Understanding Unique ID Solutions

Strategic and Operational Approaches for Identifying Customers

Peppers&Rogers Group

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Many organizations are undertaking initiatives to study, design and implement a unique identification system for providing better management of customer relationships. These initiatives are typically required in the transformation to a Customer Relationship Management (CRM) strategy, providing firms with new ways to improve operational performance. A unique identification approach to CRM will fundamentally change how a firm competes by having full visibility of customer financial, operating and interaction data. Moving from aggregate data on a product or brand equity basis to the individual customer level of analytics is essential to understanding and managing the revenue and cost drivers behind aggregate results.

Businesses that understand their customers' needs and value are better able to compete. Too often, a company may have been at the mercy of competitors who deploy sophisticated tools for tracking and understanding individual customer behavior. A "unique ID" is the prerequisite for gathering, analyzing, and decision-making based on intelligence about customers.

Understanding and acting on data about customer differences will enable the enterprise to become more competitive and will support all customer-facing initiatives—whether that be increasing revenue, improving efficiency, boosting sales effectiveness, or increasing the length of a customer relationship and the value of that relationship over time.

Simply put, customers provide measurable value to an organization. The best way to track the inflow or loss of this value is to track individual customer behavior. An ID for the organizations' Most Valuable and Most Growable Customers is critical to this measurement activity. This white paper:

- Defines alternative solutions to establishing a unique ID
- Weighs the risks and advantages of each option
- Recommends a path for implementation

Technology is One Component

Information strategy planners should note that technology answers are often the simplest part of the ID puzzle. Decision-making about customer identification can be ranked in order of difficulty:

1. Organizational impact
2. Process impact
3. Investment impact
4. Technology selection

Technology itself should never drive the fundamental customer information solution any more than a hammer or electrical wiring should guide the design of a house. Technology decisions should be driven by customer strategy, business requirements and rules to achieve the strategy, and an assessment of the people and processes necessary to implement the business requirements and support the business rules. A company must balance proposed ID solutions, which may support programs to improve revenue growth or cost efficiency. Moreover, some solutions may not be aligned with the fundamental infrastructure or business processes that make their organization a unique institution. This paper provides the framework for evaluation.

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Three Considerations

A customer ID solution requires balancing several "cost" factors, which include the real financial costs of investment as well as the "invisible" costs of (1) organizational challenges, (2) technology choices (such as complexity of implementation or the opportunity cost of investing resources in one area at the expense of another), and (3) impact on business processes. (See Figure 1.) The analysis of various solutions in this paper addresses each of these factors.

Organization and ID

Organizational impact must be assessed, forecasted, and alleviated where negative. The risk of not doing so will lead to organizational issues arising as barriers in more obvious, decision pathways—including technology, investment and business-process agendas. Developing an ID solution that supports the organization requires:

- Identification and articulation of customer and organizational objectives
- Scoring of organizational factors (people, process, technology, etc.) on the impact and feasibility of unique ID program design. This is visualized as a matrix in which "threats to success" are organizational factors that have high impact on success but impede feasibility of implementation (See Figure 2.)
- Rapid definition of solutions for key organizational barriers is critical for those that will have a high impact on success and are least feasible

A company should develop objective scoring models for organizational issues as it moves forward with unique ID planning. Once threats to success in the organization are listed, management has six basic options:

- *Influence*—use communications to shape change
- *Reward*—create new incentives for personnel to behave positively regarding design and deployment of the customer ID program
- *Protect*—isolation of organizational systems vital to the health of the organization that may be negatively affected
- *Modify*—change organizational processes to support ID when the benefit outweighs the cost
- *Balance*—fill the gap in the organization from one impediment by creating or moving support resources from elsewhere in the organization
- *Remove*—make decisions about organizational factors that will impede success of the unique ID deployment

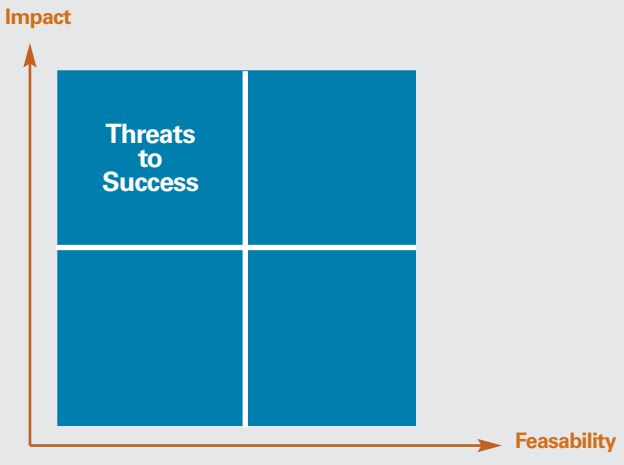
Figure 1: **Unique IDS to Improve Performance**

The unique ID solution must balance the hidden costs of impact, process and technology.

Source: Peppers & Rogers Group

Figure 2: **Setting Priorities**

Organizational factors mapped in the upper left quadrant must be addressed in ID planning.



Source: Peppers & Rogers Group

Making the Decision

As noted, the decisions and courses of action to follow regarding business process and investment are of moderate difficulty. Like the organizational decision-making arena, there are recognized methods for gathering data and applying logic to the questions of business processes and investment. Usually, once all the participants have agreed on the basic facts and understand the logic (even though there may be some flaws in the data or what is known about the situation), applying ROI analyses and some business process modeling usually clarifies the options and indicates which are the most operationally sound and financially rewarding.

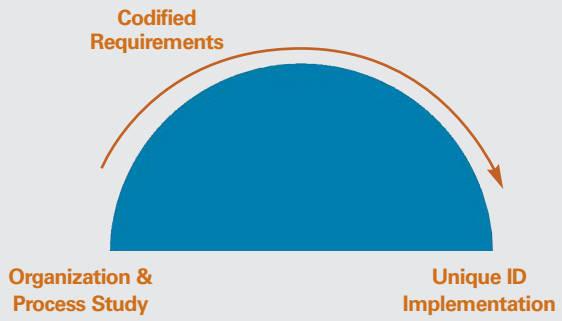
At the other extreme—*the decisions that can best be rationalized and quantified*—are technology issues. Technology issues revolve around computing hardware, access control, network demands, application design and content and development lifecycles. Once business requirements are clarified and crystallized, technology decisions can follow clearly defined paths.

The bridge between operational/process factors and the core technology decisions that culminate in the ID solution has two spans: *business requirements* and its translation, *systems requirements*. (See Figure 3.) These documents codify the ID solution into technology parameters (number of users, number of transactions per period, preferred access modes, data to be stored, system performance and reliability, etc.). Those parameters then flesh out the hardware capacity planning and technology options that will meet the needs of the project. To be successful, a proposed ID solution must:

- Clearly provide a relevant and measurable benefit to the customer
- Inventory the benefits and the potential negative impacts on business processes
- Prioritize potential risk areas
- Propose solutions that address the above priorities and risks, and satisfy stakeholders
- Define all ID solutions in business requirements and systems requirements documentation
- Monitor responses (e.g. proposals from vendors) and implementation of planned requirements to ensure compliance with customer and business objectives

Figure 3: **Meeting Firm Needs**

Business and systems requirements bridge the needs of the firm.



Source: Peppers & Rogers Group

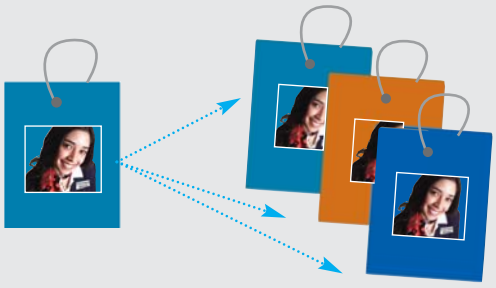
Identifying the Puzzle Pieces

The first step in defining the unique ID solution is to take inventory of ID components. The definitions are basic, but an organization's ability to neglect one of these key components in a unique ID system is all too common:

- Business@location: A uniquely named organization at one physical address. "Business" can be any type of organization, including, but not limited to: a commercial entity, a religious group, a government entity, etc.
- Business Process: A business process is a set of work activities that an organization performs on a recurring basis to accomplish some intended or unintended goal.

Figure 4: **One Person, Many Roles**

One person also moves in and out of many roles. The ID solution must track multiple dimensions of unique identity.



Source: Peppers & Rogers Group

- Customer: A customer is a business entity or a person who utilizes a paid service of the firm.
- Person: A person is any human being. A person may be issued a tag for identification purposes.
- Role: Role is the position a person holds in a business. A role is the activity or title that a person is responsible for at a business's particular location. A person can have multiple roles. *(See Figure 4)*
- System: A system is an electronic computing facility utilized by the enterprise or its designated agents to aid or implement a business process.
- User: A user is any person, authorized or unauthorized, who accesses or uses a system.

Structural Solutions

Once business requirements are established and unique ID components are defined, the firm must turn its focus to the *structure* of the ID system. Different ID systems have vastly different structures, each with several advantages and disadvantages. The models of identification of greatest interest are:

1. Pairwise
2. "Hub and Spoke" (also known as "Rosetta Stone" and "ID as a Service")
3. Repository/Data Stewardship/Flashcut Other, less common system structures include:
4. Sequential
5. Data warehouse
6. Application bound
7. Hybrid

Models 1, 2 and 3 have the greatest potential benefit, and are described in detail below.

Pairwise

In the "pairwise" approach to customer identification, each system in the enterprise establishes communication with each other relevant system. (See Figure 5.) The communication between systems may be via file transfers, database updates, media exchanges, etc. This communication is usually developed on an ad hoc basis over time as the systems are designed and deployed for various business purposes and special projects. When a customer is identified in one system, that system sends the information to the other systems that it has a relationship with.

Each line between the systems represents a data path and is a source of expense due to maintenance and the need for joint planning. It is obvious that this method of communications requires the maintenance of a large number of interfaces.

Advantages: In most organizations, the pairwise method of updating and maintaining customer identification is the de facto method. Hence it is built into the budget and does not require new outlays. The headcount for maintaining the existing system is usually baselined as well. This model is often the path of least resistance.

Disadvantages: The primary problem with this approach is that Customer ID is an afterthought. Each of the systems involved in a pairwise sharing of ID generally has evolved from a business purpose other than customer identification. A means of identifying a customer, usually the least-cost means, was developed in each system in order to enable a transaction type. Rarely does this means of customer ID satisfy other applications within the enterprise.

One consequence of pairwise evolution is that the "data hygiene" tends to get neglected. Usually hygiene activities, since they are not part of the business process the application

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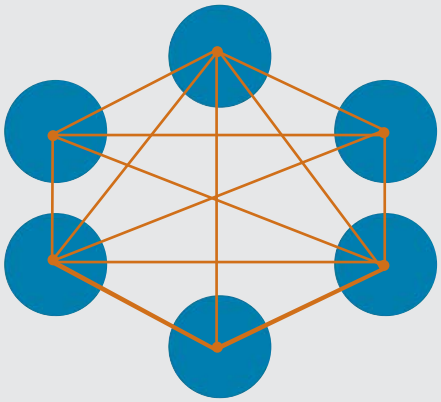
Figure 5: **Pairwise**

In this structure, each system "talks" to every other relevant service.



Source: Peppers & Rogers Group

supports, are either ad hoc or completely neglected. That in turn generates corrupt records that have to be reconciled or purged. Yet, reconciliation and hygiene activities often suffer from a lack of funding and sponsorship.

Another problem is that each system evolved a Customer ID method to support its business transactions, and usually not much more. That means different systems have different formats for an ID. Across systems, there may be no common denominator, or worse, they may reuse the same identifiers, leading to false linkages.

If pairwise transmission of IDs is the standard, a problem known as synchronization arises. Either system may have a contact with the customer, which leads to identification updates (name change, address change, etc.). Since identification is a by-product, the method of dealing with this new data varies. In theory customer reconciliation should be easy, but given legacy systems architectures, it is often quite difficult. When paired systems attempt to reconcile their customers, it becomes difficult to determine what is the most current information. In some cases, the records required for synchronization "float" in a third system that is responsible for reformatting or transmitting the records and the paired systems initiate an endless loop, making accurate customer identification a matter of coincidence, not design. Synchronization in a pairwise model is made even more complex if the customers identified have hierarchies to be maintained. This multiplies the number of writes and increases the opportunity for referential integrity problems, the need for additional business rules, etc.

Pairwise updates are usually the result of systems owners either negotiating relationships between their systems for some goal, or the owners being told to link their systems for someone else's goals. As the goals change, or when they are imposed, the accuracy of the data contained, linked or shared is usually secondary to the system owner's original interests.

Organization Evaluation: Pairwise systems communications are often a source of contention due to varying applications needs and their timing. Maintenance of the communications link is frequently ad hoc, and the linkage can be fragile as system owners accept or revise goals.

Technical Evaluation: It is very complex to synchronize systems lifecycles (upgrades, modifications etc.) when this level of dependency exists. Multiplicity of interfaces increases cost of maintenance. Data synchronization and integrity is a continuous problem.

Business Process Evaluation: Variations in definition of customer, conflicting business purposes of the underlying applications and the tendency to let the system definition override the business definition of the customer make this an inefficient way to do business.

Investment Evaluation: Embedded costs in legacy systems make it difficult to rationalize further investment. Due to the complex nature of the pairwise communications links, modifying or upgrading loosely linked systems is usually a difficult process.

Hub and Spoke

The hub and spoke model is a representation of customer identification as a *service*. Designing and establishing customer identification as a service greatly simplifies the task of developing a unique customer ID. Viewing customer ID as a service instead of as an application is often a breakthrough for many enterprises.

A familiar analogy is that of Directory Assistance (DA), run by various phone companies. Customers use this service sporadically and it is open to all telephone users on an as-needed basis. It does not burden other customer-facing systems with demands for data. The caller contacts DA when he or she has a need to learn the telephonic identity of a subscriber in the telephone system.

Another such analogy is that of the role of the Domain Name Server (DNS) in the Internet. The

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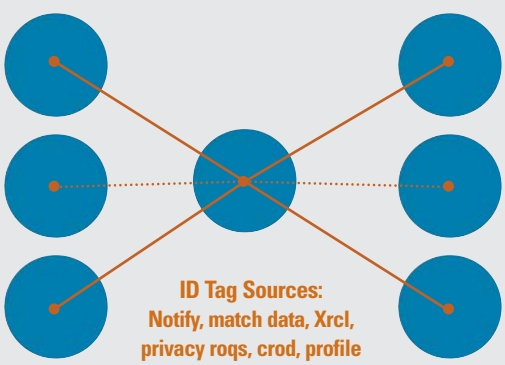
Figure 6: **The Service Model**

Viewing customer ID as a service, structured as a "hub and spoke" system, is often a breakthrough.



Source: Peppers & Rogers Group

Domain Name Service protocol specifies how computers in the Internet are to publish their identity to the world in order to make it possible for other computers to find them and contact them. Once a computer connects on the Internet, its presence and assigned ID number are established by a DNS and are then published to the rest of the Internet community. The DNS maintains a current record of the computer's online identity and assists other systems in routing communications between machines that need to establish data transfer.

In the context of customer identification, an Identifier Service is established by placing a server in a "central" networked position so that it is accessible by subscribers, surrounding the business systems. (See Figure 6.) The subscribers submit requests to the service for identification of customers or persons they come in contact with. The ID server undertakes a series of steps to determine if the request in question concerns a previously known person or business or whether a new identification token is required. Typically, the service also undertakes a batch pre-load before it goes into service in order to create a base set of IDs.

The service usually performs the following activities: ID generation, look-ups, matches, near matches, ID distribution, and audit trail maintenance. In addition, the service maintains a "credibility" rating on the matches it has performed, so that future updates and matches can be evaluated as potential replacements for existing pairings. The ID service performs its duties by following an extensive set of business rules.

In some organizations, additional data is placed into the server as a convenience. Typically this is called "profile data." Profile data consists of roll-ups from other systems, personal preferences (e.g. privacy options) or other data that summarizes some aspect of the customer to the firm. However, maintaining extensive profile data causes system development and maintenance costs to escalate rapidly.

Advantages: ID as a service creates maximum flexibility for the organization in that other systems can join when they need to without disrupting their systems development plans. The ID service concept minimizes cost and untangles the Gordian knot of having ID bundled into one or many applications.

Disadvantages: ID *per se* does not generate an immediate benefit to the enterprise. While it is a necessary step for organizations wishing to be customer focused, ID by itself is not sufficient to realize benefits. Additional steps must be undertaken, such as data joins or establishment of cross-referencing keys in subscribing systems. In addition, some of the costs of a new ID system are displaced into the interfaces with the subscribing systems. This latter point, however, will be true of almost any method of customer identification.

Organizational Challenges: Initiating an ID server generally is innocuous because it does not immediately require other systems owners to change their systems in significant ways. For some owners the service is welcome and they will eagerly participate. Others may resist making systems changes, but will come to the realization that the imposition is minimal compared to alternative methods of implementing a global identifier.

The cost of implementing an ID service is generally low, much lower than implementations that provide a wide variety of other functions, such as ERP systems.

Technical Evaluation: Implementing ID as a service makes maximum use of the concepts of *modularity* and *flexibility* in systems design. Since the service is callable by subscribing systems, it can be used or not used, as the subscribers' business processes require. This gives systems planners the greatest range of options for staging modifications. The messages exchanged by the ID service and the subscribing systems tend to be short and require low overhead.

Business Process Evaluation: Generally, business process changes are required once a system subscribes to the ID service, since either systems or reps will have some altered or new data flows to include in their processing. However, having a reliable customer identifier available usually simplifies other business processes, especially those concerning locating customer data.

Investment Evaluation: The cost of implementing an ID service is generally low, much lower than implementations that provide a wide variety of other functions, such as ERP systems, CRM systems, etc. Nonetheless, there are costs, including development or acquisition costs and maintenance costs. The implementation of ID as a service tends to drive some of the project development costs into the interfaces with subscribing systems. However, any other implementation would bear similar costs for every system it attempted to interface with.

Data Stewardship

A third model is that of Data Stewardship, also known as Repository or Flashcut. In this model, ownership of the definition of a data entity such as customer is given to an organization to control. In customer ID systems, the organization with control is often Marketing, which uses standards, budgets and other leverage to implement a common identifier across all legacy systems of interest. Under the standards umbrella, permission to undertake systems upgrades and modifications is contingent on the modification including the common ID in every system that needs work completed.

Advantages: This method does not require technical skill directly, but instead relinquishes those roles to existing systems owners and corporate systems architects.

Disadvantages: Generally owners of systems that are providing business value will have reasons and adequate means to resist including ID on their list of projects. The details of the reasons to leave ID off the project list vary, but these themes almost always present themselves.

Organizational Challenges: This method is almost purely organizational and is an exercise in persuasion.

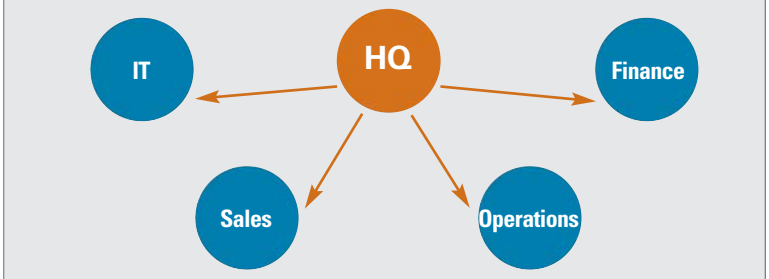
Technical Evaluation: Although this is not strictly a technical approach, it is highly likely that, left to their own methods, the systems owners will each arrive at different solutions. In addition, the inefficient pairwise nature of ID updates—with all their attendant problems—is likely to be preserved.

Business Process Evaluation: In addition to having to create some new business processes to take advantage of a common identifier, a new crop of processes will have to be spawned to ensure that systems planners and budgeters get the priority for identification worked into each system.

Investment Evaluation: It is difficult to evidence regarding system owner behavior and intentions, investment and returns cannot be calculated.

Figure 7: **Setting Standards**

In data stewardship, one group prepares ID definitions that other groups must follow.



Source: Peppers & Rogers Group

Conclusion

Analysis indicates many organizations will benefit from moving to method 2, the Hub and Spoke ID as a service concept.

In a legacy environment, the Hub and Spoke approach may be the route mostly likely to succeed for reasons of cost, organizational challenges, value derived, management of technology risks, and business process. Key benefits include:

- A customer ID service can be established via the lowest-cost route be the lower-cost method for enabling customer ID
- The module system also enables control over timing of expansion
- The small scale of systems work reduces technology failure risks and increases ability to manage these risks
- Some business processes will require changes, but these changes are likely to be less extensive than those imposed by larger system efforts
- The minimal imposition on existing systems and their development plans will reduce organizational resistance

When companies successfully wed strategic intelligence with operational practices, they position themselves to maximize return via customer knowledge. The unique ID solutions outlined in this paper provide an initial glimpse into this process, setting the stage for organizations looking to seize competitive advantage by identifying and acting upon customers' needs and value. Those firms able to match strategic direction with deep analytics, and use that know-how to create profitable relationships with key customers will compete and win in the evolving customer-centric economy.

About Peppers & Rogers Group

Peppers & Rogers Group is dedicated to helping its clients improve business performance by acquiring, retaining and growing profitable customers. As products become commodities and globalization picks up speed, customers have become the scarcest resource in business. They hold the keys to higher profit today and stronger enterprise value tomorrow. We help clients achieve these goals by building the right relationships with the right customers over the right channels.

We earn our keep by solving the business problems of our clients. By delivering superior customer-centric business strategy, we remove the operational and organizational barriers that stand in the way of profitable customer relationships. We show clients where to focus customer-facing resources to improve the performance of their marketing, sales and service initiatives.

For more information, visit **www.peppersandrogersgroup.com**

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