1989, p. 63).

These theoretical perspectives to higher education organizations are generally in line with an incremental, evolutionary bias when evaluated from the point of transformational view in organization studies. That is, the dominant theories of change in universities have emphasized their inherent incremental nature. In the past two decades, the "open systems" theory of change has been the most dominant organizational perspective in studying the higher education institutions. In a recent study, Simsek and Louis (1994) developed a nontraditional perspective in explaining change in higher education institutions based on Kuhn's now-famous paradigm shift concept. Before presenting the main points of a transformative organizational model (short radical organizational reorientations followed by long evolutionary intervals) developed by these authors, let us briefly review several transformational models of organizational change.

Transformational View of Organizational Change

The transformation approach generally describes two types of change: (1) change in quantity and content which is evolutionary, adaptive, cumulative and developmental, (2) change in quality, core and context that is revolutionary, disruptive, transformative and fundamental. For example, Greiner (1972) argued that growth or development process in organizations include a relatively calm period of growth, and each of these evolutionary periods ends with a crisis or a revolutionary disruption. Not outside but internal forces, stemming from the

organization's history, shape the future growth of organization. Greiner's perspective marks one of the earliest studies that grasped the internal logic of transformative change in organizations, however, his approach to evolution and revolution in organizations is markedly functionalist (Burrel and Morgan, 1983). Evolution and revolution both follow a deterministic path, and the change is regarded as linear process of succession of evolution and revolution in a cause and effect relationship.

Similarly, Tushman and Romanelli (1985) explained organizational evolution by combining two entirely different, somewhat contradictory, modes of change: convergence, and, reorientation or re-creation. Organizational change, in this view, is a dialectical process as each of these change modes dominates the process in different developmental phases of organizations:

> "Organizations evolve through convergent periods punctuated by reorientations (or recreations) which demark and set bearings for the next convergent period. Convergent periods refer to relatively long time spans of incremental change and adaptation... Reorientations are relatively short periods of discontinuous change where strategy, power, structure and controls are fundamentally transformed towards a new coalignment..." (Tushman and Romanelli, 1985, p. 171).

Perhaps most empirically strong studies on utilizing transformative perspective arguments in the analysis of organizational change are done by Miller and Friesen (1930, 1981, 1982, 1984). Their approach is conceptually similar to the models developed by Greiner (1972), and, Tushman and Romanelli (1985). They explain organizational change on the basis of two recurring cycles: momentum and revolution.

According to Miller and Friesen (1980), there are two extreme stages in the period of organizational change and evolution: periods of momentum in which "any organizational tendency, whatever its direction, will tend to have momentum associated with it," (p. 592) and periods of revolutions in which many trends are reversed and many structural and strategy-making variables are dramatically changed or realigned.

Miller and Friesen's quantum view explains that changes in structure must be concerted, rapid and dramatic. Organizations have (and must have) a certain degree of complementary alignment among structural variables, otherwise performance suffers seriously. As the differentiation increases, there occurs a greater need to integrate the efforts of the

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organizational units through some additional devices such as task forces, standing committees, and cross-functional and interdepartmental committees. Their empirical studies provided support for the quantum view to organizations (Miller and Friesen, 1982, p. 870).

Organizational Change as Paradigm Shift

Simsek and Louis (1994), in their paradigm shift model, described organizational change in /olving long periods of evolutionary adaptation disrupted by short revolutionary intervals. What they call this revolutionary interval "paradigm shift" through which a long standed organizational world view is replaced by a new world view, or organizational paradigm. One of the intriguing aspects of their model is that the new paradigm is primarily developed in response to the accumulated anomalies (problems) within the old par¯ ligm. So, the fuel and the force of change in organizations are the recognition and the framing of these problems followed by a proposal to resolve them. This resolution and reframing do simply constitute the prototypical background of the emerging paradigm.

There are four fundamental periods in each paradigm's life cycle (Sterman, 1985): (1) An emergence period where a new understanding and network of relations are established as the growing number of practitioners convert to the new paradigm, (2) a normalcy period in which the puzzles embedded in the paradigm are solved by practitioners as their numbers continue to increase. (3) a crisis period demarked by a number of growing anomalies and leading to a strong feeling of insecurity among the practitioners of the current paradigm, (4) a replacement period where the dominant paradigm, once defined rules and norms and that provided a pattern of activities and exemplars, becomes insufficient. Consequently, the old paradigm is destroyed and replaced by another competing and promising paradigm which presents better tools to resolve the anomalies. Using the new paradigm, practitioners begin to see familiar objects and relations in a different light, sometimes joining unfamiliar ones. A new period of normalcy occurs. Thus, a succession of evolutionary and revolutionary stages describes the paradigmatic change process. While the shift is revolutionary the gradual accumulation of anomalies becomes an evolutionary process.

What is Anomaly?

Anomaly, from an organizational point of view, refers to a problem that threatens the core functions of an organization which inevitably lead: to poor performance. In a sense, anomalies are beacons that shed light both to the past and the future of an organization. "Anomalies brings us to the basic assumptions of the reigning paradigm [experience, embedded beliefs, values and ideologies, and, dominant strategies in an organization prior to the anomalous situation: *authors' note*], and, they point secondly to the assumptions of the new paradigm [the essentials of the probable set of strategies, beliefs and ideologies in the future following the resolution of anomalous situation: *authors' note*]" (Imershein, 1977, p. 30). Thus, anomalies are individual problem cases that carry imprints of the past organizational experiences, and, that also provide hints about where that organization may strategically proceed in the future (e.g. *Anomaly:* quality decline. *Past experience:* as organization literature commonly refers to, a substantial increase in quantity, say the size of the student population, may cause quality declines. *Proposed remedy:* usually through a reverse strategy: enhance quality, may be through a reduction in quantity, say the student population). We found evidence of this rationale by carefully analyzing anomalies and the administration's strategies for resolving these anomalies (interestingly through reversal strategies in most cases) in our research about the change efforts at the University of Minnesota (Simsek and Louis, 1994).

Anomalies and Organizational Transformation

As in the case of paradigm destruction in scientific disciplines, formal organizations experience certain challenges that might lead to paradigm destruction or absorption of the challenges by the dominant paradigm. These challenges might be worker unionization, structural changes in the market, or ideological movements in and around the organization. In these situations, leaders try to adjust to unexpected changes. If they succeed, their efforts can be called "puzzle solving," defined by Kuhn as a normal science practice, and the organization will continue its

normal functioning through some minor adjustments. However, to the extent these efforts fail, a paradigm revolution will come through (Brown, 1978, p. 377).

Anomalies can either result from unresolved or delayed issues (puzzles) or sudden and unexpected changes occurring inside and outside the organization. According to Miller and Friesen, however, anomalies occur when an organization excessively relies on a particular strategic direction (Miller and Friesen, 1980). The first indicator of an anomalous situation is when "the dominant organizational myth (beliefs and practices) can no longer produce convincing strategies" (Hedberg, 1981, p. 12) which results in sustained low performance. According to Tushman and Romanelli, low performance, in turn, disrupts the negotiated order in the organization which triggers an organizational reorientation (Tushman and Romanelli, 1985, pp. 202-3). In order to conceive unresolved issues or problems as anomalies, they should be a part of organizational life remaining unresolved for a considerable time period and a certain level of negative information should constantly provide support which shades doubts on the power of the dominant myth (Jonsson and Lundin, 1977, 163).

In this stage, even in the case of continuous negative information, organizational members especially the managerial elite may still perceive the world view, rules, principles, models, and exemplars generated by the ruling paradigm as taken-for-granted. In dealing with this situation, "individuals might be avoiding contact with that type of information again, or actively searching for supporting, positive information" (Jonsson and Lundin, 1977, p. 163). Under a prevailing myth, organizations become dynamically conservative (Tushman and Romanelli, 1985, p. 202), and, as Sheldon argued, "members of the organization collude to avoid any questioning of their ideology or what they do..." (Sheldon, 1980, p. 63).

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Sources of Anomalies

External sources of anomalies: As we mentioned earlier, organizational anomalies may originate from primarily two sources: internal organizational conditions and external environment. In the organizational literature, besides the contingency approach that focused on a contingent fit between external and internal factors (Lawrence and Lorsch, 1967),

Hannan and Freeman's (1984) population ecology perspective developed interesting propositions on the impact of external conditions on how organizational anomalies may result from fluctuating exogenous factors.

Organizations share a life space with other organizations. Overtime, as soon as the new organizations pass the phase of birth, they must find ways to maintain a certain degree of reliability and accountability in their internal operations for satisfying a required degree of transactions with their environment (Hannan and Freeman, 1984). This is what Meyer and Rowan (1977) called the institutionalization. This predictability, reliability and accountability in internal and external organizational operations result in structural inertia, that is, organizations may no longer be able to follow future changes in the external environment. As a result, "an organization's strategy tends to remain in place for extended periods of time" (Burgelman, 1991, p. 251). This supports the view of Tushman and Romanelli (1985), and, Miller and Friesen (1984) that long periods of small, incremental change causes internal inertia which may lead to organizational anomalies.

The causes of anomalies may not always be an evolutionary misfit between the internal structure and strategy and the environmental change. Sometimes, sudden and unexpected changes in the external environment may put organizations in a vulnerable position. Unpredicted shifts such as technological shifts (Astley, 1985), political turmoil (Carroll, 1987) and legal change (Haveman, 1992) can create internal anomalous reflections on organizations.

Internal sources of anomalies: Excesses in a number of strategic behaviors, changes in the environment, and misfit between the cognitive image of reality and the environment create anomalies that force the dominant administrative world view in the organization into crisis. However, perception and recognition of anomalies become a critical factor. On the one hand, under the guidance of learned experiences and past history (Huber, 1991), administrative strata is not able to distinguish a puzzle (which is trivial and solvable through the utilization of knowledge within the range of past experiences) from an anomaly (which directly threatens the established belief system or order). They still keep faith in their old belief system distilled from their past experiences and continue treating problems as if they are temporary. On the

other hand, neither their established cognitive map nor the institutionalized order in the organization allow an easy challenging. Survival becomes the only alternative. In the long run, puzzles or trivial problems turn into anomalies.

Anomalies and Performance Deterioration (Then Crisis)

According to Lant and Mezias (1992), organizations assess their actual performance based on a target level of performance or aspiration level. So, "...the impetus for organizational change and adaptation is triggered by performance below aspiration level" (Lant and Mezias, 1992, p. 48). Sustained poor performance or performance below aspiration leads to a degree of dissatisfaction among the members of organization. This dissatisfaction eventually leads to a condition where current or dominant organizational strategy and structure are called into question (Lant and Mezias, 1992, p. 49). Lant and Mezias further discuss the relationship between the organizational performance level and the kind of change it dictates [whether first-order or second order] (Argyris and Schon, 1978)] as follows:

> "The basic mechanisms are simple and familiar: Satisfactory performance will tend to result in reinforcement of the lessons drawn from the organization's past experiences; the status quo will be maintained and justified, resulting in first-order learning and convergence. By contrast, this tendency toward convergence will be mitigated when unsatisfactory performance calls existing routines and practices into question. As a result, the organization is more likely to undertake major changes in an effort to raise performance above aspiration level" (Lant and Mezias, 1992, p. 49).

Thus, the performance below aspiration that calls for a second-order learning or major reorientation is usually associated with a number of organizational anomalies. We argue that the terms "target level of performance" or "aspiration level" carry vague meanings. In real organizational settings, organizations usually do not have well-established performance monitoring. Even if that is the case, managerial elite in organizations is usually unable to realize or interpret the information they receive on performance as to whether it means performance is below or above the target or aspiration level. It is too a rationalist expectation from the administrators. Even with the availability of a rich information flow to their offices, many times, they interpret the situation as if it is trivial or temporary. So, many times, serious problems or anomalies are treated as if they are trivial, small perturbations. This is exactly the

case that creates paradoxical situations for managers of many organizations. To interpret the case as an anomaly, managers need clear, tangible indicators of performance deterioration, and, this is only through the emergence of anomalies which signal unnegligable negative feedback on the performance level. When organizations start experiencing anomaly indicators, this usually calls for a crisis which can only be remedied through a major change. The phase of major reorientation or shift is usually associated with a new leader or a new executive team on the scene (Tushman and Romanelli, 1985; Simsek and Heydinger, 1993; Simsek and Louis, 1994).

Anomalies and Executive Succession

When anomalies become part of the organizational life for long periods of time, they strongly affect the organizational performance and eventually lead to crisis. "Although crises and surprises are anathema to managers trying to keep organizations stable, they seem to be essential to the creation of change" (Hurst, 1986, p. 24).

> "When ambiguity [crisis] is present, people who can resolve it gain power. The values of these powerful people often affect what the organization becomes. When ambiguity increases, the person best able to resolve it gains power, as does that person's vision of the world [paradigm reality] and the organization. Ambiguity [crisis] thus becomes the occasion when ideology may be shuffled. An organization may 'reset' itself whenever there is an important, enduring ambiguity that is resolved by someone whose actions have surplus meaning. Those actions may implant a more pervasive set of values... When new values are introduced into the organization, a new set of relevancies and competencies are created that can provide a badly needed source of innovation. An organization can learn new things about itself and about its environment when ambiguity is present..." (Weick, 1985, p. 125).

Weick's argument lends further support to what is stated in the literature that the crisis phase coincides with the emergence of a new leader on the scene and a large scale overhaul in the power structure of the organization. Thus, during organizational transformations or reorientations, new leadership or executive succession plays an important role (Tushman and Romanelli, 1985; Tushman, Newman and Romanelli, 1986; Virany, Tushman and Romanelli, 1992; Simsek and Louis, 1994).

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Purpose and Research Questions

The purpose of this paper is to analyze an institutional change initiative in a large, Turkish public university, Middle East Technical University (METU), by using an anomaly-based organizational change model. The model explains change as an organizational response to some anomalies caused by internal and external organizational conditions. Equipped with this model, the researchers attempted to answer the following questions:

1). What is the nature of anomalies at the University from the perspectives of various stakeholders?
2). What is the nature of anomalies articulated in the president's change agenda?
3). What are the similarities and differences between the two sets of anomalies?
4). Does the nature of anomalies warrant a major strategic reorientation in the University? Did the anomalies cause a reorientation in the University?
5). What were the causes of anomalies (whether internal or external)?
6). If a reorientation is detected, did it coincide with a leadership change or executive succession?

Methodology

To answer the research questions presented above, we were interested in getting opinions of a diverse group of individuals on the anomalies the University has faced today. To do this, we used a qualitative case study design (Yin, 1984). Since we were interested in depth and rich description of the University, such data are difficult to collect through survey instruments or unobstrusive measures. Besides various documents related to the change in the University, interviews were used to collect data from 51 individuals: 5 college deans, 5 department heads, 10 faculty members from different colleges, 12 students, 7 unit heads, 12 administrative personnel. A clustered random sampling was used to form the sample.

These individuals were first informed by letter about the research followed by telephone contacts. Personal interviews were used to collect data. An open ended interview technique was used. At first, interviewees were asked a general question about the current status of the university as they perceive it. Through follow-up questions, the researchers tried to elicit interviewees' perception on the most important problems or issues the University currently has.

A typical interview ran about 45 minutes, and interviews were tape recorded. Each recorded interview was later verbatim transcribed by a professional typist. The result was about 200 pages of single-spaced interview data. Content analysis technique (Patton, 1987; Miles and Huberman,1984) was used to analyze the interview data.

Verbatim transcript of each interview text was manually analyzed by using a thematic content analysis technique. Each text was taken as a whole to be searched for themes on institution-specific problems and issues. Each theme was tagged with an appropriate name, and, with a short descriptive statement. An initial list of themes was produced from the analysis of 51 texts. Then, as a second step, this list was went through to combine common themes under various categories. As a third step, categories were refined under several general problem or issue headings.

As a second data source, various institution-specific documents were reviewed such as the University's Strategic Plan (1995-2000), president's speeches, administrative memos, bulletins, statistical information, and various historical documents.

The Case of a Large, Turkish Public University: Middle East Technical University

Middle East Technical University (METU) located in the Turkish capitol, Ankara, is one of the fifty publicly funded Turkish universities. It was founded in 1956 with the idea that housing and planning conditions in Turkey needed qualified technicians trained in these professions. So, it was founded under the name of Institute of City Planning and High Technology with 36 students and 4 instructors. One of its founding goals was to create an institution that could serve the whole Middle East region which is why English became the language of the institution. As a result, many international students from 54 different countries have received undergraduate as well as graduate degrees from the institution.

In October 1957, it gained university status with several technical departments: Mechanical, Civil, Electrical and Chemical Engineerings. Between the years 1957 and 1963, the METU campus consisted of temporary buildings in the city. Its current campus, originally planned to meet the needs of 12,000 students, was put in service in 1963. Over the years, its

growth has been phenomenal in terms of number of students, faculty, personnel and facilities, and, has been one of the several highly repudiated universities in Turkey. The success can be attributed to such factors as English instruction, qualified academicians, country and region specific research facilities.

METU has established close contacts with other universities around the world and has many joint research projects, and international faculty and student exchange programs. Compared to other Turkish universities, it has facilities of the highest quality such as 35 research centers, a library of 275,310 books and 119,900 bound periodicals, computer center with campus-wide extensive networking capabilities, connecting the institution to world wide Internet as well as to national research network. Being a campus located outskirts of metropolitan Ankara and having high quality sports and recreational facilities, housing and dormitories for academicians and students, it is identified with a strong METU culture, and a lively social environment.

Up to 1982, it was governed by a board of trustees and had a substantial degree of autonomy. This administrative style was apparently borrowed form the U.S. universities, and was the only higher education institution with this special status defined by law. However, with the establishment of Higher Education Council (HEC) in 1982, it was put under a centralized machinery of HEC. Many provisions in the HEC's law were opposed by academicians since they perceived them potential threats to academic freedom and autonomy. Consequently, many of them left the University. Moreover, curricular changes imposed by HEC coupled with a capacity increase after 1982 created quality concerns, especially at the undergraduate level. For example, the number of students reached 17,000 in 1984, and 22,000 in 1992.

Within the past 40 years since its foundation, METU has awarded 40.000 undergraduate, 8000 Master's and only 565 doctoral degrees. The University is employing 2,011 academic personnel. The number of graduate students was 2,781 in 1994, and it has been increased to 3,314, around a 20% increase in just one academic year consistent with the President's shift of focus from undergraduate to graduate education.

On the other hand, as articulated by the President in the opening speech for 1993-94 academic year, faculty at METU carried out 1/3 of all basic and applied research studies (except Health Sciences) in the nation, and arranged 1/3 of international congresses, conferences and seminars in 1992. In addition, they produced approximately 1/3 of all international publications nationwide. In spite of these, the University's budget was only 1/25 of the source being distributed to existing fifty state universities. Moreover, the salary of faculty members working at METU is less than half that of those working in private universities. Also private universities with better research facilities, higher income and accommodation, have become an alternative for faculty members experiencing financial difficulties at the University. Consequently, it became difficult for METU to recruit and to maintain good faculty members.

"The University has lost its financial capacity in its establishment years and could not preserve its traditional attractiveness in the eyes of successful and brilliant young scholars. Consequently, the University has come to a position of loosing its dynamism" (Suha Sevuk, Parlar Foundation Award Ceremony, 1992). As the total number of state universities has risen from 29 to 50, it is unfortunately clear that METU's share from state resources will dramatically decrease in the coming years.

The environment dramatically changed for the University in the mid 1980s as the new private universities entered the scene. First, The Bilkent University was founded in 1986 in Ankara just two miles west of METU. Its founding principles were almost the same of the METU's founding principles: English instruction, quality faculty who teach and write in English, international publication, technical/engineering fields and research emphasis. Since the early 1990s, other private universities followed the suit on almost the same principles: Koc University in Istanbul founded by Turkey's largest corporation, Galatasaray University, and Sabanci University which will be operating soon founded by the country's second largest corporation, Sabanci Corporation.

Despite all these problems, and, although it is a state university, METU has always been present in the competition for national leadership and international recognition.

Moreover, it is striving to continue to be a leading higher education institution with the orientation toward research and graduate education.

In 1992, when the President took office, he started a reform initiative and defined the mission of the university as to have graduates who are able to compete at international level, to give support to industry, and to contribute to the advancement of science at universal standards. He succeeded in convincing HEC that METU must change and emphasized that the university experiences quality deterioration in many domains (student, faculty, facilities, research and teaching), it has grown exceedingly in size, and has lost the leading role for the country.

Results

1). What is the nature of anomalies at the University from the perspectives of various stakeholders?

Analysis of the data obtained from six diverse stakeholders (college deans, department heads, faculty members from different colleges, students, unit heads, and administrative personnel) at the University identified six sets of major organizational issues faced by METU. We will present our findings from highest to lowest frequency order.[4]

1) Issues or Problems Related to the University's General Status (28 %)
(57 %) Economic and budgetary issues due to heavy dependence on public resources, and lack of autonomy
(29 %) Loss of its leading role in science and technology; and inability to compete with private universities
(14 %) Deterioration in traditional METU culture and its distinct campus image

Heavy dependence on public resources and autonomy are perceived to be the most important issue under the first issue category related to the University's general status. For a public institution, this is not an easy problem to tackle with. However, it is important that such a problem emerged from the perspectives of the major stakeholders, it must apparently be a problem for the University. One way or another, the University must find ways to loosen its dependence on public resources which have been constantly declining since the early 1990s. This kind of anomalies make higher education institutions to look for alternative ways for

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[4]Percentage or frequency of 6 anomaly categories add up to 100%. Under each category, percentage or frequency of items also add up to 100%.

funding. Simsek and Louis (1994), for example, reported a similar case from the University of Minnesota where declining public resources sparked a serious restructuring efforts at the university in 1985. As a result, the University of Minnesota, under the leadership of a visionary president, was successful in generating a substantial revenue from the state business and corporations, and donations. He further paved the way to make this contribution permanent by offering various incentives to these agencies and individuals. As a result, in order to reduce dependence on state appropriation and to increase resources, one of alternatives may be to turning towards non state resources.

Of the issue of autonomy, with the establishment of HEC in 1982, METU, like other universities in the country, was put under a centralized machinery of HEC. However, it is obvious that the University's major stakeholders see the lack of autonomy as one of the primary problems of the institution. To a certain extent, financial dependence to state resources can be considered as one of the main reasons for autonomy problem. Enrichment of revenue sources through non-public resources may eventually bring greater autonomy to the institution.

Another issue in this set from the perspectives of major internal stakeholders is that METU has been loosing its traditional leading role in science and technology which has eventually eroded its prestigious position. One of the reasons for this, as the interviewees perceived, can be attributed to the emergence of various private universities which have entered the competition by adapting METU's most stronghold positions such as English instruction, international publication standards and basic and applied research in science and technology, plus higher incentives for their academicians and more resources for teaching-learning, research and service to an extent not comparable to a public institution.

Another issue is the deterioration in traditional METU culture and its distinct campus image. Interviewees expressed that traditional METU culture used to be more informal, humane and democratic whereas now it is more identified with impersonal campus climate in which students feel more detached from each other. It is now more of a culture associated with functional solidarity rather than a communal solidarity as it used to be. As interviewees

expressed, to a large extent, excessive growth in student population (almost doubled since 1982) has dramatically altered the social climate of the campus.

2) Issues or Problems Related to Students (24 %)
    (33 %) Excessive growth of the student population
    (29 %) Basic student services such as transportation, health, housing
    (20 %) Decline in students' academic and social qualities
    (18 %) Lack of student involvement in governing the University

The second set of issues is related to students. The increase in size of student population is perceived by many individuals as one of the most important issues in this set. After 1982, due to HEC's impositions (which is directly linked to the decisions of the ruling government) the number of students increased to 17.000 in 1984 and 22.000 in 1992 whereas it was 12.000 in 1982. The following issue is seemingly connected to the first issue in such a way that increase in the number of students has created problems with services such as transportation, health and housing since the these services have not kept up with the growth in student population.

Another issue referred by the interviewees is the decline in students' academic qualities. If we think of quality as a whole, decline in the quality of education, of faculty, and of students are all parts of a whole (as we will be discussing shortly after). On the other hand, lack of student involvement in the University governance is cited by the individuals we interviewed. METU used to be the only higher education institution in Turkey where the students were allowed to actively participate in the University's decision-making process. Student demonstrations, political turmoil and street anarchy of the late 1970s throughout the country were used by the military government of the 1980 to abolish student participation in university governance through the HEC law.

3) Issues or Problems Related to Academic Staff (22 %)
    (52 %) Decline in the faculty quality (difficulty of finding qualified young faculty,
    aged and professor dominated faculty composition)
    (30 %) Financial and psychological dissatisfaction of faculty
    (18 %) Limited research facilities, problems in the promotion system, inadequate
    time for research and publication because of heavy teaching load

The third set of issues are related to academic staff. Many interviewed individuals perceive a decline in the quality of faculty. They mainly associated this difficulty to the fact that young

and qualified academicians are offered better pay scale, extra incentives, more research time and money, and better facilities by the new private universities. For example, when Bilkent, the first private university in Turkey, was opened in 1986, METU and the Bosphorus University in Istanbul, the twin of METU which was founded on the same principles, experienced an exodus of prominent scholars to this institution. With further increase in the number of private universities in the country today, prospective qualified young academicians do have more choices, and a public institution's hands are tied with a very rigid public pay scale and no incentives of any kind possible. Coupled with the exponential growth in student population, limited research facilities compared to the newly founded private universities has made METU a primarily teaching institution, weakening its traditional strongholds like English teaching, research, international publication, and highly regarded student quality.

4) Issues or Problems Related to Administration and Governance (12 %)
(75 %) Lack of communication among students, faculty members and
administrative personnel
(45 %) Governance of the university (lack of professional administrators in the
governance of the University)

Fourth set of issues is related to the administration and governance of the University. Students, faculty members and administrative personnel pointed out that communication is very problematic. A startling example of the communication problem is even observed in the president's efforts to change the University. It is our finding that many members of the University community are not knowledgeable about the details or even the basics of the change agenda the administration is pushing forward. The strategic plan outlining important strategies for the University up to the year 2000 has not widely disseminated, even the college deans and department chairs have not been formally sent a copy of the plan. From this point, change efforts seem just to be a primarily administrative business rather than a collective, community-wide effort. This, of course, will substantially reduce the chances of success of the change efforts.

Externally, communication and coordination problem at the University may just be reflection of HEC's bureaucratic and centralized control over the universities. Many individuals indicated that the University has become bureaucratized so much that the setting is

no longer perceived as being any different from any other government or public bureaucracy. On the other hand, excessive growth in size must have been playing an important role on this problem. As we mentioned earlier when discussing the University's culture, a small, compact, closely-knit university culture seems to have been transformed into a functional-solidarity type culture. It seems that the result of this transformation have created blocks on communication and coordination in the University affairs and activities.

Besides the coordination and communication problems, lack of professional administrators in the governance of the University is perceived another serious issue or problem by the interviewed groups. The growth in size, and, transformation in the university culture seem to have raised an expectation that this University needs to be run more professionally. Collegial administrative style which used to be appropriate for a relatively small campus may no longer be functional in the face of changes over a decade as we presented earlier.

5) Issues or Problems Related to Teaching and Learning (10 %)
(63 %) Quality decline in undergraduate and graduate education
(20 %) Emphasis on memorization (teaching) rather than creativeness
(17 %) Graduates' adaptation problems to society because of being trained in a foreign language, as result being unfamiliar to Turkish terminology in their fields; lack of balance between theory and practice

The fifth set of issues is related to the quality of undergraduate and graduate education. Quality decline in education is the first issue of this category and the following issues are partial answers to quality decline in education. For example, more emphasis on memorization which inevitably is a result of emphasis on teaching than creativeness, graduates' adaptation to the society and to their work environments, lack of balance between theory and practice, and being unfamiliar to Turkish terminology in their fields (because of English instruction) were articulated as primary issues under this category. On the other hand, many observed that education in English has become somewhat ineffective because substantial increase in the student population replaced the METU's traditional elite student body with more traditional student characteristics.

6) Issues or Problems Related to Physical Infrastructure and Facilities (4 %)
(50 %) Insufficient computer and laboratory facilities and instructional equipment
(50 %) Inadequate classroom space and physical deterioration

Finally, the sixth set of issues is related to physical infrastructure and campus facilities. Insufficient computer and laboratory facilities and instructional equipment, inadequate classroom space and physical deterioration of classrooms are observed as the last category of problems for the University. The administration must be aware of this problem, so it is one of the priority in the presidents' agenda to heavily invest in information technologies and renovation of classroom and other related infrastructure of the campus.

<u>2). What is the nature of anomalies articulated in the president's change agenda?</u>

As a result of our analysis of various documents, we have found the following main areas of anomalies that seem to have been shaping the President's change agenda:

1. Emphasis on teaching (proposed strategy: focus on graduate education and research)
2. Emphasis on basic research and relative isolation of the University from industry (proposed strategy: support industry through applied research)
3. Quality decline in various areas such as teaching, faculty, facilities, and research (proposed strategy: enhance quality through effective use of educational technologies, changes in measurement and evaluation system, effective advisory service)
4. Difficulty of finding quality academicians trained abroad because of competition with private universities (proposed strategy: new standards for faculty promotion, developing incentives such as housing, exchange programs with universities in other countries, accreditation of programs at international level, new resources and facilities for research)
5. Excessive growth in size (proposed strategy: reduce the number of entering undergraduate student population)
6. METU's declining leading role (proposed strategy: transform METU into an education, science, technology, culture and art site--Teknokent, to create a site of university-industry partnership)

Some of the main targets of the program stated by the President at the opening speech for 1992-93 academic year are to improve the quality of education through the use of advanced educational technology and equipment, measurement and evaluation systems, and effective use of advisory services; accreditation of educational programs at the international level; to develop new standards for personnel promotion; to attract academicians of high quality educated abroad and to train academicians for other universities in Turkey; to develop international relations through strengthening faculty and student exchange programs; and, to provide resources for strengthening scientific research and to increase the quality of applied research.

The President emphasizes the necessity of a high-quality student body, qualified personnel, convenient physical infrastructure and contemporary administration to produce graduates who are able to compete at international level, to provide assistance to industry and to contribute to science at universal standards (Suha Sevuk, Opening speech for 1992-93 academic year).

As indicated in METU's Strategic Plan for 1995-2000, METU, like other universities in the country, gave much more emphasis to transmission of knowledge (teaching) rather than discovery and dissemination of new knowledge (research) and service. Two important strategic targets set forth in the institution's strategic plan are greater emphasis on graduate especially doctoral education and research function integrated with industry.

The main axis of the 5-year strategic plan is to transform METU "into education, science, technology, culture and art site" (Suha Sevuk, Opening speech for 1995-96 Academic Year). One of the primary targets is to become more distinguished in research which dictates an emphasis on graduate education while decreasing the load of undergraduate education. To reach this target, it is planned to decrease the number of entering students from 3000 to 2500, and to use this excess quota for increasing the graduate student within a 5-year period. Second strategy is to reorganize research in line with the needs of industry, a change from basic research to applied research.

Third target is to strengthen international collaboration in education and research. Because almost half of the institutional resources devoted for research is obtained through international projects, international collaboration in research is a very important strategic target. On the other hand, the reasons for international collaboration in education are to become integrated with those countries in leading positions, to ensure accreditation of educational programs at the international standards, and, to provide METU students with an international quality certificate at their graduation.

Fourth strategic target is to attract qualified students and faculty. To reach this target, it is necessary to improve and enhance facilities and to continue student orientation programs for both undergraduate and graduate students. In order to maintain existing faculty members and

to attract the highest quality of academicians, accommodation problem of primarily young academicians will be solved by a housing project of 600 residence academic village. For this purpose, the construction of the first 168 residences will be started in 1996. Additionally, financial support for strengthening international relations of academic staff will be enhanced.

Fifth target is the construction of *METU Teknokent* (TechnoCenter) which will accelerate scientific and technological development of the country. It is stated that this would be permanent solution to solve the financial and resource problems of the University. Additionally, it will give a new direction to education and especially to research programs. *Teknokent* will comprise multinational or national institutions producing advanced technologies, research centers, and, facilities for recreation, cultural and artistic activities.

3). What are the similarities and differences between the two sets of anomalies?

From the comparison of two sets of anomalies, although there are differences, we detect a great deal of overlappings between the sets of anomalies referred in the president's change agenda and our findings from the interviews of 51 individuals representing various internal stakeholders in the University. First, the two sets are almost identical in pointing out a large student body and excessive growth in student population. Despite the president's change agenda, we have found a number of reflections of this single factor on various dimensions of the University. Size seems to have caused a drastic alteration (although not alone) in the University culture, erosions in student, teaching and research quality, inadequacy of basic services for students, and finally, ineffectiveness in the governance of the University. Second, the two sets of anomalies also refer to an erosion in the faculty quality. Because of competition by financially and administratively better equipped private universities, METU's traditional faculty pool is almost dried out, faculty is getting aged which substantially reduces the University's potential in national and international arenas. Third, both sets refer to the METU's declining role of the leadership in higher learning in Turkey and in the Middle East. The current administration is trying to respond to this problem by bringing an innovation to Turkey through the establishment of a Technical Center within the campus (Technokent or

Technocenter) which will be the first in the country and the largest in the Middle East region to make the University a center of excellence in applied research through relating itself to industry.

Of the differences between the two sets of anomalies, a careful look will easily detect that what is absent in the president's change agenda but articulated forcefully by the interviewees is rather subtle domains of the University: First, a drastic shift in the University's culture and social atmosphere, a dehumanizing learning and work environment which now is identified more with a functional unity of the University community (students, faculty and other personnel) rather than a tightly-knit social and community atmosphere. The latter used to be one of the University's most distinguished aspects.

Second, another set of issues which are not clearly articulated in the president's agenda is related to the University's administrative and governance aspect. University community is complaining about communication and coordination problems in the university affairs, and the lack of student involvement in the institutional decision-making process. The style of administration has not kept up with the drastic changes in the University (size increase and growth), and interviewees desire to see a rather professionally administered University.

Third, as emphasized most by the interviewed persons at the highest frequency rate, the University is seen as excessively relying on public resources which consequently inhibits the University's autonomy. Although it is rather hard for a public institution to break up the vicious public funding pattern, the University may aggressively seek non-public resources as we mentioned earlier in presenting the case of the University of Minnesota's efforts. On the other hand, under a clearly articulated vision, colleges and departments throughout the campus may be provided incentives and motives to engage in resource generating service productions in their areas. Although, Technocenter will help to this purpose (primarily through technical and engineering departments), management and other social science departments are relatively inert in this sense.

4). Does the nature of anomalies warrant a major strategic reorientation in the University? Did the anomalies cause a reorientation in the University?

Organizational change is called transformative or dramatic when more than one variable associated with the core functions of an organization shifts dramatically, that is "extreme and vacillating changes in the strategy, potentially involving a complete change of domain" (Hambrick and D'Aveni, 1988 reported in Burgelman, 1991, p. 253). From this, we may simply say that if an organization engages in major changes in its long-standed major strategies, this change is called a quantum change (Miller and Friesen, 1980), a paradigm shift (Simsek and Louis, 1994), or a reorientation (Tushman and Romanelli, 1985).

Traditionally higher education institutions are said to be carrying out three major functions: teaching, research and service. Any higher education organization making major strategic changes in any one or more than one of these domains simultaneously should be experiencing a transformation or shift. Of the Middle East Technical University, the earlier presented results clearly indicate that the University is in the process of redefining its major strategic paths in various domains concurrently. A shift of emphasis from mainly undergraduate to graduate education, focusing more on research and internationally recognized publication, a planned dramatic reduction in the number of undergraduate student population, enhancement of teaching and learning process through new and innovative techniques, and redefining the role of the University in the larger national and international contexts do call for sweeping changes in the core functions, strategy and structure of the University. Our analysis yields that already presented set of anomalies have caused a reorientation at the Middle East Technical University starting by 1992.

5). What were the causes of anomalies (whether internal or external)?

As discussed earlier, there usually are two sources of anomalies for organizations: Sudden and unexpected shifts in the external environment such as legal, political and technological shifts, and, experiences, deeply rooted beliefs and excessive reliance on tried-and-proved strategies within the organization. As you may recall our case presentation, the environment shifted abruptly for METU in the mid 1980s by the legislative act that allowed the opening of private

universities in Turkey. This single event alone drastically altered the higher education sector which started shaking METU's traditional prestigious position. This impacted the University to a great extent especially in the areas of anomalies related to the recruitment of quality faculty and students. This supports Haveman's findings (1992) that legal changes in the external environment is an important factor that may force organizations to change.

On the other hand, exponential growth in METU student population over a decade was primarily a political decision by governments imposed on universities through the Higher Education Council. Political (governmental) decision-making especially in education is called a patch work in Turkey (Akarsu , 1990). Public institutions are especially vulnerable to these kinds of unexpected legal and political shifts as in the case of METU. As we discussed earlier, we found that much of the anomalies the University has faced today can be attributed to increase in the student population caused by an unsubstiated political decision. This also supports the view of Carroll (1987) that political turmoil may put organizations in a vulnerable position.

Although much of the organizational anomalies at the Middle East Technical University can be attributed largely to external factors, quality decline in teaching and learning, deterioration of facilities, and anomalies specific to administrative and governance of the University seem to be supporting the literature on the paradigmatic closure (Simsek and Louis, 1994) or structural inertia thesis (Tushman and Romanelli, 1985; Miller and Friesen, 1984; Miller, 1992). The University has kept traditional style of governance in the midst of considerable shifts both internal and external (increase in the number of students which has altered the social climate and culture of campus, and, which has made the student services inadequate as well as quality decline in various core functions).

6). If a reorientation is detected, did it coincide with a leadership change or executive succession?

Simsek and Aytemiz (forthcoming) stated that 'discontinuous change comes along with a leader who is both a 'norm breaker and norm setter,' evolutionary period moves through a leader who is most effective managing the affairs within a clearly defined, known and

experienced social reality." With slightly different wording, the literature on transformational change and leadership points to the same logic that reorientation or transformation is usually associated with a "visionary executive leadership" (Tushman, Newman and Romanelli, 1986). On change and executive succession (or leadership), Virany, Tushman and Romanelli report from the literature as follows:

> "These findings suggest that executive secession is typically necessary to introduce new perspectives and new ties to the external environment. They suggest as well that executive succession may be the most appropriate when environments are changing and/or when the organization is experiencing performance declines" (Virany, Tushman and Romanelli, 1992, p. 73).

Change initiative at METU coincides with a new leader or an executive succession as well[5]. President Sevuk who took office in 1992 designed this change initiative. This also resembles very much to our findings at the University of Minnesota, also a public institution, where a new president initiated a restructuring process under the banner of Commitment to Focus (Simsek and Heydinger, 1993; Simsek and Louis, 1994). This may mean that if anomalies exist in an organizational context, even routine administrative succession in public organizations may effectively be used as an opportunity for transformation. Departing from a similar thesis, elsewhere we defined transformational leadership as a dependent variable to the organizational context, that is if there are a set of accumulated anomalies (which usually refers to a crisis), the anomalous context calls for a transformational leader (Simsek and Aytemiz, forthcoming). So, the executive succession and the following change efforts at METU supports a general theme proposed by punctuationalist or transformative view that leadership is an essential component of effective organizational responses to accumulated organizational anomalies.

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[5]Presidents in Turkish universities are appointed by the President of the country among three proposed names by the Higher Education Council. In the initial years of HEC, names of prospective presidents used to be identified by HEC without any consultation to community of the related university. However, since the late 1980s, each university holds a democratic election process through which three candidates who get the highest votes are identified. Then, the university sends these three names to HEC. HEC can change the order of names according to the Council's preferences. Then, HEC sends their ordered list of names as well as the university election results to the President. In recent years, the President usually overrides HEC's choice and appoints the name chosen by the university community.

Discussion and Conclusions

If you recall our earlier discussion under *What is Anomaly*, from an organizational point of view, anomaly refers to a problem that threatens the core functions of an organization which inevitably leads to poor performance. We further stated that, anomalies are like beacons that shed light both to the past and the future of an organization. They are individual problem cases that carry imprints of the past organizational experiences and that also provide hints about where that organization may strategically proceed in the future. We have found supportive evidence for this from our analysis that at least in three major future strategies designed by President Sevuk and his team seem to be reversal strategies, that reversing the excesses of the past organizational strategies: quality decline, size inflation and the decline in the University's leading role. Thus, once anomalies are carefully located and defined, it is relatively easy to develop future strategies, whether they are reversal or totally new "domain offensive" strategies (Zammuto and Cameron, 1985). As we will be discussing in short order, this opens us new avenues for building an alternative planning model in higher education institutions.

By the same token, our findings revealed a strong correlation or a great deal of similarity between the set of anomalies articulated in the President's change package and the set of anomalies derived from our interviews with 51 individuals representing various groups in the University community. To us, what this overlapping means is that recognition of anomalies does not require a magic executive touch, but they are commonly recognized and framed by organizational community quite successfully. This also supports our earlier findings of a similar sort in our analysis of strategic change efforts at the University of Minnesota (Simsek and Louis, 1994).

Plus, as our findings at METU also revealed that community members went one step further, and were successful in exploring more subtle domains of anomalies the administration may unable to see and detect: a dramatic shift in METU's culture and social campus climate which is perceived by many as functionally united, dehumanizing, and detached. Another domain of anomalies which was recognized by the community members is related to the

administration of the University. The results reveal that administrative apparatus and processes do seemingly run behind the growth of the University and intraorganizational transformations as being reflected in such areas as the lack of student services, no involvement of students in decision-making, communication and coordination problems, and, shifts in the University's much appreciated traditional culture. It is our analysis that the administration has concentrated its efforts on relatively easy targets and lacks the power to engage in major remedies or changes in subtle and implicit domains of the University organization.

As we also stated earlier, many interviewed persons were unaware of the details, sometimes even the basics of the President's change agenda. For example, the strategic plan outlining important strategies for the University up to the year 2000 has not been widely disseminated, even the college deans and department chairs have not been formally sent a copy of the plan. From this, we think that the change efforts seem just to be primarily an administrative business rather than a collective, community-wide effort. However, any major organizational change effort must find ways to utilize the alternative world views or alternative framing of problems by primarily relying on the potentials of the community members who are well aware of the problems of their organization as we mentioned earlier. Brown and Duguid explains the importance of this process as follows:

> "Alternative world views... do not lie in the laboratory or strategic planning office alone, condemning everyone else in the organization to submit to a unitary culture. Alternatives are inevitably distributed throughout all the different communities that make up the organization. For it is the organization's communities, at all levels, who are in contact with the environment and involved in interpretive sense making, congruence finding, and adaptation. It is from any site of such interactions that new insights can be coproduced (Brown and Duguid, 1991, p. 53).

Implications for planning in higher education: Our research both at the University of Minnesota and at the Middle East Technical University confirm that emergence and perception of anomalies by the community members do play an important role in organizational change or transformation. It is simply the case that "...organizations change in response to perceived problems" (Amburgey, Kelly and Barnett, 1993, p. 54). Human thinking and problem solving as well as organizational cognition and problem solving do proceed through existence and recognition of a problematic situation. Our research in two

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entirely different higher education institutions supports this view as our findings pointed out a close association between the main tenets of an ongoing restructuring efforts and the nature of anomalies drawn from the perceptions of the community members in two public institutions.

Then, we may have a simple model of a great potential to be used in higher education institutions to plan and to manage change. As we have outlined throughout this paper, a simple anomaly-based change model may effectively be a substitute for expert-dominated, time consuming and highly complex planning models such as strategic planning. By doing so, administrators of higher education institutions would get valuable hints about their organizations since anomalies mirror both past and the future.

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