Practice Article

Nano entity economics systems

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The following concepts, in italics, to address these needs are patent pending in the United States and internationally under the Patent Cooperation Treaty and all rights are reserved.

ABSTRACT A new *Individual Nano Entity Lifecycles* methodology should be used to understand and predict individual entity behavior at the smallest, or nano, level of each dimension of their actions. These predicted patterns can then be aggregated and analyzed to produce lifetime lifecycle predictions and values that take into account all the dimensions of the entity and their interactions. Marketing, RM, CRM and other disciplines should base their actions on this same information at both a dimensional and an aggregate level. Then all of the functions in an organization that impact demand and all the functions that impact supply should apply this new approach to manipulate the demand and supply curves at a nano level instead of trying to influence these curves at a macro-segment level. All the areas in an organization that impact entities need to be coordinated and focused on that entities predicted lifecycles, so the entity only receives pertinent influences. There needs to be an interface that allows users to see, on one screen, all the areas impacting an entity, product, date, etc. That screen should also allow users to enter parameters and have the interface find all the relevant information from all needed systems, deliver a report and show all these systems in separate windows on one screen to ease changes and drill down.

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The future of Revenue Management (RM) and pricing is dependent on change. RM's strength is that it is becoming essentially a way of thinking and not just a predetermined structure or model. People are driving this change. People create almost every entity or action in the business world or markets. People

today are far different than they were when yield management began over 30 years ago in the late 1970s. Today, people do not want to be segmented, controlled, restricted, told no – people want it their way and they want it now. This trend will only accelerate in the future as technology allows us to instantly see, compare,

connect with anyone in real time or ask for and expect anything we want. Organizations that can satisfy these needs, by developing a one to one relationship with this new breed of individuals, should be rewarded with loyalty. As stated before, 'those who refuse to learn from history are doomed to repeat it'. People and organizations that refuse to embrace change will become history. The following ideas can apply to any industry, particularly where customers can be identified and prices and/or availability can be controlled by customer.

How does this impact the future of RM and pricing and its way of thinking? Our thoughts must revolve more around the individual. An individual is a person who wants things their way. A segment, as defined and used today by most organizations, does not contain true individuals. Today many 'segments' contain members who only share one attribute. Their other attributes, which might be more important, are very different and are ignored. They are a 'one layer' segment. Some people will still blend into segments and follow the person that is in front of them. These will not be the leaders, or the achievers, or probably those with above average disposable income. Organizations must seek the individuals and learn how to understand them, give them what they want and nurture their loyalty. Segmenting will still exist and be a part of a successful mass-market strategy, but organizations that learn how to move people from segmented marketing to individual one to one marketing will reap a premium from these new efforts. More differentiated products and brands that are not in the commodity price wars will be able to more effectively implement these strategies.

RM was born based on its ability to segment the market. Think about the future as many 'markets of one' (Gilmore and Pine, 2010). These are not new thoughts, so how has RM and pricing failed to adapt? RM has been growing along a 30-year-old trajectory whereas its launch pad has morphed into a virtual world. It is time for some midcourse corrections or we will not only miss many valuable

new targets, we may become a target ourselves by becoming an obstacle to this universal and rapidly accelerating change.

Change is a slippery slope for organizations that are in a constant fight for market share in a weak economy. It is foolish to make changes too quickly and risk losing the market share that you already have. Therefore, the changes and ideas presented here will have to be carefully implemented in phases using techniques including control groups. Otherwise, organizations will not take these risks. These changes must be accomplished while maintaining or improving current competitive positions or the organization will decline.

How can RM and pricing adapt to this fundamental change? First, in a macro sense, we need to apply RM's techniques and ways of thinking, and my concepts in this article, to both the demand and supply curves in an organization. Should not RM and Supply Chain Management merge? Should not they be better integrated with all the other functions in an organization that influences demand or supply and become a new management science called Profit Optimization? Should not organizations benefit from a holistic view of both the demand and supply sides of the market equilibrium that are coordinated, balanced and integrated into one group? Would not this allow the organization to achieve more profitable market equilibriums, if both sides are managed by the same team with a goal of achieving a desired balance? Instead, demand is too often being asked to sell what supply has created. Are economies of scale more important than satisfying your markets' true desires? Do the organization's demand influencing functions really know the desires of individuals close enough to tell supply what needs to be created for this new breed of individual entities? How can one to one marketing succeed if supply does not really know what the individuals want? Somewhere in the organization a new function needs to watch and balance supply and demand on a daily basis at a micro level.

Organizations need to stop trying to shift demand or supply curves by mainly targeting customers or vendors using market segmentation. Trying to shift a whole demand or supply curve, or buy market or supply share, is at best a painful and costly failure to an economist. This is usually only possible with discounts, which is all that many organizations are trying to do today.

Organizations also need to stop focusing RM on just tactical profit optimization. It is very possible that this focus is losing profits in the long run. Should we focus on maximizing profits for one night, flight or sailing or should we focus on long-term strategic profits? Should we gain an extra \$20 for this transaction and risk a long-term relationship with an entity that we will deny who has thousands of dollars in future profit potential for the organization? Every RM system that I know focuses on tactical profits and does not even know what strategic profits are lost.

In order to address these issues and develop the approaches that I have described we need to: (1) Predict individual's lifetime behavior patterns or lifecycles based on each new action or interaction. (2) Assure that all interactions with individuals or for products or future dates are coordinated and are focused on the customers' predicted lifecycles. (3) Manage the numerous market equilibriums, on both the supply and the demand sides of the organization, by optimizing each of the individual entity's values and their individual decision points. An entity is either a customer or a supplier. These three primary required changes are identified and addressed below.

Each step can add great value by itself. Together they can create an 'Individual Nano Entity Lifecycles Economics System' that targets and predicts the smallest dimensions of every entity that interacts with the organization. Lifecycles for each entity can be used to coordinate and focus organizational efforts and this knowledge and leverage can be used to affect the demand and supply curves while building loyalty, without resorting to discounting

as a primary approach. Building and following a true one to one multi-dimensional approach with entities might even work better than discounting. These methods can be automated and combined into a systematic end-to-end approach to leveraging these concepts to optimize profits. This is too complex and too vast to accomplish manually.

As a result, organizations will have a better understanding, as one example, when to place an offer before an individual and what that offer needs to be. We need to create supply that intersects demand where the demand is occurring from this new 'now generation.' Organizations need to proactively control this through coordinating every action or interaction with the individual or entity. Today, it is the customer who sees how unorganized all the functions are who create actions that touch demand in our organizations. If we send an individual an offer that they are not ready for, or for a product they do not want, they feel like they have received 'junk mail' and are part of a mailing segment. This breaks a one to one relationship and eventually they stop reading these offers. They no longer feel 'special,' and are no longer loyal to the organization.

First, we need to predict entities future lifecycles. In the last issue of The Journal, I wrote a future article about one of the methodologies in my new 'Individual Nano Entity Economics' concept. This is a term that I have created to describe a new systematic approach to optimizing profits by *placing the entities, based on all of their micro dimensions that the organization deals with in the center of all of the organizations decisions*. In that article, I described the need for a new methodology that would predict the future behavior patterns of entities. The new methodology *would determine the expected future lifecycles of an entity – one lifecycle for each dimension of their existence (demographics) or their interactions with the organization or any other action or interaction. The methodology would then analyze all of these different dimensions and their different predicted lifecycles for that entity, and compare it to other entities, to determine their correlations. An aggregated multi-dimensional master*

individual lifecycle would be created that can drill down into each dimension. The resulting Individual Nano Entity Lifecycles would understand how to consider all of the influences from all of their dimensions when determining what actions to expect from an entity.

This would enable RM to apply customer centric dynamic pricing based on the **future lifetime** value of an entity. Today, pricing systems rely on the past historical value of an entity or probabilities for one or a few future interactions. We need to be able to reward loyalty and purchase behavior with favorable pricing and availability that is based on the entity's future value to the company – not on their past value. The lifecycles of entities are not horizontal flat lines. Some lifecycles are on the upward slope of building a relationship whereas others are on the end of their plateaus and are expected to slow down their spending and eventually disappear. We need to know this and use it in our pricing, marketing, loyalty programs and any other functions that touch these entities. Loyalty deserves rewards at the time of purchase – not points to be redeemed later. An entity with a high probability of future above average value to the organization deserves special treatment – because acquiring new customers with long-term value potential is much harder than retaining those who you already have.

Second, we need to assure that all interactions with individuals or for products or future dates are coordinated and are focused on the entities' predicted lifecycles. In order to retain these valuable assets, we need to assure that all the functions in an organization share the same view of that entity and how the organization should interact with them. Today RM sets prices and availability, and often other areas of the company take actions that do not support these parameters. Individuals receive a communication and then find that either it does not really apply to them or is no longer available. The communication is sent to a 'one or two layer segment' not based on all of the individual's dimensional traits. Or due to restrictions they cannot take the action that they are being sent

incentives to take. Either way it is the entity, who sees how uncoordinated the organization is in its interactions with them. In the future, all functions in a company need to share one predicted detailed future vision of each entity's lifecycle and act and be coordinated internally accordingly.

This same kind of coordination and focus is needed when looking at all the actions an organization is taking, whether we are looking at an individual or a product or future date. It is too hard today to see all the actions a company is taking for an individual or a future product or date to assure that they are coordinated. If a functional area (marketing, sales, distribution, RM, CRM on the demand side) of an organization plans an action, how hard is it today for them to see how their effort will compliment or distract from other actions? Think about how many dates and actions need to be coordinated and all the different systems that need to be consulted for each date to see all the actions that the organization is taking. Organizations today are fragmented with different functions existing in silos with their own systems. It is impossible for Senior Management to coordinate this with today's tools. Future RM departments should have a role in policing all the interactions with individuals (on both the demand and the supply sides of the organization) for future dates and products. How can they accomplish this task today?

Today, it is a massive effort to see if all the actions of a company are coordinated for an individual or on a future date for a product. It can take hours to look into the actions and systems of marketing, distribution, CRM and RM to determine what messages they are each sending out and whether they are coordinated. Organizations need to implement the types of Command, Control, Communication and Information (C³I) systems that have long been used in military and intelligence operations. There needs to be *one screen where a user can go to see all the different systems and actions that all the functions in an organization are sending into the*

marketplace. A user interface needs to be developed to allow users to ask the system to show them all the actions for a certain area and have the system find these and show them to the user along with windows that contain the live systems from each functional area, so changes or further digging can be more easily accomplished. Exception reporting and alarms need to be available in this user interface to allow the user to be alerted when certain parameters across multiple functions and systems are identified that require user interactions.

The third point, managing the numerous market equilibriums on both the supply and the demand sides of the organization by optimizing each of the individual entity's values and their individual decision points can be accomplished once the two previous points are implemented. Instead of trying to shift demand or supply curves by targeting market segments, once one

to one marketing relationships based on predictive analytics are accomplished, we can optimize existing interests or change interests and their curves from the inside one point at a time. We can optimize individual relationships on both the demand and supply curves instead of trying to shift whole curves.

These are not small steps. These steps are not without peril. However, these steps will allow organizations to enter a new era of profit optimization that embraces these new demands from the market. This is the change that embraces and understands the new customer instead of trying to segment them with existing techniques. One reasoned step at a time is needed. A scientific approach can turn this from a suicide mission into a successful new addition to existing capabilities. Let the journey begin...