

DYNAMIC DIGITAL ENTERPRISE MODEL (D.D.E.)

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INTRODUCTION

Given the advances in technology, especially in IT, we believe it is a good time to adopt a new enterprise model, highly dynamic, adaptive and easy to upscale or to downscale. Artificial Intelligence has now entered mainstream business, opening the gate towards new fields, filled with both promises and pitfalls. And D.D.E. model is meant to take full advantage of AI decision making.

Our endeavour aims towards optimizing organized enterprise activities by taking a step farther a number of concepts and principles from *Lean, Agile, Kaizen, Rightshifting* and others, in a systemic way. Some of the principles of D.D.E. model are straight forward and they need no explanations at this point. Others, are more complex and we are explaining them bellow.

A caveat to the reader:

the structural simplicity of our D.D.E. model comes together with a high complexity of human interactions, between employees, End-client and external providers!

To become an efficient Dynamic Digital Enterprise you have to implement all the principles explained bellow. This systemic set of principles constitutes, in practice, your Metrics matrix.

BACKGROUND

Recent years have seen a 'war' between Traditional Management and Agile – including aspects of Lean, Kanban and many others, too many to mention here. In our opinion, such a confrontation is not really constructive. And it slows down progress.

Studying the evolution and the potential of modern organized entrepreneurial activities, we believe to have found a solution which proposes what we believe to be the best aspects of all the above plus a few new concepts and innovative principles.

Dynamic Digital Enterprise is our proposal for future enterprises!

The model presented bellow is just a schematic which *needs to be customized to the specific goals of each enterprise!*

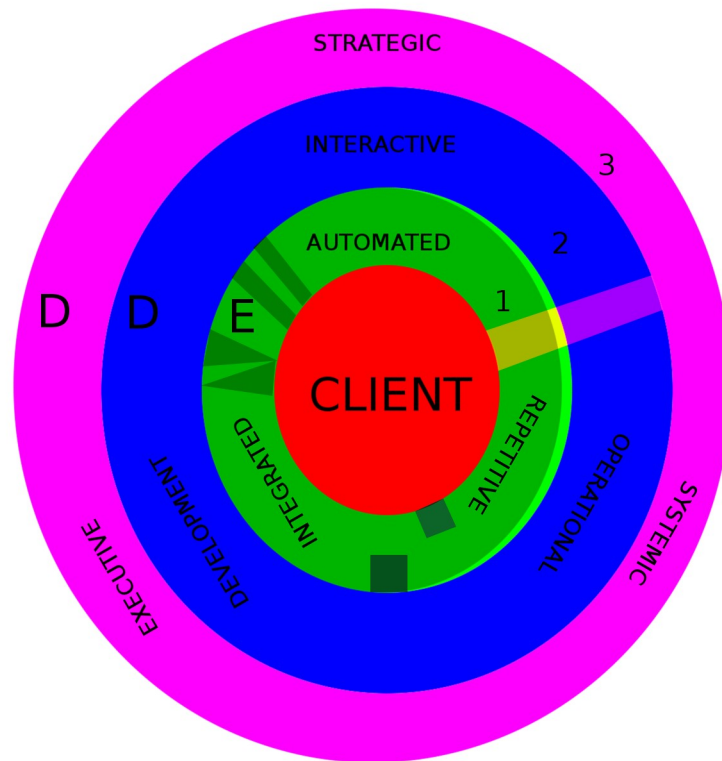
In all fairness, we don't believe it can be easily applied to every single existing enterprise, because many organizations are not conceived to be Digital. They are just using digital tools and digitalized processes, while in essence remaining Traditional Enterprises.

However, many existing entities could tremendously benefit from gradually adopting D.D.E., in a well thought manner.

Since a picture equals a Thousand words, we present a basic representation of the living nexus of D.D.E.! As you can notice, the IT structure is built around the End-client, in a highly modular manner, taking full advantage of a micro-services (darker geometrical figures inside layer 1) based architecture and serving both End-client and D.D.E. operational needs. The same concept of dynamic activities applies to all three layers!

The example of cross-layers area is where both strategic work and operational work are being done by the the dynamic team in order to solve a specific need of the End-client. Once the problem solved, the team ceases to exist and each individual starts working on something else!

DYNAMIC DIGITAL ENTERPRISE



DEFINITIONS:

A *digital enterprise* is, in our understanding, an activity entirely built and operated around IT. It is based on human-machine interaction, where both components are acting towards improving life of all those involved, from end clients to all suppliers along the chain. As such, we propose a model where **repetitive activities are done entirely by machines**, while **creative activities are entirely accomplished by humans**.

Repetitive activities are, in our model, those activities having a known and constant set of inputs and a predictable set of outputs, obtained through data processing. In other words, every operation that can be entirely 'digitalized' is delegated to machines. Automation of repetitive activities is not only possible, but it is necessary in this context. This model also involves automated decision making, based on those data characteristic to the activity in question. And this includes Artificial Intelligence based decision making!

Creative activities are those demanding a human person to be involved because otherwise those activities could not be accomplished.

ATTENTION:

Digitalization of a paper-based process doesn't make you a digital organization.

Renaming a traditional management process or role as 'digital' doesn't make you a digital organization.

Maintaining your traditional organizational structure while adopting modern IT technologies doesn't make you a digital organization.

Upgrading your web portal doesn't make you a digital organization.

To become a digital enterprise you need to rebuild the entire organization around IT! For example by adopting D.D.E.! Or, any other approach where IT is the core of the new structure!

STRUCTURE

D.D.E. is a Customer Centric model, where the new enterprise is built from the very beginning around the end client, considering the entire chain of supply! That includes external elements involved in the process, from the end supplier up to the first link of the chain (the suppliers of the 'raw' primary materials/resources/services used in building the end service/product).

This model consists of *three concentric layers*, built around the End-client!

The first layer is the one in direct contact with the end client. Here we include activities from sales, on-boarding, client relationship management, support, customer service, legal, online and offline tools/facilities. This first layer is based on full automation of repetitive activities, with human supervision coming from the second layer.

The second layer is that of 'business as usual' decision making, covering operational aspects and integrative activities of the enterprise, like solving exceptional situations or integrating continuous user feedback into the automated repetitive activities.

The third layer is that of systemic enterprise activities and the work is entirely done by people, using the digital tools (instead of becoming their 'slaves'!!!). This layer includes strategic decision making, design of operations, conceptual activities and similar.

The three layers are dynamically overlapping when needed, based on the specific situation of each enterprise and based on particular situational needs. For example, a particular client might require an interaction with all three layers in a particular case, but normally it would interact only with layers 1 and 2.

A significant difference between existing organizational models and D.D.E. model is around roles and responsibilities of those involved!

D.D.E. is built around the end client in a manner which gives full authority to a '**Digital Master**': a combination of skills from traditional CEO, CTO, CIO, CSO and other senior roles. That is because any automation is solving a precise need of the End-client and the most 'powerful' person in the enterprise has to be in-depth IT savvy. In this way, all decisions are made in full knowledge of the technical and technological constraints. Made in real-time, with minimal financial effort!

[A Digital Master knows very well Hardware, Software, Networks and Programming!!!]

Performance is achieved by following a nexus set of systemic principles, as presented bellow!

Instead of the concept of 'production line' applied nowadays by many large organizations, where work is accomplished by a larger number of less skilled workers supporting a much smaller number of specialized staff, D.D.E. comes with the *principle* of **dynamic multi-functional teams of cross-skilled individuals**. They are composed of highly-skilled staff, able of performing multi-functional activities in order to cover in real-time the needs of End-client.

Then, the **1-1-1 principle**:

between end-client and strategic decision maker there is only one person, at all times!

This is supported by full automation of repetitive operational activities, with huge advantages. For example:

- real-time dynamic adaptation to end-client needs,
- reduction of unnecessary staff,
- high levels of end-user satisfaction due to prompt resolution outcomes, and many others.

This results in extreme financial gains (from minimal operational costs up to minimal long-term investments).

Next, is the **flat hierarchy principle**:

work is achieved by multi-functional highly skilled teams.

Leadership is assumed on a 'need to act' basis, in a dynamic manner, where the expert in that particular field assumes leadership.

Continuous professional development is achieved by combining in practical ways the theoretical and practical learning, customized to each enterprises' needs.

This results in organizational stability and staff fidelity, with Almost Zero Churn Rate!

Requiring a much smaller number of employees, thanks to their multi-functional skills, the budgeting needs are much smaller and the efficiency is much higher.

Another *principle* is that of **pro-active end client**:

by engaging the End-client in a pro-active and participative manner, the end-client becomes a '*member of the team*' and contributes with regular constructive feedback. [*Up-skill your client!!!*]

The feedback from end-client keeps the enterprise aligned with the market, always offering what the end-client wants to buy from D.D.E.. With too many advantages to mention them here.

The 'Dynamic' aspect is also enhanced by the **flexible modular structures principle**:

the platform is built in modular ways, where each component does one thing and one thing only, but it does it perfect.

Each module is built based on real-time End-client interactions, based on constant user-research activities.

A most vital aspect of D.D.E. is the *principle* of **knowhow-based authority**:

the employees facing the end-client, from the second layer of the D.D.E., are having full authority and power of decision making!

As opposed to the traditional management principles, where the client facing staff is acting under a 'limited delegated power', in D.D.E. those dealing directly with the end-client are having full authority and responsibility over the decisions made. Their decisions being based on 'first-hand' interaction with the End-client, they are the best positioned employees to decide in full knowledge!

There is no hierarchical structure above them and the decision making is done based on collective experience, rather than single person experience.

Another difference between existing enterprises and D.D.E. is the **problem-solver hiring principle**:

instead of using general pre-identified requirements for selection process, D.D.E. selection is achieved by hiring the candidate who proposes the best solution for the existing problem!

Hiring new staff is triggered by problems around an enterprise and the traditional approach is to establish a general set of skills, then to 'shop around' for the candidate matching the closest those pre-determined skills. This approach, however, is no guarantee of successful performance by the future employee. Our proposal is based on tangible results obtained through a simple selection process:

- present the problem to the professional community;
- chose the best solution;
- hire the author.

In financial terms, this is far more efficient than any other process used by recruitment industry nowadays.

D.D.E. is based on a start-up mentality, whatever the size of the organization. Layers 2 and 3 are acting as one single team, where accountability is shared between all participants and each person is held accountable by her/his peers

Scaling ability of D.D.E. is a native part of the model! It works in the very same way with a garage startup or with a very large organization. The growth process is achieved through creating dynamic modules which embrace the very same organizational culture.

SIMULATION RESULTS

To assess our 'proof of concept', we have simulated D.D.E. model over an existing very large public organization. The results are staggering:

- the work currently done by over 60,000 employees, could be done by only around 6,000 employees;
- the 2016 annual cost for running the organization was over 3 Billion a year - through D.D.E. it would have reduced to less than 1 Billion per year;

- end-client calls with average waiting time of 15 minutes would have been reduced to less than 1 minute!

Most important, the total initial investment needed for implementing D.D.E. would be less than the operational budget for a year!!!

PRACTICAL D.D.E. EXAMPLE

End-client is the one who pays for your product/service. As such, your business efficiency is based on you solving a problem painful to your end client. A problem for which the end client is happy to pay money to make it go away!

In the example bellow, the End-client is looking to solve the problem X and entire D.D.E. team gets involved! The following steps are to be followed:

I. D.D.E. team asks in details the End-client what the problem is, by applying User Research principles (for details over UX please see available external publications). The outcome is an in-depth understanding of the problem.

II. Once the problem is understood by D.D.E., it starts the following analytic process:

- decompose the problem X in main elements - A, B, C, D ...
- decompose each main element into the most explicit technical description possible – T_{A1} , T_{A2} , T_{A3} etc.
- prioritize which of the above is at the core of the Minimal Functional Product.

III. Start building the MFP (MVP) in ITERATIONS of Variable Length.

- Each iteration includes the End-client real-time feedback!!!

[First iteration starts with the User Research findings!]

- D.D.E. team has a direct open channel with End-client, allowing optimization or changes in REAL-TIME.

IV. Once a minimal functionality is achieved, let the End-client use it, test it, play with it!

- Integrate continuous real-time feedback from End-client in order to expand the MFP.
- Move to a DevOps model for optimal integration of the above.

All along the way, D.D.E. teams are dynamic, formed or modified according to the needs of the work in progress!

Internal or external staff can be moved between teams only **after** a particular technical problem was solved and delivered by those staff members! Not in the middle of working on one!!!

Financial and contractual aspects are established and sorted out once D.D.E. team has the full understanding of the problem. Agile contracting allows flexibility on both sides, as both End-client and D.D.E. become part of the same team, with same goal: to solve the problem X!

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Augustin Ciceu, Newcastle upon Tyne, the 30th of May 2017