

A Framework to Understand E-government Strategy Development Using Actor Network Theory

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Abstract - The potential benefits of e-government are not easily manifested due to its high implementation failures. These failures partly come from inappropriate assumptions used to conceptualize its nature and implement it as a socio-technical entity. The paper argues that Actor Network Theory (ANT) offers framework and ontological foundations to formulate strategy for developing e-government. The strategy flows from its four moments of translation framework and its assumption about the relationship of social and technical entity, agency, and power. The proposed strategy is directed to help decision and policy makers as well as developers of e-government to better implement it.

Keywords- e-government; Actor Network Theory; strategy; developing country.

I. INTRODUCTION

E-government development project has never been an easy task. In many developed countries, e-government failed to meet the initial promise to promote better public participation and improve administrative efficiency (Bolgherini, 2007). But in developing countries, e-government development faced more fundamental problems that include the lack of appropriate technological infrastructure, limited financial and human resources, and the incompatibility to their political, social, as well as the cultural aspect (Nguyen & Schauder, 2007; Imran & Gregor, 2007). These might explain why 85 % e-government initiative in developing countries failed (Heeks, 2003). Therefore, Ciborra (2005) argues that e-government is not suitable for developing countries and even Fife and Hosman (2007) suggest instead spending money for “bread” rather than for “broad-band.”

This approach bring consequence that e-government operates in the context of interconnected relationships among various stakeholders that form a networks. From a strategic viewpoint, these relationships affect the nature and the outcome of the systems actions and are their potential sources of efficiency and effectiveness. Therefore strategy for e-government development is then about ‘identifying the scope for action, within existing and potential relationships and about operating effectively with others within the internal and external constraints that limit that scope’ [15].

Further, Johanson and Mattsson [20] argue that ‘strategic action’ in the literature on strategy usually concerns efforts by one actor to influence relationships with an outer environment.

In this respect, Actor-network Theory (ANT) seems to offer an appropriate framework for strategizing e-government for at least two reasons. First, by perceiving e-government as a network of diverse actors or stakeholders, ANT provides framework and vocabulary on how to identify actors and their relationship that affect its performance. Second, ANT offers mechanism to understand why a network becomes stable or unstable. This mechanism is very important since it can be used by actor to influence relationship within the network. Therefore it relates to strategic action as notified by Johanson and Mattsson [20].

One relevant question is then how effective can ANT be used to develop strategy for e-government development. Answering this question will have significant contribution as research on e-government strategy was developed from resource based view in which its formulation pays less attention to the process of reengineering (e.g. [9]). In addition, strategizing e-government using ANT may result context-sensitive strategy as ANT holds assumption on the nature and context of the relationship among actors within network. This assumption in turn will offer more appropriate conception of agency, power, and action that are heavily involved in e-government development.

II. BRIEF LITERATURE REVIEW

A. E-government development Strategy

The most common proposed strategy to develop e-government is to focus on assuring bureaucratic reform. Since such reform is difficult then it should be carried out by significantly incorporating variables that are within the social and political context [27]. In other words, developing e-government should consider their respective characteristics and conditions [9]. For example, “*self-reliance*” has been identified to be an effective strategy in much successful e-government development in India [26]. Another strategy is the stakeholder participation since

understanding between the roles of government agencies and its citizen created a more profound impact than technology [1], [2].

Strategy is systematic and long-term approaches to problems [13]. It is based on the knowledge of the field and the available relevant resources. This made most formulated strategies for developing e-government are based on resource based view that focus on requiring hard as well as soft resources such as ICT infrastructures, legal provisions, user readiness, and financial support. This strategy formulation approach might not be appropriate since the core of e-government development is to make sure that all those resources interact positively toward its objective [17]. Therefore, it should be directed to manage the relationship all involved elements rather than solely providing them.

B. Theory on Strategy Formulation

There are many ways in defining strategy but it is always about conscious set of guidelines that determines decisions into the future [24]. In management theory, Chandler [8] defines strategy as “the determination of the basic long-term goals and objectives of an enterprise, and the adoption of courses of action and the allocation of resources necessary for carrying out these goals”. Based on this definition, strategy has three main properties, (a) explicit, (b) developed consciously and purposefully, and (c) made in advance of the specific decision to which it applies. In other word, strategy is simply a “plan”. For Mintzberg [24], strategy in general and realized strategy in particular, is defined as a pattern in a stream of decision. When a sequence of decision in some area exhibits a consistency over time, a strategy will be considered to have formed.

Another approach for strategy formulation [25] suggests the use of constructivist methodology. Constructivist perspective offers some benefits compared to using realist perspective. First, it will facilitate a more context-driven strategy formulation. It is especially important to the diverse context of e-government setting and environment. Second, since constructivist methodology works at the level of assumption rather than at the level of technique, it facilitates researcher to bring those assumptions into the foreground of the research where other perspective are silent on. It will make strategy formulation localize the result that in turn will help researcher and practitioner avoid overgeneralization [25].

From constructivist perspective, ANT (Actor Network Theory) perhaps provides an appropriate foundation for formulating e-government strategy development. ANT is classified to embrace constructivism [5], therefore there is no inconsumable epistemology to use ANT for strategizing e-government from constructivist perspective. As ANT deals with some sociological aspect of the phenomena and it

has relativistic epistemology then it could produce belief of improved “truth” or competence in reference [7].

C. ANT and Strategy Formation

Some specific characteristics of ANT need to be mentioned to lay foundation in using it as a framework for strategy development.

- a) ANT perceives social reality as a complex network of relationship that always involves human and non-human entities [23].
- b) It holds radical assumption that neither human nor non-human should be given a privilege in determining the stability of certain social reality.
- c) It rejects essentialism and instead embraces “relational” point of view by stating that both human and non-human entities are just an effect or outcome of a network (in relation to one another) [10].
- d) ANT refers all entities (human or non-human) involved in this complex network of heterogeneous element as “actors” or “actor-network” [22].
- e) It labels a stable actor-network as a black box so its analysis may focus only on its inputs and outputs. The black box could be opened up and analyzed as an actor-network by tracing all its relevant actors and their relationship [24].

In opening up a “black box” of reality, ANT uses the notion of translation [6] to make sense why certain social reality finally becomes stable/unstable over time. Translation could be described as a process in which actor(s) mobilizes resources or another actor-network to form allies that result in a stabilized actor-network. The translation process involves four moments (phases), namely:

- a) *Problematization*. In this moment one or more key actors define the nature of the problem and the roles of other actors to fit the proposed solution. The solution is offered in such a way that all actors that participated will be subjected to some centralised control mechanism labelled as an “obligatory passage point (OPP).”
- b) *Interessement*. Here all actors identified in the first phase are given specific roles and identities and the strategies that need to be acted upon which will attract them. This attraction is the interessement device that will lead them to the next phase.
- c) *Enrolment*. The success of the strategies related to the interessement device will result in the enrolment of actors to establish a stable network of alliance. However, the stability of this alliance depends on the negotiation process to define their roles in the network.
- d) *Mobilization*. Once the proposed solution gains wider acceptance, then an even larger network of absent entities are created through some actors acting as spokespersons for others.

Meanwhile from strategic management literature, strategy formation includes two steps namely strategy formulation and strategy implementation. Strategy formulation includes steps of :

- a) Doing a situation analysis of both internal and external, micro-environmental and macro-environmental.
- b) Crafting vision statement (long term review of a possible future), mission statements (the role that the organization gives itself in society), overall corporate objectives (both financial and strategic), strategic business objectives (both financial and strategic) and tactical objectives.
- c) Suggest a strategic plan which provides the details of how to achieve these objectives.

Whereas strategy implementation involves steps of:

- a) Allocation of sufficient resources (financial, personnel, time, computer system support).
- b) Establishing a chain of command or some alternative structure
- c) Assigning responsibility of specific tasks or process to specific individuals or groups.
- d) Managing the process which includes monitoring results, comparing to benchmarks and best practices, evaluating the efficacy and efficiency of the process, controlling for variances and making adjustments to the process.
- e) When implementing specific programs, this involve acquiring the requisite, developing the process, training, process testing, documentation and integration with legacy processes.

Contrasting these steps of strategy formation with ANT, it is apparent that ANT translation process could be related to them. All steps in strategy formulation could be associated with the problematization stage and all steps in strategy implementation relate to intersement, enrolment and mobilization stages. However, ANT translation process views the steps from network perspective. Thus it gives more attention to systematic steps to create and stabilize a network.

III. METHODOLOGY

The analysis will be carried out as follows. Based on some basic features of ANT the paper will propose a strategy for e-government development. The strategy flows from some assumptions made by ANT in understanding the phenomena as a network of relationship among actors. Therefore, the proposed strategy will be based on the assumption how to make this network stable and grow dynamically. As ANT offers the four moments of translation as a framework to understand network stabilization, the

proposed strategy will also be based on this translation process.

The proposed strategy could be eventually used to evaluate the development of e- government projects (cases). Each case may be described from the proposed strategy perspective to justify its strength. Based on these descriptions, researcher may conclude the effectiveness of using ANT as framework for strategizing e-government development.

IV. THE PROPOSED STRATEGY FOR E-GOVERNMENT DEVELOPMENT

The starting point to formulate strategy using ANT is from its assumption that e-government is a network of diverse entities in which the role, interest and the capacity to act is the result of their relationship. These entities (human and non-human) are equally important in stabilizing the network. The successful development of e-government then depends on the effectiveness to make this network stable or even grows. Its stability depends on how to maintain and develop relationship among involved actors. ANT offers the four moments of translation as framework to understand the stability of this network. The network will tend to be stable and developed if there is actor (s) able to formulate e-government problem and solution in such a way will interest all participating actors. To do so there should be some attractive programs that give benefits to all actors. Those interested actors will then enroll to the network. The network will grow and expand if the relationship among actors could result some spokesperson that can represent the rest to negotiate with other actors for aligning their interest.

Using actor-network perspective, the proposed strategy for e-government development is:

1. Formulating realistic and context-sensitive problem(s) and objective(s) by considering the potentiality of involved actors/stakeholders.
2. Identifying all possible related actors, their interest, and their role in the network
3. Proposing a solution that could give benefits to most participating actors
4. Designing and implementing attractive programs to strengthen the relationship among actors toward solving the formulated problem that trigger representation process along the project development.

This proposed strategy is in line with the recommendation that all government agencies should create incentive for all involved actors [18] and with relational strategy in which building and maintaining relationship of actors is the core of the strategy [11]. Moreover, the most important factor when meeting the challenge of e-government implementation is to develop a strategy that is

realistic, particularly in terms of the scope and size of the programs [32]. It is especially important since e-government strategy is rarely seen as a problem of institutional design, that is, in terms of actors, their interests, their power bases and resources, their relationships and their conflict and compromises [3]. Though the emphasis is on the relationship but here resources, activities and actors are involved since relationship is the result of an activity involving some actors using their resources.

V. CONCLUDING REMARK

The ontological stance to view e-government as an actor-network entails the concern of e-government development is to stabilize the identified network. ANT offers four moments of translation as framework to understand how such stabilization process takes place. The stage to formulate problems and objectives has provided framework to e-government designer not only to formulate goals but also to realize that goals will only be reached as a result of competing interest from many actors involved in a complex network. To enroll all involved actor toward the defined goals, e-government designer should formulate and implement some attractive programs. These programs will only be effective if they could direct actor to resolve his/her obstacle toward goals. The enrolled actors could eventually be mobilized through representation mechanism. Certain actor will represent the rest during the stabilization and expansion of the network.

As introduced in the first section, the problem to answer in this paper is how effective ANT could be used as a framework to formulate strategy for e-government development. The foundations center around the assumption that e-government is a network of relationship involving diverse actors and their interest. The proposed strategy that pays much attention to manage these relationships starting from the formulation of the problems and objective to the definition and implementation of some attractive programs maybe approved as an effective strategy.

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