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Design analysis of the standard necessity examination model

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ABSTRACT

In a real businness environment, a lot of kinds of standards exist. Some of the standards are widely used, but on the other hand, some are not used at all. This causes not only waste of resources but also avoiding growth of industries.
This paper shows the structure of standard and gives the framework to develop effective standard with Drama Theoritical approach.

Keywords: standard, ERP, e-commerce, Drama Theory

1. STANDARDS IN REAL BUSINESS ENVIRONMENT

1. 1. Standards are often not useed at all

In a real businness environment, a lot of kinds of standards exist. Some of the standards are widely used, but on the other hand, some are not used at all.
For instance, XML version 1.1 has been established standard. But many users still use XML version 1.0. Or many kind of e-commerce message were introduced its market, like ROSSETANET standard. Only limited number of company is using it.
Two reasons why the standard is not used are thought. [1][8][10]

1. The area which is targeted of the standard doesn't need the standard.
2. The contents of the standard is unpractical.

Especially, the first factor is critical. Generally, it needs a lot of costs to a standard design. If the area where the standard is not needed exists to begin with, the labor that settles on the standard to the area is useless.
Avoiding this uselessness is a loss of social resource.
I will discuss second issue in the other paper. Because this is related to the standard development process.

2. THE MODEL

2. 1. Elements of the model

The size of the gain that the stakeholder who is participating in the area where a standard decision is examined
is expected from the standard is assumed to be an expected value to the standard. In this case, it is thought that the regulating function works so that the gain should not incline to a specific stakeholder.
The structure of standard development is composed with many stakeholders. They will argue mutually and make negotiations for reaching one solution. This is one of typical structure of poli-agent decision making problem.
Drama Theory is widely used for dispute mediations. This is the reason why I adopt Drama Theory for standard development process.

2. 2. Drama Theoretical Approach

The process is modeled by using the drama theory. When each stakeholder negotiates for the standard, and the solution exists as a result, it thinks a standard design to be worthy.

2. 3. Framework of Drama Theory

First, the process of Drama Theory is shown in figure 1. [6][6][7]

Scene setting

Clarify who is the character of this drama situation. *Character* is the word used in Drama Theory. Character sometimes has subcharacter. In this stage, the *goal* is also need to clarify.
Character is identified as the following aspects,

- Options
- Outcomes
- Preferences
- Positions
- Fallback
- Threatened Future

Option is the alternative of character. Each character has its option to act. And *threaded future* is the feature of Drama Theory. Each character express its threaded

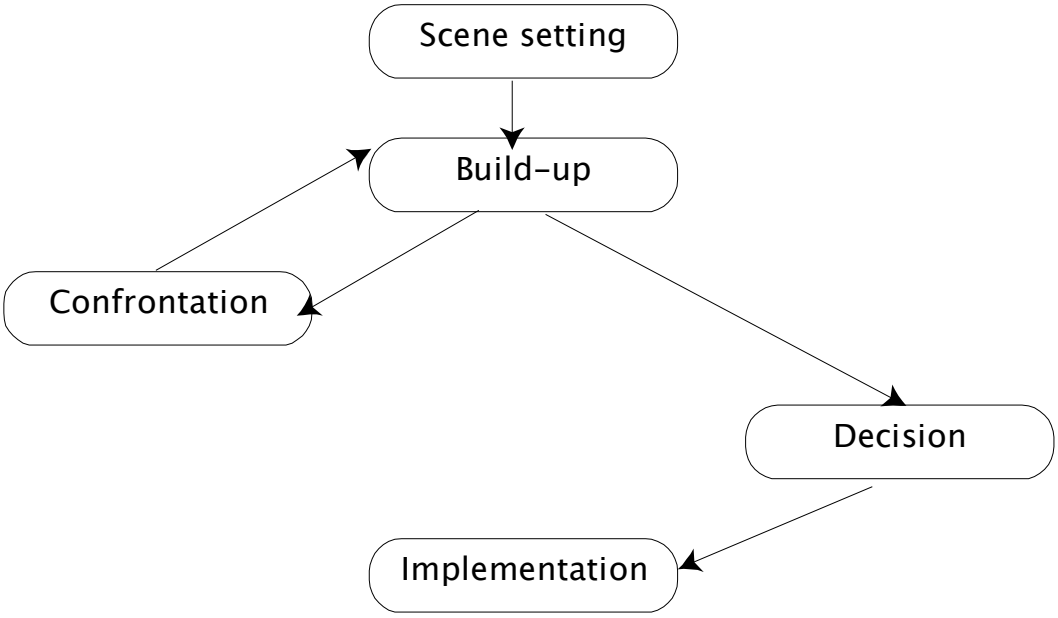

Fig1,Framework of Drama Theory

future to control another characters.

Build-up

At the next stage, each character express their position and fallback action to the other characters.
Characters will assess their position's compatibility. They will try to make coalitions. Through this stage, dilemmas are clarified. Some change would be need to agree one solution.

Confrontation

At the confontation stage, characters will make strategies to manage their dilemmas. The plan is composed with sequences of action. Each action is communication with message or interaction.
This stage is the main part of Drama Theory. *Confrontation analysis* is discussed in the next section.

Decision

After confrontation, each character will decide their action. Some will change their action or fallback action or threaded future. They can make negotiations again if they need.

Implementation

Once characters agree to move to next stage, the stage is called implementation. Each character will take irreversible action. No one knows the result of their actions. After this stage, new scene setting will be performed if necessary.

2. 4. Confrontation Analsis

Confrontation and dilemmas are indispensable concept of Drama Theory[2]. There are six (and only six) dilemmas in the Drama Theoretical situation[3]. Understanding each dilemmas' characteristic will help understand Dra Theory.

Six dilemmas

As I mentioned below, there are six dilemmas in Drama Theoretical situation as following.

1. Threat
2. Persuasion
3. Rejection
4. Positioning
5. Co-operation
6. Trust

Dilemma of threat is happen when one's threaded future can not brings low expectation of the other.
Dilemma of persuasion is generated when one can not give any pressure to the others. Under this dilemma, one's threaded future is accepted the others.

2004 Rank	Company	Market Share 2003	Market Share 2004	Market Share 2005 (est.)
1	SAP	39%	40%	43%
2	Oracle	12%	10%	19%
3	PeopleSoft	13%	12%	0%
4	Sage Group	4%	5%	6%
5	Microsoft	3%	3%	4%
6	SSA Global	2%	3%	3%
7	Geac	2%	2%	2%
8	Intentia	2%	2%	2%
9	Lawson	2%	2%	2%
10	Infor Global Solutions	1%	2%	2%

Table1, ERP market share(AMR Research, June 14, 2005)

Dilemma of rejection is the situation for the one when he/she faces the others' threaded future is preferred than his/her position.
Dilemma of positioning will occur when he/she faces the others' position is preferred than his/her position.
Dilemma of co-operation is the situation that one can not make the others believe one will co-operation.
Dilemma of trust is the opposite side of dilemma of co-operation.
To manage these dilemmas, we need to introduce confrontation analysis. This can be said that pre-play communication and its result.

3. THE FINDINGS

When we introduce this Drama Theoretical analysis to standard development process, how they can lead solutions. And what kind of dilemmas will happen.

3. 1. Scene Setting in Standard Development Process

We can assume these two characters in this situation.

Chracter A: I want to use standard otherwise I will stop business to you.
Chracter B: I want to use my own way of business otherwise I will stop business to you.

3. 2. Confontation and its Analsis in standard Development

Dilemma of threat will occur when chracter A or B's threaded future can not brings low expectation of the other. But in this situation, this can not be happen.
Dilemma of persuasion is generated when chracter A or B can not give any pressure to the others. But in this situation, this can not be happen, too.
Dilemma of rejection is the situation for the one when he/she faces the others' threaded future is preferred than his/her position. This can be happen when B's own way is good for A. In this case, standard will not be used. Or the power of B is strong enough to give up using standard.
Dilemma of positioning will occur when he/she faces the others' position is preferred than his/her position. This also occurs when B's way is attractive for A than standard. But in real situation, characters are many. So each character's own way is kept at a distance.
Dilemma of co-operation is happen when A is not convinced of a standard necessity. So when propose to use standard, you must understand its importance.
Dilemma of trust is easily to happen. This can avoid through good standard development and good standard support.

3. 3. Conditions when standards are needed

We can find standard is one of the function to coordinate each characters. And we found standard is not used in the following conditions.

- It is easy to make the standard hackneyed in the market where the technical improvement is violent.
- Power balance of characters are disproportion. Only stronger side of opinion accepted in the confrontation analysis.
- Characters do not convinced the importance of standard.

	Industry Requirements Teams	Business Requirements /Task Groups	Technical Development Teams	Technical Requirements Groups
Development	- Traceability - Upstream - RDD - DSD - Fresh Foods - Foodservice	- Align - Plan - Order - Deliver - Pay - GDSN - GPC	- AIDC - EANCOM - EPC - GDD - UML - XML	- Information Flow (ITRG) - Physical Flow (PTRG)

Table2, Organization of GSMP

But to believe the others action, we found standard can help them believe.

4. THE EXAMINATION IN REAL ENVIRONMENTS

Afterwards, the model which proposes the example of the standard's functioning in an actual business and the function example is handled and analyzed. As a result, the validity of the model is verified.
Two example will be shown in the following sections.

4. 1. ERP --- standards are not needed

In recent years, ERP, Enterprise Resource Planning, tool is widely introduced many companies. There are many ERP package systems in the market and most of them cover entire business of companies. Standard will bring end users freedum of choice or easy understand ERP system itself. Standard also help third party system integraters to establish wide variety of ERP install business.
But actually, ERP venders are decreasing year by year (table1). One company was merged by another company. Or some company stop selling their product.
As a result, in the ERP tool market, the standard doesn't exist. As for it, the content executed with another enterprise exists in the system that shuts in each enterprise and and are gotten.
If some standard exists in ERP market, we fill find no one use it[9].

4. 2. E-commerce --- standards are needed

In the E-commerce, the standard exists. And it is used widely.
The failure of designing standard can be avoided by applying the above-mentioned result of review in the area where standardization will be examined in the future.
For example, in the CPG, consumer packaging goods, industry, the organization named GS1 plays very important roles to make and spread standards[4].
They are world wide organization. GS1 established GSMP, global standard management process, as standard developing organization. In GSMP, not only GS1 members but also many companies send their employees to discuss standards in various team inside GSMP(table2).

REFERENCES

[1]Belleflamme, P., 2002, Coordination on Formal vs. De Facto Standards: a Dynamic Approach, European Journal of Political Economy, 18(1), 153-176.
[2]Bennett, P., 1998, Confrontation analysis as a diagonostic tool, European Journal of Operational Research, 109, 465-482.
[3]Bryant, J., 2003, The Six Dilemmas of Collaboration, John Wiley & Sons Ltd
[4]GS1, 2004, GSMP 2005 Business Plan, GS1
[5]Howard, N., 1990, 'Soft' game theory, Information and Decision Technologies, 16(3), 215-227.
[6]Howard, N., 1998, n-person 'soft' games, Journal of the Operational Research Society 49, 144-150.
[7]Howard, N., 2004, Resolving Conflicts in a Tree: Drama Theory in the Extensive Form, Analysing Conflict and Its Resolution Symposium 2004.
[8]Ida, T., 1998, Evolutionary Stability of De Jure and De Facto Standards, Konan University and the University of Illinois, Working Paper
[9]Khan, R., 2005, What Standards Really Matter For BPM, BPTrends.
[10]Lowell, S., 1999, The Yin and Yang of Standards Development, 1999 World Standards Day Paper Competition First Place Winner.