

Dynamic Essential Modeling of Organization (DEMO) towards the Legal Domain

Ahmadh Rifai Kariapper¹, Prasad M Jayaweera²

¹Department of Computing and Information Systems, Sabaragamuwa University, Sri Lanka

²Department of Statistics and Computer Science, University of Srijayawardenapura, Sri Lanka

Abstract

It is realized that, necessity of having optimal way of reducing complexity and inter-operable issues in any organization regardless of the domains. Today most of the enterprises starve for above said issues in their own level of complexity and inter-operable issues. The enterprise is supported tremendously with the development of suitable organizational and well optimized operational structure.

The legal domain is one of the driving forces of any government in order to maintain the peace among the nation. Still, the legal domain experiences the issues stated above due to complex courts regulations, domain procedures, individual rights, number of pending cases, number participations in a case and decision making with the evidence. The Dynamic Essential Modelling of Organization (DEMO) is a theory to construction and operation of any enterprises. The intended result is provided through the standard pattern of the transaction⁸⁷ via series of communication acts. The legal domain is rich in more communicational agenda and more number of participants in a single case. Thus DEMO can be successfully applied due to optimal constructional pattern and the optimal operational acts. More than this, the DEMO provides re-engineering and re-designing options to the designers. Thus the judicial courts procedure and the organization can be restructured for the optimal output and it leads to break the barrier of complexity and inter-operable issues.

Key words: ontology model, judicial system, re-engineering

Introduction:

Nowadays, people prefer well organized organization in order to cultivate proper and sustainable outcome by aiming innovative, competitive, and flexible character of any enterprises in a certain domain. The organization may range from CSR to high level scientific research activities regardless of sectors and range of domains. The information and communication technology (ICT) plays vital role in sustaining of these different enterprises in different domains.

Complexity and interoperable issues is eye catching subject in any enterprises regardless of domains. The above stated two issues can make damage in data, dataflow, data security, information management, process management, communication management and organization management. Thus the survival and sustainable condition of the organization becomes hopeless. In Sri Lanka, the legal domain [1] still in crawling stage with very old manual case dealing system consuming more time in between tendering of case and the verdict. The complexity in legal domain gradually grows in many reasons; number of actors involving in the case, number of pending cases, hard procedure of case handling, hard and fast procedures of judicial system and government interventions such as power delegations. The entire above factors lead to produce interoperable issues in the legal system.

This paper tends to show how the legal system can be supported by DEMO⁸⁸ in order to maximize the productivity efficiently through simplicity, comprehensiveness, consistent and concise.

⁸⁷ It is series of communicational act in order to achieve an output which cause an effect on social world

⁸⁸ Dynamic Essential Modelling of Organization developed by Professor Jan L.G. Dietz from the Netherlands.

37
/74

General Concept of DEMO:

Basically the concept⁸⁹ of DEMO[2] is built up with information, actions, communications and organization (figure 1)[3]. Since these four entities are common to all enterprises, it is more valuable to describe these entities through the aspects of the legal domain. This concept leads the construction and the operation flows of the courts in common.

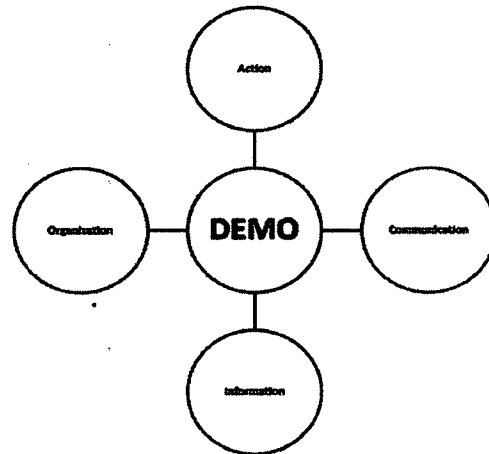


figure 1

Communication:

It is an atomic act in all kind of enterprises regardless domains. In legal domain more and more communication happens in, order to the smooth information flow including information retrieval, process flow including from the tendering a case to judgment. In DEMO also, the communication is called as passing a piece of information about any selected subject to one actor to another actor with an intention and it should change the physical world.

In another way it can be stated as *communicative act*. It is also can be said as coordination act. It is stated in figure

2.



figure 2

Figure 2 illustrates the communication flow and the *addressee* who receive the communicational information. If a lawyer wants to tender a case, then lawyer represents the initiator actor role and the courts clerk takes the addressee actor role. Here basically a common tuple can be applied with $\langle I, F, T \rangle$ where I is the illocutionary kind, F is a fact and T for time period of the current action to be taken. Illocutionary kind may claim for any of these six; question, answer, request, promise, statement and acceptance. So, by including the initiator role and the addressee role DEMO introduced OER notation [3, 4] of default tuple as $\langle \text{Initiator} : \text{Illocutionary kind} : \text{Addressee} : \text{Fact kind} : \text{Time period} \rangle$. It is possible to describe the same with following example in the legal system. A binder in the courts asks to the registrar whether to start binding the case document.

Let's apply the communication tuple $\langle I : I : A : F : T \rangle$ to the case binding scenario
 $\langle \text{binder} : \text{question} : \text{registrar} : \text{binds case document} : \text{now or near future} \rangle$

Then the reply from the registrar is "wait". So we can apply the rule $\langle I : I : A : F : T \rangle$ for the scenario.

$\langle \text{registrar} : \text{answer} : \text{binder} : \text{binding case document} : \text{later} \rangle$

So it is clear here, each conversation between two different actor role passes through the communication acts (coordination act) with the $\langle I : I : A : F : T \rangle$ tuple.

⁸⁹ Mental picture of a certain subject.

Handwritten marks: 387, 2/4

Information:

Information is defined as piece of logical thinking which is useful enough to convey the messages in between two enterprises entities. The information transformation is vital part of legal case proceedings since it enables the smooth rest of the proceedings as well information retrieval from the data warehouse. In demo, it is categorized in to three levels depends on the usage of the information respectively *forma*, *in-forma* and *per-forma* [5] respectively. This is clearly shown in figure 3.

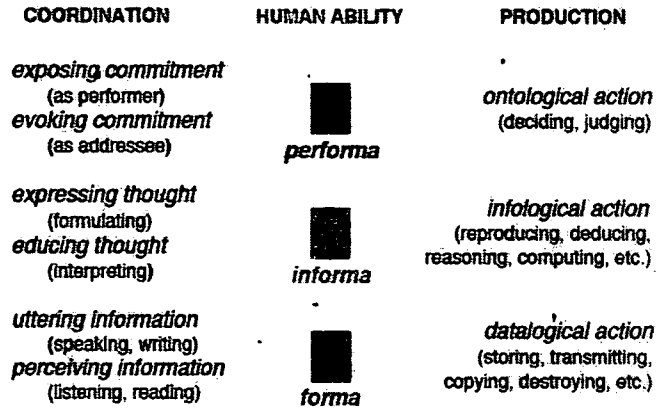


figure 3

According to the figure 3, forma[3, 5] is dealt the aspects of communication and information. In nutshell the data logical works such as verbal communication and perceiving, analysis, transmission of data, storing of data, copying of data, and retrieval of data or documents. In the courts system, always we have this kind of data level since most of the courts in Sri Lanka are manual case moving system. There are some dedicated courts employees[6] perform their data logical work in this level since it clearly deals with physical structure of the data / information. The in-forma defined as analyzing of the data by info-logical actions such as reproduction, deducing, reasoning and computing [3, 5]. It can be applied in the legal system too such as reproducing the case entry, timer period calculation, tax calculation, fine calculations, recording of words witness and later on either reproduce or retrieval and etc. the next information level is per-forma[3, 5]. Most of the business real actions which can affect the social world are taken place here. The information is being used effectively to do the decision or judging. Judicial system deals with this level since decision or judging is performed.

Action:

Performing action is most important in DEMO with the help of the informational system which is given above. In each level we have set of dedicated actions such as data logical action, informational action and business actions. The DEMO always focuses in the business actions since it is the real transactions of an enterprise. Case tendering, decision, case transferring, judgment are some of the core business actions in the legal system[7]. While, binding, copying, recording, delivering are some of the other supportive actions from rest of the levels. The business action can be divided in to two namely objective actions and inter-subjective actions. The objective actions are goal actions which provide the intended output (material or immaterial) of the enterprise such as tendering, payment of tax and decision making. Judicial system results immaterial outputs. The inter-subjective actions are necessary to perform the objective action. In DEMO it can be said as coordinating actions. So the coordination acts enable the agents or actors to commit the commitments towards particular event in the enterprise. In a legal domain to execute an objective action such as tendering a case there are other inter-subjective actions such as requesting, promising, stating and accepting should be fulfilled. A transaction is defined as a complete set of proper set of coordination acts and a production act in an order to produce an intended result. [3, 8]. The actor who initiates the transaction is called *initiator* and the actor who performs the actual objective action is called *executor*. A transaction is divided in to three different phases namely O-phase (order phase), E-phase (execution phase) and R-phase (result phase) respectively. It can be described with the following illustrated example. This figure 4 clearly illustrates four important parts namely action worlds, OER phase, coordination actions and production actions, and the actor roles involving in this actions. There are two different actions to be taken in order to complete a transaction such as objective and inter-subjective actions, and are taken place objective world and inter-subjective world respectively. It is easy to describe the figure 4 using the tendering the case. Let's

39
74

assume, actor role A1 is lawyer and actor role A2 is courts clerk. The O-phase is prior to the real intentional execution happens. It is clearly noted that, coordination act *request* and *promise* is taken place. Lawyer starts to request to tender the case by *request* act. The clerk promises back to lawyer to tender the case by *promising* act. The acts like *request* and *promise* categorized under inter-subjective world since these acts not decide the mission goal but support to achieve the mission goal. The E-phase is said that *execution* act is taken place to achieve the mission goal. Soon after the tendering happens, the clerk states that "tender is finished" by *state* act. In replying to the state act lawyer accepts by *accept* act. Since *state* and *accept* not decide the mission goal again these acts categorized under the (inter-subjective action) inter-subjective world. The mission transaction is completed by accepting the statement from the executor.

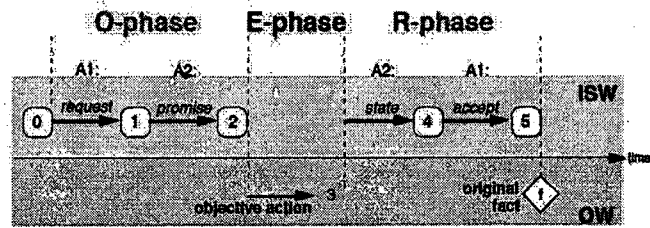


figure 4

Organization:

The organization describes about actor relationships, structural relationships, functional relationships, constructional relationships, inter-relationships between different organizational levels through the actors and compositional relationships. The complete organizational model can be described in to two different set of conceptual models namely white box (WB) model and black box (BB) model.

A white box (WB) model describes the construction and operation of the entire system in deal. Let's assume a case document from the view of a public; he knows only a bundled bound book is a case document. He understands only the components (viz. plaint, stamp duty, complaint and etc...) of case document but he doesn't understand what is in the complaint, the wordings and etc. A WB is the interaction between components and elements (structural and constructional understanding) or the components in its environment and the advantage of WB as; one can focus some certain subject (elements or component) with ignoring unwanted parts. A black box (BB) model describes the functional perspective of a system in deal with considering neither construction nor operation. The figure 5 illustrates that BB model deals the input variables and output variables with their inter relationships. In legal domain, the functional perspective can be tendering, binding, submitting, moving and judging. Construction of the system depends on these functions the system. Thus, the BB decides the WB in fact. As an advantage, these WB (constructional) and BB (functional) models can be decomposed at any level, which enables easy to understand for the stakeholders. It can be described through the word "filing a case" and it can be decomposed in to tender, payment, binding, submission and deciding.

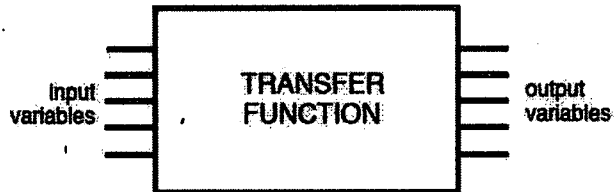


figure 5

Dynamic Essential Modelling of Organization:

The DEMO methodology was started to carry out the engineering requirement purpose but later on it touched everywhere such business process, process management and organization management.

It provides sets of diagramming technique with well-balanced solutions regardless of domains. Since the DEMO is enriched with Ψ (Psi) theory, the fulfillment of operation axioms (coordination acts, production acts, actors), transaction axiom (basic transaction pattern, standard transaction, cancellation pattern), composition axiom, and distinction axiom (communication, coordination and production). It consists of four ontology models described in the following table.

Model	Description
Action (AM)	Specifies action rules that serve as guidelines for the actors in dealing with their agenda and each agendum has its own action rule
State (SM)	Specifies the lawful states of the Coordination World and the Production World: object classes, fact types and the ontological coexistence rules
Process (PM)	Specifies the lawful sequences of events in the coordination world and the production world: the (atomic) process steps and their causal and conditional relationships
Construction (CM)	Specifies the composition, the environment and structure of a system, the identified transaction types and the associated actor roles

Handwritten signature/initials: 49/74

Table 1

The following chapter describes the short example of initial step courts proceeding called case filing. Case filing consists of many sub activities such as case tender, stamp duty payment, binding, submission and decision respectively. For easiness the first two activities are taken in to the example case.

Example:

The brief scenario of case tending and payment of stamp duty are considered here. The lawyer collects and arranges the necessary documents to file a case including stamp duty by paying at the courts clerk counter. So there are two important actions which can affect the social world. Once lawyer submit the documents the clerk check for it and ask for the payment for the stamp duty in order to tender the case. The lawyer pays the stamp duty payment to the clerk. With the payment the clerk starts to tender the case to the case proceeding cycle. DEMO deals with B-organization means business transaction levels. Thus a different level of ontological model is created.

Transaction #	Transaction type name	Result #	Result fact / production fat
T01	Tender	R01	Tendering has been initiated
T02	Payment	R02	Payment has been paid

Table 2

Transaction	Initiator	Executer
T01	CA01	A01
T02	A01	CA01

Table 3

It is clearly visible two important transactions are taken place tendering (T01) and payment (T02) respectively. Ultimately each transaction produces its own results namely tendering has been initiated (R01) and payment has been paid (R02). The table 3 shows the initiator and executer to the relevant transaction. Figure 6 shows the process flow with the necessary links. T01 started by external actor role and it has three phases (order, execution and result) earlier discussed in this paper. Transaction one illustrates the order phase but execution phase is the conditional phase of the transaction two. The T02 should be completed in order to complete the execution of the T01. The dotted arrow from T02-R shows it.

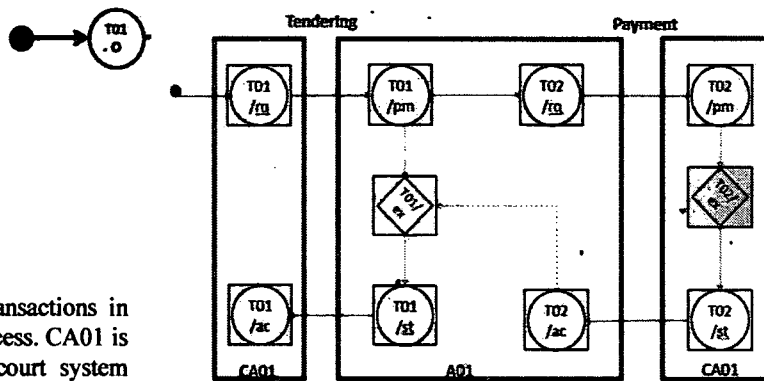


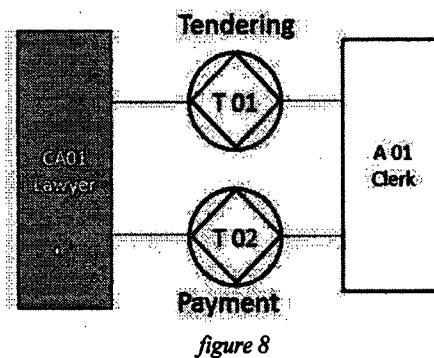
figure 7

Figure 7 illustrates the both transactions in order to finish the tendering process. CA01 is an external actor role of the court system (lawyer) initiates the process starting with requesting to tender the case to internal actor role A01 (clerk). Then the clerk promise the transaction and initiate the request for the payment to actor role CA01 (lawyer). Lawyer executes payment and states it to the A01. If payment is satisfied A01 accepts and starts the execution processes of tendering. Soon after the execution of T01, it is stated to the CA01. CA01 accepts the transaction T01 (tendered). Here more than the figure 6 we can see execution of T01 is pending till acceptance of T02 (payment) and the additional communicational acts such request, promise, state and accept.

41/74

Figure 7 shows actor transaction diagram and where actor roles involving in these transactions, initiator, executer, transaction kind, and whether the actor is internal entity to the system or an environmental actor. Always external composite actor role is colored as grey. It is visible that, the transaction accounts as diamond in the disk, which shows transaction includes coordination acts (disc) and production act (diamond).

In general the models are expressed in diagrams, tables and pseudo algorithms. In this paper, B-organization (system) is modelled since it deals with ontology production and only the Actor Transaction Diagram (ATD), the Transaction Result Table (TRT), and the Process Model (PM) are staged.



Conclusion:

Most court systems still follow the conventional design and procedures. Thus, the complexity and interoperable issues are alarming level. It is necessary to keep good communication between all D-level actors, I-level actors and B-level actors for the smooth functioning of the courts. The DEMO methodology gives the very positive solution for this problem all in one. Since its powerful different levels of communications act and production act produces either material or immaterial result for a certain transaction. So the DEMO can be successfully applicable to the legal domain since functional & constructional fulfillment; providing immaterial facts since courts system deals with it; interaction and communication between different organizational level actors; providing in and out understanding of selected enterprise; and the sustainability is high since the DEMO enables redesign and reengineering principles by keeping original concept remains and enables the structural change whenever possible and necessary.

Reference:

- 1 http://www.nyulawglobal.org/globalex/sri_lanka.htm#_4.4_District_Courts, accessed 30th June 2014
- 2 Dietz, J.L.: 'Outline of the Book', Enterprise Ontology: Theory and Methodology, 2006, pp. 3-6
- 3 Dietz, J.L.G.: 'DEMO: Towards a discipline of organisation engineering', European Journal of Operational Research, 2001, 128, (2), pp. 351-363
- 4 Liu, K., Sun, L., Barjis, J., and Dietz, J.L.G.: 'Modelling dynamic behaviour of business organisations—extension of DEMO from a semiotic perspective', Knowledge-Based Systems, 2003, 16, (2), pp. 101-111
- 5 Dietz, J.L.G.: 'Enterprise Ontology: Theory and Methodology' (Springer, 2006. 2006)
- 6 <http://www.courts.mo.gov/page.jsp?id=631>, accessed June, 30 2014
- 7 Kumarasingha, D.P.: 'THE ROLE AND FUNCTION OF PROSECUTION IN SRI LANKA', in Editor (Ed.) (Eds.): 'Book THE ROLE AND FUNCTION OF PROSECUTION IN SRI LANKA' (edn.), pp.
- 8 Dietz, J.L.G.: 'The atoms, molecules and fibers of organizations', Data & Knowledge Engineering, 2003, 47, (3), pp. 301-325

Inheritance Rights in the Context of Lesotho's International Human Rights Obligations

Nqobizwe Mvelo Ngema

Department of Public Law, University of Zululand (South Africa)

Abstract

The main issue this article observes is that the Kingdom of Lesotho is a party to some international human rights such as CEDAW and ICCPR. These instruments have some provisions that protect equality rights and CEDAW provides a detailed protection of equality rights. The concern is that section 18 (4) (b) & (c) of the Constitution of Lesotho permits discrimination in customary law matters such as adoption, marriage, divorce, burial and devolution of property. This is in conflict with the obligations that were voluntarily accepted by Lesotho in the above treaties. If it is serious about respecting its international obligations, section 18 (4) (b) & (c) ought to be amended and the above treaties incorporated to its national laws through legislation and other possible means.

Keywords: Equality, pactasuntservanda, inheritance under Customary Law

42
/ 74