Value Aspects of Wardley Maps

Pavel Hruby, Jesper Kiehn
phruby@acm.org, jkiehn@hotmail.com

Abstract. Wardley map is a business strategy method named after Simon Wardley, who created this method in the period 2005-2010 and gradually improved it into its current form. Wardley map determines the business landscape containing a value chain, where the position of each component is determined by two criteria: by the level of the component's evolution, and by its visibility to the user. As the components of the Wardley map form a value-adding process, in this short paper the authors would like to explore the hypothesis how does Wardley map match the REA ontology, and whether using them together could lead to additional insights about the business and to a more complete business model.

Keywords: Wardley map, REA ontology, Value chain, Value-adding process, User need.

1   Introduction

A Wardley map [7] is a map of the structure of a business or service. Wardley map specifies the needs of company stakeholders such as customer, user, government and regulatory agencies, and the components needed to serve these stakeholders. Besides the value chain, a Wardley map modeling framework contains concepts such as company purpose, doctrine, user journey, climate (the rules of the game), leadership (the moves we can make) and specific patterns in each area.

Compared to traditional techniques such as a business plan or SWOT diagram [9] (strengths, weaknesses, opportunities and threats), Wardley map does not describe a static strategy or a snapshot in time, but rather a space in which the strategy can evolve. In the military metaphor, a well-known statement in military strategy is that "no plan survives contact with the enemy", attributed to the Prussian field marshal Graf Helmuth Karl Bernhard von Moltke [8]. But in order to make the right decisions, the military commander has a map of the battlefield. In business strategy, instead of a (often rather wishful than realistic) business plan, Wardley map is a map of the customer needs, products and services, and their environment. Consequently, Wardley map allows for using "topographical intelligence" in creating the business strategy and modifying it to adapt to external forces.

It has been reported by Leading Edge Forum [4] that Wardley maps helped the companies to modify their business strategy when the COVID lockdowns started in the first quarter of 2020, and that these companies adapted to COVID-related constraints better than the companies without a map.

2 Wardley Map

Central element of the Wardley map modeling framework is a value chain, illustrated in Fig 1. The value chain can be used to derive other elements of Wardley Mapping framework, such as customer journey, doctrine, and company purpose.
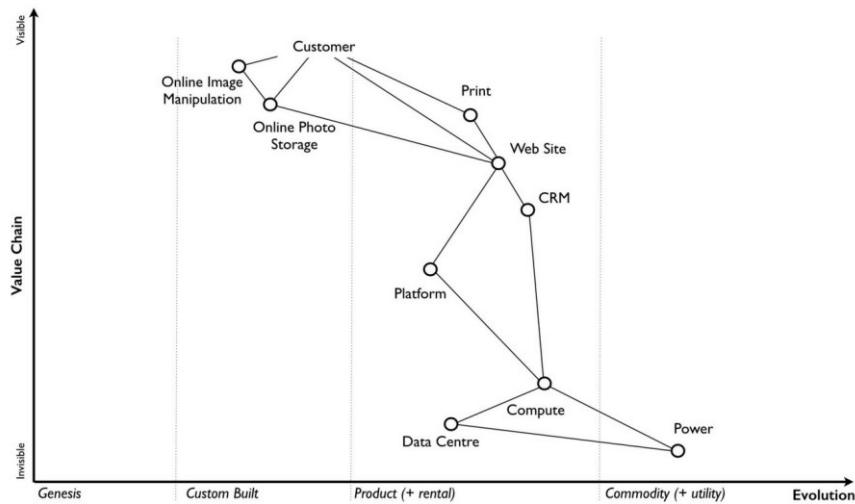

Fig. 1. Example of value chain in Wadley Maps.
Source: https://medium.com/wardleymaps/finding-a-path-cdb1249078c0

Wardley map in Fig. 1 can be read as follows. Like a topographical map is oriented towards the North at the top, Wardley map is oriented towards the Customer, user, or other stakeholder at the top. Below the customer are the customer needs that the company tries to meet: Online image manipulation, Online photo storage, Print and Web site. Below are the components that are required to meet these needs and are under company control: CRM, Platform, Computer, Data Center and Electric Power. The position of components in the y-axis illustrates visibility to the user, the components lower down the map are less visible to the user. Position of the components in the x-axis represents the stage of evolution of the component, from the genesis phase, i.e. the rare newly discovered components, to the commodities on the right hand of the spectrum, i.e. highly standardized products and utilities that fit specific purposes.

The evolution dimension (the x-axis) determines additional characteristics of these components, also described in Chapter 2 of Wardley Maps [7]. For example, users' tolerance to failure depends on the component evolution stage. For the components in the genesis stage failure is assumed, for the components in the product stage failure is not tolerated and failure of the commodities is surprising.

The evolution stage of the component also determines the optimal organizational structure. Wardley maps divide people into three groups, based on their mindsets and skills: Pioneers (they like experimenting), Settlers (can turn a prototype into a product) and Town Planners (understand the economies of scale): Pioneers best

contribute to the components in the Genesis phase, Settlers to the Custom build and product phases, while Town Planners best work with commodities.

The evolution stage also determines the methodological approach for development of these components: Agile methods (embracing change) fit best to the components in the Genesis phase, Lean (focusing on improving value and reducing waste) fits to Custom Build and Product phase, while 6-sigma (data driven, reducing deviations) is best applicable to commodities, where stability, efficiency and price are most important. In Wardley maps it would be a mistake to form a team that is responsible for the components in different stages of evolution, as they require different approaches and people with very different mindsets.
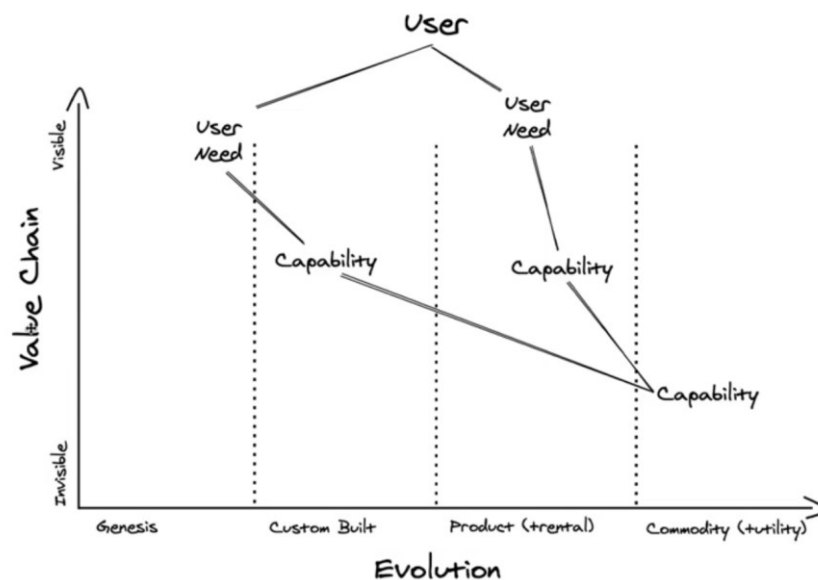

Fig. 2. Interpretation of components in Wardley Maps.
Source: https://learnwardleymapping.com/

Semantics of the components on Wardley Map is not formally specified. Simon Wardley writes the components represent activities, practices, data and knowledge, other authors, such as Ben Mosior [6] calls them capabilities. The relationship between components is informally characterized by the "needs" relationship; components more visible to the customer need the components lower in the y-axis. For example, in Fig. 1, Website needs CRM, which needs Compute capability, which needs Data Centre and Electric Power.

3 Mapping Wardley Map to the REA Ontology

In authors' current understanding, Wardley Map only describes conversion processes, and does not describe exchange processes. Although many existing Wardley Maps include Payment capability, this capability is understood as service allowing the customer to pay for the provided services. Likewise, Wardley maps for a financial institution include needs of financial flows, but the focus of the map will be on components enabling these financial flows, rather than monitoring what has been

exchanged for what. Nevertheless, Wardley map distinguishes between users and customers, that is, the company provides products and services to the users, but often a different stakeholder, the customer, pays for these products and services.

Suggested mapping between the REA concepts and Wardley map is illustrated in Table 1.

Table 1. Correspondence between Wardley map and the REA ontology concepts

Wardley maps	The REA ontology
User, Customer, Stakeholder	Economic agent
Need relationship	REA conversion process
User need	Economic resource
Capability, activity, practice, data, knowledge	Economic resource
Business purpose	Not applicable
Landscape (a Wardley Map)	Partly, only as a value chain. Evolution stage of the economic resource and visibility to the user are not applicable.
Doctrine (things we should always do)	Not applicable
Climate (external forces)	Not applicable
Leadership (moves we can make)	Not applicable

User, customer, and other stakeholders at the top of Wardley map correspond to the economic agents in the REA ontology. The need relationship in Wardley map can be described by the REA conversion process, where the elements at the lower end of the relationship are the economic resources used or consumed in order to produce the economic resource at the higher end of the relationship. We can also see that the Enterprise provides the Compute capability in order to receive CRM, see Fig 3.
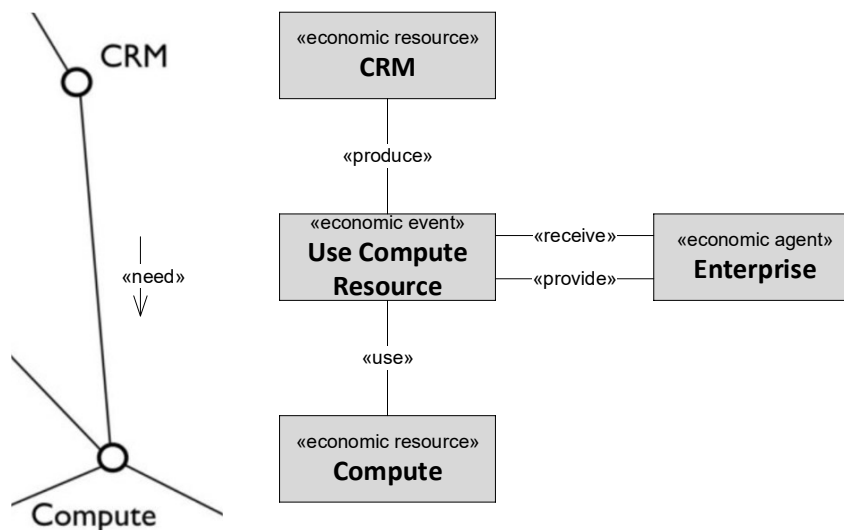

Fig. 3. Need relationship (left) and corresponding REA model (right)

Biccheri and Ferrario [1] provide a comprehensive analysis of needs and realized that "the meaning of the word need is ambiguous and full of antinomic nuances." Nevertheless, this notion of need corresponds very well to the Wardley map need relationship, forming the supply chain of services in Wardley map. Consequently, the need-driven representation of services for the Public Administration can also be described by a Wardley Map, although without underlying nuances of various type of needs, as Wardley Maps only have a single type of the need relationship.

De Kinderen et al. [3] observe that "in many situations a customer need is so complex that a bundle of services is needed to satisfy the need", and also distinguishes between what users need and what they want; the need defines the essential survival set of consequences of consuming a service, while a want can contain non-essentials". The term consequence is specified as "anything that results from consuming a service".

Wardley maps typically do not specify the user need in De Kinderen's [3] sense, instead, they specify a bundle of services satisfying the implicit user need. In practically all published Wardley maps, such as Wardley [7] and Mosior [6], the components linked to the User are products or services. For example, in Fig. 1, the components linked to the User are Online Image Manipulation, Online Photo Storage, Web Site and Print. These components represent a "bundle of services needed to satisfy the need", but the user need itself, which in this case is turning the camera image (the raw pixels) into a good-looking picture, is not represented in Wardley map explicitly. Mosior [5] suggests several ways how to include user needs to Wardley maps, by annotating the relationship, by user journey, as knowledge we have about the user, and as user's capability. For the purposes of mapping Wardley maps to the REA ontology, we can conclude that components of the Wardley map, i.e. capability, activity, practice, data and knowledge, represent REA economic resources.

Business purpose in Wardley map represents the main user need that the company is meeting. Examples are "Designed for Driving Pleasure" by BMW and "Advancement Through Technology" by Audi. The business purpose inspires people to act, and the underlying value chain may be different if we focus on driving pleasure, or on advancement through technology. Business purpose is probably not applicable to the REA ontology. Likewise, Doctrine, Climate, and Leadership do not have a corresponding element in the REA ontology.

4   Discussion

Users are at the top of a Wardley Map. The components linked to the User are called "user needs", however, these components often represent products or services, and the actual user needs are implied. It brings focus of the map to the user and to substitutions of the services and products, essential in understanding and adapting business strategy. For example, cable TV can be substituted by streaming TV services, while the user need, the home entertainment, is implied.

The value chain described using a Wardley Map can be described by sequences of conversion processes in the REA ontology. Applying the axioms and consistency rules of the REA ontology will lead to the discovery of additional components in the value chain, and consequently to better understanding of the business landscape. The REA axioms will also help creating of Wardley map consistent from the economic point of view, not only relying on the business instinct and experience of the map creator.

A typical Wardley map is drawn from the perspective of a single company, i.e. from the "trading partner" perspective. The REA ontology can provide a model from the perspective of an independent observer, thus modeling a business ecosystem of customers, vendors, partners, and competitors. There might be a potential benefit for Wardley map to produce maps for business ecosystems, for example, when the customer has several needs that must be met simultaneously, and they are met by different companies.

As creating the REA model from Wardley map is straightforward and could be easily automated, the resulting REA model can be used as a system specification of a software application for planning, monitoring, and control of the business processes described by the Wardley map. As there are published Wardley maps both for various business scenarios, company processes and even industries, they can serve as templates for the REA models for these business scenarios, company processes and industries.

5   References

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