

Analysing a Theory of Adaptive Structure

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ABSTRACT:

The Encyclopedia of Management Theory features Adaptive Structural Theory (AST) prominently as a key paradigm for comprehending the complex interaction between organizational transformation and technology. An overview of adaptive structural theory, its historical evolution, essential ideas, and contributions to clarifying the dynamic interaction between organizational practices and technology uptake are provided in this abstract. The pioneering work of sociologist Anthony Giddens in the 1980s may be credited with the development of adaptive structural theory. AST studies how the duality of structure and agency impacts the acceptance and implementation of technological advances inside organisations, building on the principles of structuration theory. Fundamentally, the Adaptive Structuration Theory acknowledges that technology is not only an outside force that is imposed on organisations, but rather a socially embedded phenomena that organizational members can perceive, negotiate, and modify. People often refer to organisations as "structuration systems," in which rules, standards, and routines serve as the framework for human behavior, which then reproduces and changes these structures. According to AST, the adoption and use of technology involves a cyclical process of structuration in which organizational practices and technological advancements interact in a continuous and dynamic feedback loop. This interplay between technology and organisations results in the formation of novel organizational processes, the introduction of new practices, and the reorganization of current structures.

KEYWORDS:

Adaptive, Organizational, Structural, Structuration, Technology.

I. INTRODUCTION

Within the Encyclopedia of Management Theory, the Adaptive Structuration Theory (AST) is a fundamental and influential concept that provides important insights into the intricate interaction between organizational transformation and technology. This introduction gives a general overview of adaptive structural theory, tracing its historical evolution, outlining its essential ideas, and highlighting its contribution to our comprehension of how organizational practices are impacted by technology and vice versa. The pioneering work of sociologist Anthony Giddens in the 1980s may be credited with laying the foundation for adaptive structural theory. Giddens provided a novel method for investigating how technology and organisations interact, building on the principles of structuration theory. Recognizing that technology is a socially embedded phenomena that organizational members may understand, negotiate, and adjust is at the heart of AST. Technology is not seen as a neutral external force operating on organisations [1], [2].

The core idea of the Adaptive Structuration Theory is "structuration," which asserts that organisations are not only passive objects impacted by established structures or laws. Organisations are instead seen of as "structuration systems" whereby rules, procedures, and regulations serve as the governing frameworks for human behaviour. A dynamic interaction between agency and structure results from human acts that simultaneously support the replication and alteration of these same systems. According to AST, organisations undergo a cyclical process of structuring as they acquire and use technology. Technology and organisational practises engage in a continual feedback loop in which both impact and change one another. Technology creates new opportunities and limits, causing fresh practises to arise

and preexisting ones to be modified. Organizational procedures then have an impact on how technology is used and configured, paving the way for more modifications and changes. The term "adaptive structuration," which describes the proactive and adaptable ways in which organisations and people modify their practices in response to technological developments, is a key idea in the adaptive structuration theory. This flexibility is essential for the effective adoption of technology and the realisation of its potential advantages inside organisations. The socio-technical viewpoint that AST provides on organizational transformation acknowledges the dynamic interaction between technology and organisations. Technology is seen as an essential, interrelated aspect of the larger organizational environment rather than as a solitary tool or solution. It is influenced by the social practices and conventions inside the organisations and has an impact on how organizational members collaborate, communicate, and make decisions[3], [4].

Wide-ranging applications of adaptive structural theory are possible. In-depth understanding of the elements driving technology adoption, the function of leadership in promoting technological practices, and the effects of technological changes on organizational culture and identity are all achieved via the use of AST by researchers and practitioners. As we begin our investigation of the Encyclopedia of Management Theory's entry on Adaptive Structural Theory, we find a useful framework for comprehending the dynamic interaction between technology and organisations. AST gives us a thorough grasp of the socio-technical processes that support effective technology adoption by embracing the co-evolution of organizational practices and technology. In a time of lightning-fast technology development, adaptive structural theory provides essential insights for overcoming organizational change issues, fostering innovation, and fostering flexibility and resilience within organisations.

II. DISCUSSION

Information and communication technologies (ICT) are used and implemented in groups and organisations, according to the adaptive structuration theory (AST). According to the AST theory, which was put out by Marshall Scott Poole and Gerardine DeSanctis, the effects of ICTs on group and organizational processes and results rely on the structures built into the technology as well as the structures that develop when users try to adapt it to the tasks at hand. The theoretical foundation of AST may be linked to a variety of structuration theory-focused academics, including Anthony Giddens. The spirit and features distinction, appropriation, and an introduction to structuration theory are some of the ideas contributed by AST that are covered in this section. The elements that influence structuration are then outlined. Lastly, the theory's importance and vital discoveries and debates are taken into consideration[5], [6].

Fundamentals

However, it has also been used to analyse enterprise level systems, geographic information systems, electronic billing systems, context aware applications, and mobile systems. AST was first utilised in the research of group decision support systems. It has also been used in non-ICT contexts, such as leadership, virtual teams, standard development, and innovation adoption. According to AST, it is better to understand social systems, like as groups and organisations, in terms of how their members actively organise behaviours like decision-making. A social structure is produced and reproduced via the appropriation of generative norms and resources by its members. This process of structuring is known as structuration. The contrast between system and structure is the basis for this term. A system is an identifiable pattern of interactions between individuals, such as members of a team or organisation. The rules and tools that system participant's use in their interactions and activities to produce the system's pattern are referred to as structures. Although the word "structure" is itself a valuable reification that is used for analytical reasons, structures are not immediately visible. Structures are dualities because they serve as both the activity's channel and their result. Members are enacting and maintaining these structures while also making them a part of the system's ongoing organisation, or reproducing them, as they incorporate rules and resources from tasks, norms, ICTs, and other sources into the activities and interactions that make up the social system[7], [8].

According to AST, the impacts of an ICT on group and organisational processes and results rely on both the inherent structural potential structures of the technology and the emergent (adaptive) structures that develop when users engage with it over time. Spirit and characteristics are the two components that AST separates from ICT structures. The spirit of a given collection of structural features is the overall intention with respect to the values and purposes behind that particular set of structural features. Structural features are specific sorts of rules and resources, or capabilities, supplied by the system and are represented in the physical ICT artefact. The coherence principle that keeps an ICT's ensemble of structural elements together is known as its spirit. The members' consensus is that the spirit of an ICT offers normative standards for implementing the ICT, an interpretative framework for understanding the ICT and its results, a manual for "filling in" the ICT's missing details, and a certain amount of control over how the ICT is used.

The ideals of cooperation and effective resource usage, for instance, may be promoted by an online project management system. This ethos, which is expressed in the system's general architecture as well as in training and online support, influences how users see and utilise the system. Rules and resources are integrated in structural elements when people interact with and utilise ICT. A discussion tool may offer an area for idea sharing that combines collaborative processes, such as brainstorming, whereas a budget tracker tool in a project management system might have rules for accounting and resource allocation. Ideally, the structural characteristics and the spirit are in harmony, however this is not always the case owing to technological constraints, implementation flaws, and unintended slippage. For instance, the budget-tracker application may provide comparisons of project budgets that are intended to be educational but unintentionally spark disputes among team members, decreasing cooperation [9], [10].

Through structural processes, which take place when members of group and organisational systems appropriate them in continuous activities, structures including spirit and features are formed and reproduced. When individuals of a social system adopt structural elements into their continuing operations, they are aptly said to be "making the structure their own." The process of appropriation entails choosing, combining, emphasising, and de-emphasising various structural potential components of a system. For instance, a project team could utilise certain parts of the budget tracker but disregard others, essentially rendering the latter's rules and resources "inert." Each appropriation develops "structures-in-use" specific to the group and organisation that direct system interaction and activity. By combining the guidelines it contains with some of the guidelines members employ in "offline" talks, a team may be able to appropriate the discussion tool. The outcome is an innovative structural ensemble that is designed for the particular circumstance in which it is used. Assigned tasks, organisational norms and cultures, professions, and other social institutions are external structures that are incorporated into structuring processes.

Additionally, they produce emergent structures that include ICT outputs such as lists and budget reports. During its interactions, the group or organisation develops new guidelines of ideas, norms, and resources. As an example, a project team may create an additional spreadsheet to the budget tracker that is suited to the organisational strategic objectives. This spreadsheet contains emergent structures, and if they are valuable enough for other teams to adopt them, they become a part of the organisational system's current structural potential and may be used and modified in the future. The members' interpretation of an ICT's spirit affects how it is appropriated. For instance, if team members decide that collaboration is less important than the effective use of resources for the project management system, their use of the system, the external structures they employ, and the structures-in-use they create and keep will be different from what would have happened if they had chosen to emphasise collaboration.

The specific procedures involved in employing ICTs in micro level contact have been determined via a series of appropriation actions. These include proposals for specific uses or interpretations of ICT, as well as proposals to merge ICT with other frameworks. Additionally, "met structuring" activities might guide or channel appropriation activities. It is possible to determine overall global appropriation of the ICT by analysing appropriation move sequences. The degree to which it maintains coherence between spirit and characteristics is a crucial aspect of appropriation. An ironic appropriation happens when

structural characteristics are employed in ways that are in opposition to the ICT's spirit. A faithful appropriation happens when the usage of structural aspects is consistent and in line with that spirit. Ironic appropriations may be harmful in certain cases, but they can also be innovative and better uses of ICT. The use of ICTs for instrumental objectives, such as task, process, power, sociality, and exploration, is another facet of appropriation.

The total appropriation of an ICT is characterised by a number of broad characteristics. The quantity and frequency of feature uses may be used to gauge degree of usage. How well members comprehend the ICT's functionality, features, as well as its spirit, is referred to as their degree of knowledge. The degree of user agreement on appropriation affects how easily and consistently the ICT is used, as well as how effective it is at promoting desired outcomes. Conflicts over the ICT are likely to undermine effectiveness and, if not handled constructively, could result in power struggles. Finally, attitudes towards a technology, members' familiarity with it, respect for it as a helpful tool, and the challenge it presents to work hard and succeed may all be used to describe appropriations. The structuring process is influenced by many sets of variables. The most prominent ICT characteristics are their standardisation (the degree to which the ICT is well understood and accepted in the community of which the organisation or group is a part), sophistication (the level of intelligence built into the ICT), restrictivity (the degree of freedom the user has in applying the ICT), and complexity. Ask qualities, such difficulty and complexity, and system environment characteristics, like dynamism and antagonism, make up a second set of external elements. Structure is also influenced by external elements including broader technical developments, interorganisational and intergroup interactions, and social institutions. Aspects of an organisation or group's internal structure, such as its culture, norms, and leadership, come in third.

Similar to the structural potential of ICT, these three categories of parameters are sources of structure, but they only account for a percentage of the whole constellation of structural elements. Therefore, in the classic causal sense, these elements do not determine group and organisational processes. Only those structural components that system members intentionally or unintentionally add to the mix of structuring activities have direct impact on the system. The end result of the structuration process include outcomes like effectiveness, efficiency, commitment, learning, and cohesiveness. Additionally, brand-new structures that affect future interaction may emerge. For instance, after using the budget tracker, a team may want to add a rule stating that it should consider numerous budget scenarios before making important financial choices, altering previous practises. The group and organisation may then adopt these unique structures in the future.

Importance

A number of generalizations that have implications for the validity and usefulness of the framework as a whole have been produced by the enormous body of research utilising AST, including the following:

1. Different uses of the same ICT by various individuals and organisations have been noted in research, which is consistent with the hypothesis. It has been shown that how ICT is used by groups and organisations influences a variety of outcomes, including the quality of decisions made, member satisfaction, and future desire to adopt ICT.
2. A twofold contingency underlies the link between ICT and outcomes. The group or organisations will produce better results to the degree that the ICT is suitable for the job at hand and to the extent that it is consensually appropriated by members in a way fit for the task.
3. Users often struggle with and oppose utilizing increasingly advanced technologies, but if they do so in a way that is in keeping with the ICT's spirit as well as the requirements of the job and context, good results follow.

Some have criticized AST for being extremely "positivistic" and so incompatible with Giddens' interpretive-critical methodology.

This critique may be linked to the theory's development as a bridge between quantitative and interpretative inquiry methods, which emphasizes a priori concept definition, attention to measurement validity, and the early examples of AST research. However, a few of interpretative research and even a

few critical evaluations have used AST in addition to quantitative methodologies like laboratory trials and structural equation modelling. Several topics are now up for discussion. One is the sort of agency and whether ICTs can act as any kind of agents. The second is the way that small-scale structural changes add together to produce a more widespread adoption of ICTs. Practically speaking, AST has produced descriptions and explanations of the mechanisms by which certain structuring processes take place as well as tactics for controlling ICT installation. For instance, according to AST research, broad heuristics that aid users in understanding the ICT as a whole are preferable than training in particular when it comes to user assistance (if the technical support is sufficient). Learning to "read" the processes of adaptive structuration so they may steer it in useful directions is an important competency for ICT managers.

III. CONCLUSION

The Adaptive Structuration Theory (AST) is a major and prominent theory that clarifies the complex interaction between organisational transformation and technology, according to the Encyclopaedia of Management Theory. This summary of AST's main contributions and consequences emphasises its flexible view of technology adoption and its influence on organisational practises. Anthony Giddens' adaptive structural theory offers a cutting-edge method for comprehending how organisational dynamics are impacted by and modified by technology. By seeing technology as a socially embedded phenomena open to interpretation and adaption by organisational members, AST fundamentally contradicts the conventional understanding of technology as an external force operating upon organisations. The core of AST is the structuration notion, which emphasises how agency and structure co-evolve within organisations. People often refer to organisations as "structuration systems," in which human behaviour shapes and transforms organisational structures. This interaction between agency and structure creates a dynamic feedback loop that affects organisational procedures and the use of technology.

The concept of "adaptive structuration," which AST emphasises, emphasises how important it is for organisations and people to modify their practises in response to technology advancements. This flexibility is essential for effectively integrating technology into organisations and reaping its potential advantages. The socio-technical component of organisational change is acknowledged by adaptive structural theory, which offers a comprehensive view of technology adoption. Technology is not seen in a vacuum; rather, it is viewed as a crucial component of the organisational framework that influences and is impacted by member participation, decision-making processes, and communication patterns.

Practically speaking, AST offers insightful information for researchers and practitioners to comprehend the elements that encourage or inhibit the adoption of technology, the part that leadership plays in influencing technological practises, and the broader effects of technological changes on organisational culture and identity. Adaptive Structural Theory, which provides a dynamic and nuanced understanding of the influence of technology on organisational development, emerges as a key framework within the Encyclopaedia of Management Theory. AST provides us with thorough insights to traverse the difficulties presented by technological breakthroughs, stimulate innovation, and increase adaptation and resilience inside organisations by embracing the co-evolution of organisational practises and technology. The use of adaptive structural theory provides a road map for embracing change proactively, using the promise of technology, and promoting a culture of constant adaptation and learning as organisations continue to struggle with the fast speed of technological advances. Adaptive Structural Theory continues to be an essential instrument for improving management theory and practise in an ever-changing corporate environment because of its ongoing relevance and wide-ranging ramifications.

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