

A MICRO MOMENTS ECOSYSTEM

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ABSTRACT

The present invention relates to a holistic connected system of time-varying and contextually sensitive digital interactions that embody knowledge capture, context capture, pattern matching, objective functions, continuous improvement, and digital transaction systems. Each element of the system may vary over time and the holistic system is capable of dynamic reconfiguration.

The invention enables the following time-varying, contextually sensitive processing to occur:

1. The system senses or predictively anticipates *Micro Moments* (i.e., time-varying decision and influence points with context).
2. From the Micro Moments, the system senses the *Demand Signal* of a need.
3. From the Demand Signal, the system responds using an embodiment of a *Glass Pipeline*, to identify and capture what is going on across the ecosystem.
4. The Glass Pipeline “envelops the data” via a *Digital Fabric* mechanism.
5. Using the Data Fabric, continuous process improvement mechanisms are used to compare the time-based dimensions of a *Micro Moment*.

The application of this invention can serve to enhance customer loyalty systems, consumer engagement systems, supply chain management systems, engineering systems, manufacturing systems, enterprise asset management systems, knowledge management systems, change management systems, automation/AI systems, and/or data analytic insight systems as exemplary embodiments.

Note: the following sections are revised for this Summary. They are fully presented in the actual Utility Patent documentation that was submitted.

BACKGROUND OF THE INVENTION

The current invention differs from the best-known prior art approaches to complex adaptive systems and their building blocks. For example, (Holland, 2012) notes that “most [complex adaptive system] agents turn out to be persistent patterns imposed on flows... across dynamically changing, spatially distributed networks”. Additionally, (Holland, 2012) distinguishes that “though the interactions... are complex, the structures governing the interactions are simple”. This distinction between the interactions and the structures is extended into a Micro Moments Ecosystem in the present invention, where Micro Moments are captured at individual points in time as decisions happen. Furthermore, extending from (Holland, 2012) where “patterns form building blocks for strategies”, the present invention applies patterns to form building blocks for objective functions that process Demand signals.

SUMMARY OF THE INVENTION

This invention is directed to a system that senses and/or predictively anticipates opportunities to digitally engage or transact based on a time-varying network of weak Demand Signals connected

across time. The system processes from a complex set of next step outcomes, based on game theory type of Objective Functions that adapt over time. The system is thus predictive, yet non-deterministic. This addresses a gap where cause-and-effect are disguised through emergence in complex adaptive system. The corresponding engine not only requires time varying connectivity and predictive capabilities, where multiple viable options exist at each decision point, but also requires a fundamental processing shift from ordered systems to complex systems with a fundamentally different paradigm. The time-varying connections are what become the most relevant elements and serve as the core to the ecosystem in this invention.

EXEMPLARY SCENARIOS

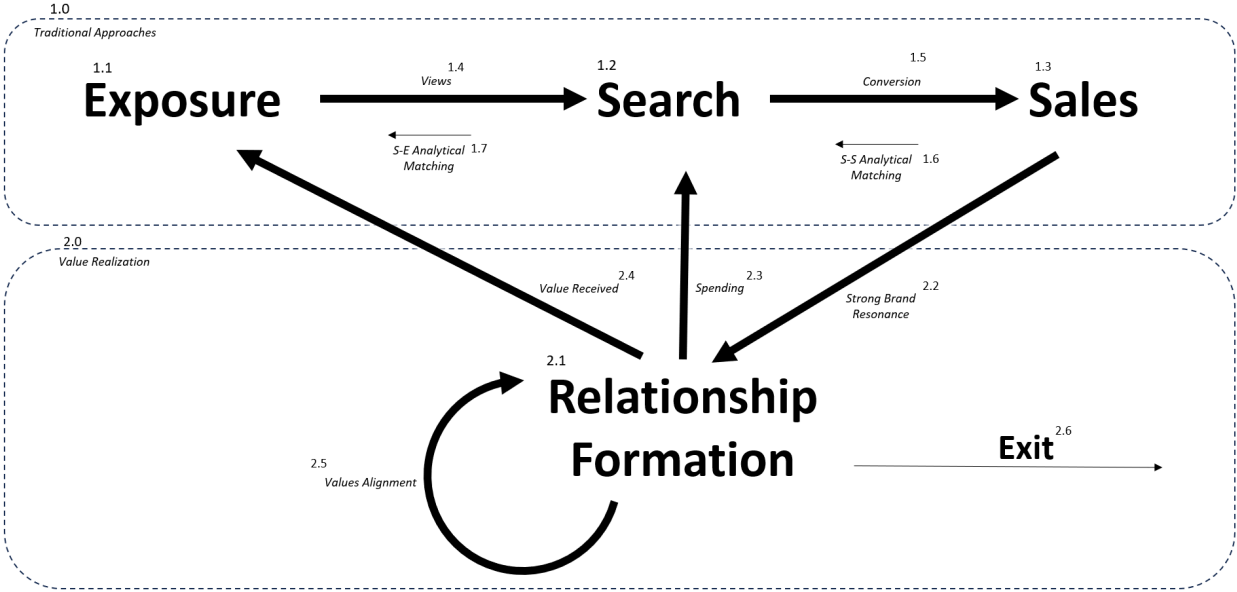
The invention described can be applied in multiple contexts and industries. Exemplary embodiments of the Micro Moments Ecosystem could be crafted for the following applications, among others: Supply Chains, Product Lifecycle Management, Loyalty Systems, and Client Engagement Systems. Through the application of this invention, other scenarios can be readily identified by persons skilled in the art.

Traditional solutions, particularly technology-assisted solutions, are often founded upon a premise that data is a linear driver of decision-making. However, when this premise is applied into Micro Moments, i.e., time-varying decision and influence points with context, the flow becomes distinctly non-linear and adaptively complex.

The Micro Moments Ecosystem leverages encapsulations of context and data that move through a data fabric and glass pipeline to solve the non-linear complexities introduced by time-varying decision points that are connected by time-varying contexts.

As an embodiment of the Micro Moments Ecosystem, Figure A reflects a Loyalty Journey within the Consumer Retail Market. Note that the system architecture is projected into two Objective functions in the Retail Market: Traditional Approaches and Value Realization (see Figure A).

Figure A: Exemplary embodiment of Micro Moments within a Loyalty Journey for Retail Market



The Objects of Figure A are described as follows.

Object 1.0: Traditional Approach

Micro Moments:

Object 1.1 Exposure: Micro Moment where a person or automated engine **sees** the brand messaging and recognizes the alignment.

Object 1.2 Search: Micro Moment where a person or automated engine **looks** for products.

Object 1.3 Sales: Micro Moment where a person or automated engine **acquires** a product.

Micro Moment Connections:

Object 1.4 Views: connection where Exposure leads to Search

Object 1.5 Conversion: connection where Search leads to Sales

Object 1.6 S-S Analytical Matching: connection between Sales and Search

Object 1.7 S-E Analytical Matching: connection between Search and Exposure

Object 2.0 Value Realization: below the surface and often hidden in plain sight

Micro Moments:

Object 2.1 Relationship Formation: Micro Moment of emotional connection wherein person consumes aligned *content*.

Object 2.6 Exit: Micro Moment of “*that’s not it*”. This is where the person or entity ***drops out of the ecosystem*** due to misalignment.

Micro Moment Connections

Object 2.2 Strong Brand Resonance: connection where Sales reinforces Values and feeds into Relationship Formation

Object 2.3 Spending: connection where Relationship Formation feeds forward into Search

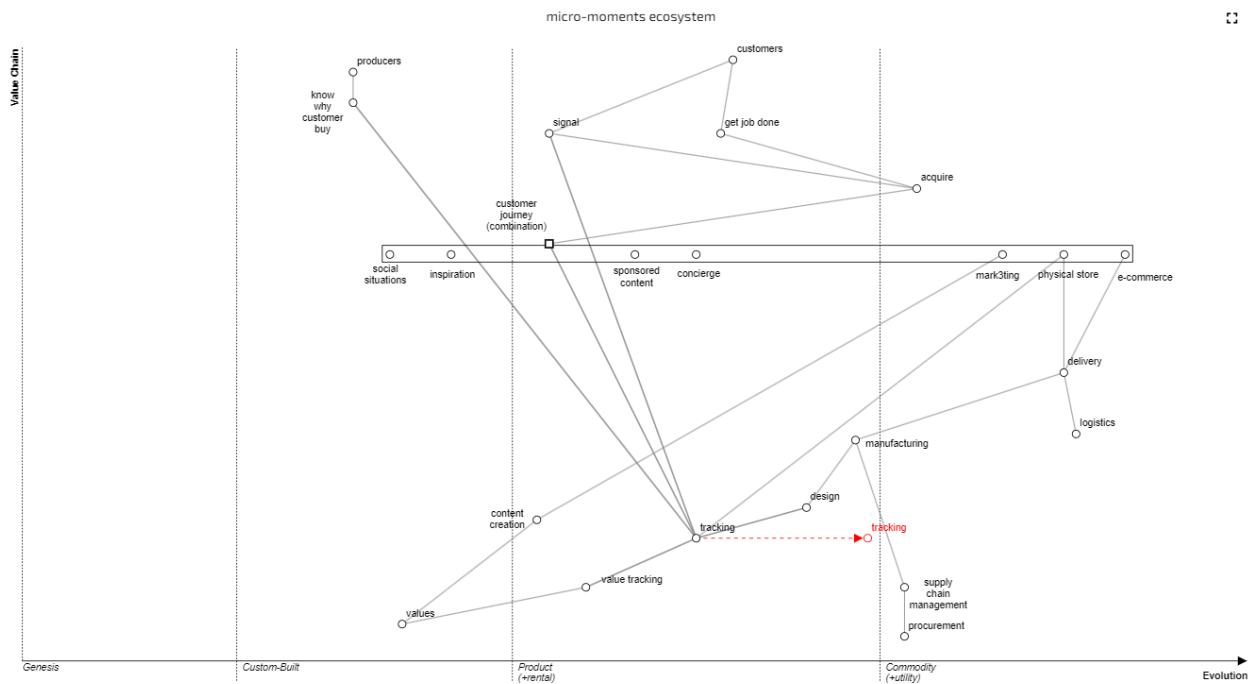
Object 2.4 Value Received: connection where Relationship Formation feeds forward into Exposure

Object 2.5 Values Alignment: connection to the intersection among three spheres of Value: Values of the person, Values of the influencers in the sphere of influence of a person or brand, and the Values of the brand itself.

Note, examples of a brand's Values could be one or more of the following: *Lifestyle beyond the product, Experimentation, Digital Life, Refresh and Make a Difference, People and Positive Change*

Considering the Micro Moments as Capabilities, and projecting a Wardley Map View (Daniel, 2023) of those Micro Moments, a cascading view of interconnected Micro Moments emerges (see Figure B).

Figure B: Wardley Map view of exemplary Micro Moment Capabilities



One benefit of the view in Figure B, is the Micro Moments Ecosystem exposes a way to organize the Micro Moments of business capabilities, in order to create several Outcomes:

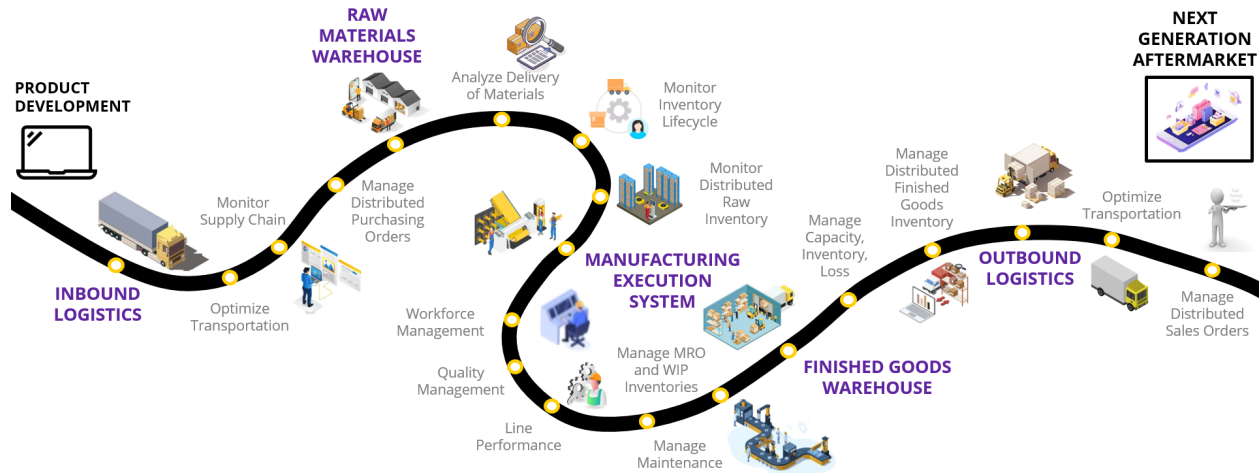
- (1) build a coherent, adaptive representation of customer journey consisting of much smaller moments
- (2) can easily improve individual business capabilities so that the efficiency of the entire system gets improved

See (Daniel, 2023) for a further explanation of the Wardley Map visual communication system applied in this diagram.

Applied to a Manufacturing and Supply Chain Ecosystem, the embodiment in Figure C represents the flows and micro moments as a journey. Throughout the journey, the ecosystem sends information back and forward based on Micro Moment events, and how they relate to each other through their complex connections. It is not sufficient to just have the Micro Moments exchange information in a linear sequence; the context is important. The ecosystem must capture and preserve context so that the Micro Moments can react to the context. This goes beyond merely crafting a capability to react to a data point; the entire ecosystem can be impacted and contexts propagate through the connections and the corresponding reactions of the Micro Moments.

Therefore, while seemingly depicted as linear in Figure C, the journey is not just left to right as in a traditional timeline. Such a linear-only view takes it away from the *distributed* data and analysis that occurs simultaneous across the journey. Each Micro Moment that is sequenced and distributed at various points in the flow, are also needed and/or can influence the flow itself.

Figure C: Manufacturing and Supply Chain Embodiment, journey-based view



In Figure C, the timeline is stretched out linearly left to right, with various Micro Moments noted along the timeline. This becomes a linear sequence of Micro Moments captured within the holistically iterative view. It is important to note that while the timeline is depicted linearly, information is flowing in multiple directions, so that it is made visible and available to all people at one time through the glass pipeline. The flow of where it needs to go, when it needs to go, is a key aspect of the invention. The flow of a supply chain may appear linear: idea, supply, production, distributed into the environment, leading to the operational dynamics of consumer and disposal. However, as the flow occurs, information is also exchanged in a backward direction “upstream”. This “upstream” flow enables dynamic responses for refinements, improvements, and or quality enhancements. The initial process feeds forward, while the embedded data simultaneously flows in multiple directions.

Still other advantages of various embodiments will become apparent to those skilled in this art from the above descriptions wherein there is shown and described exemplary embodiments of this invention simply for the purposes of illustration. As will be realized, the invention is capable of other different aspects and embodiments without departing from the scope of the invention. Accordingly, the advantages, drawings, and descriptions are illustrative in nature and not restrictive in nature.

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