

# Improving the Customer Dimension

Four steps to an effective customer dimension



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## The importance of the customer dimension

Keeping track of customer data has long been a central goal of Business Intelligence (BI). Good BI is invaluable in helping companies decipher what customers want, where they buy, and how they respond to products. The core of customer BI is the customer dimension, and the design and complexity of the customer dimension can shape how useful, flexible, and scalable your customer intelligence can be.

With improvements in data mining and the increased availability of customer data online, customer information is more available, more complex, and more nuanced than ever. Customer dimensions must adapt in order to keep up. Many companies are reacting by creating or expanding the customer dimension of their BI solution. According to one study, two-thirds of organizations are considering improving their BI solutions because they are dissatisfied with the reliability or the scope of their current implementation.<sup>1</sup>

The challenges presented by the customer dimension are often similar for companies of all sizes, from small startups to Fortune 500 corporations. Customer data is complex. It poses a range of issues: How can we standardize across the organization? Which attributes should be carried over from source systems? How do we maintain a unique identifier for each customer?

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In implementing a customer dimension, every organization struggles to walk the line between keeping customer data simple enough to maintain and capturing the actual complexity of customer demographics, motivations, and interactions.

You can solve these issues smoothly by partnering with BI experts who can provide frameworks for reliable data analysis and architecture in the envisioning and planning phases of your customer dimension. Foresight saves time and money whether you're implementing a full integrated customer dimension right away or starting with a series of data marts for future integration.

The following four steps will help ensure that your customer dimension solution provides insight quickly and fits your needs in the long run, no matter how modest or expansive your organization or solution.

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<sup>1</sup> [Ventana Research](http://intelligent-enterprise.informationweek.com/channels/business_intelligence/showArticle.jhtml?articleID=225200684), "10 Steps to 21st Century BI & Performance Management." June 1, 2010: [http://intelligent-enterprise.informationweek.com/channels/business\\_intelligence/showArticle.jhtml?articleID=225200684](http://intelligent-enterprise.informationweek.com/channels/business_intelligence/showArticle.jhtml?articleID=225200684).

## 1. Plan for core business needs.

Analyze the questions you're trying to answer, the data you have, and the presentation you're hoping to achieve, and then build your solution around those core needs.

A realistic understanding of why you want to implement the solution—as well as knowing who will use it—will help you avoid wasting time on a solution that fails to live up to expectations or solve real business problems. This step may seem obvious, but it cannot be overstated. More than half of the participants in one study (53%) were “only somewhat confident or not confident at all that their BI technology meets the needs of the organization.”<sup>2</sup> This tells us that many organizations are currently using ineffective tools.

If you plan to implement a business intelligence solution from the ground up, this is your opportunity to avoid veering off course. If you are improving an existing solution, this is your chance to get back on the right track.

Derive your base facts and dimensions directly from existing scenarios and presentation needs—especially in the universal customer dimension (the master dimension that others build on). Examine what business questions you are asking (or being asked) today, and make it your goal to develop a customer dimension that allows for the filtering, grouping, and labeling you will need to present your insights effectively to answer those questions.

## 2. Prepare for flexibility.

No matter how well you know your business needs, you should expect the unexpected—and prepare for it. The key to preparing a flexible customer dimension is designing for consistency.

In order to keep the customer dimension clean and manageable as it grows and expands, you must create clear, consistent data processes and meta-data taxonomy. Guidelines for clean data save your company time and money, even as new sources of customer data become available. Common metadata attributes enable you to maintain consistency across all cubes that you plan to implement.<sup>3</sup>

In order to keep the customer dimension clean and manageable as it grows and expands, create clear, consistent data processes and metadata taxonomy.

To start with, account for the current state of the business by evaluating current processes. Analyze existing data systems and determine common attributes in order to identify and flag attributes that are core to your business. Use a matrix with customer data attributes called out as column headers and data sources called out as row headers. This will provide a full picture of your existing and expected data.

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<sup>2</sup> Ventana Research, “10 Steps to 21st Century BI & Performance Management.” June 1, 2010: [http://intelligent-enterprise.informationweek.com/channels/business\\_intelligence/showArticle.jhtml?articleID=225200684](http://intelligent-enterprise.informationweek.com/channels/business_intelligence/showArticle.jhtml?articleID=225200684).

<sup>3</sup> See Dan Pratte, “Conform facts and dimensions to evolve your data warehouse over time.” April 30, 2001: [http://articles.techrepublic.com.com/5100-10878\\_11-1031680.html](http://articles.techrepublic.com.com/5100-10878_11-1031680.html).

Next, analyze the data types and parameters of each attribute across its sources in order to determine realistic parameters. Looking at the full range of source data will prevent shortsighted, arbitrary limitations (which lead to duplicate attributes and low-quality data) and impose pragmatic limits on data length. An architecture and taxonomy based on the current state of the business will allow you to confidently complete the starting design for the base customer dimension.

A common mistake at the modeling phase is to overcomplicate the customer dimension with attributes that don't exist across the business, but are "somedays" or "nice-to-haves." These imagined attributes complicate the process of loading data, confuse the logic of maintaining it, and create false expectations for presentation.

The best models are not necessarily those that define every possible attribute, but those that define processes and taxonomy in an extensible way so that you can adapt the solution as unforeseen needs arise.

### **3. Prioritize for swift adoption.**

Any BI project struggles to balance the desire for comprehensive design with the need for rapid implementation and adoption. Because customer data is plentiful and rapidly changing, the customer dimension can seem particularly urgent.

In order to speed adoption and start collecting and using data rapidly, prioritize the needs (and circumstances) of the immediate business users.

Departments and individuals within companies need access to varied types and levels of customer data. Different parts of the business track customers as they move through the customer lifecycle from lead generation to registration, retention, and feedback. Each business area requires a different view of the customer.

You might be tempted to integrate these into one "perfect" customer dimension to serve all needs, but that would be a misstep. If you combine all business needs into a single dimension for each customer, you run the risk of creating a rigid model and unnecessarily increasing complexity. To avoid overloading the primary customer dimension, create related "mini-dimensions" or "data marts" to contain specialized or changeable aspects of the customer data.

To plan for these mini-dimensions, evaluate how each will be used. Consider the logic of the solution's architecture and taxonomy from the perspective of the business users:

- Will it make sense to them?
- Will they understand how to input clean data, even with minimal training?
- What kind of reports will you need to generate?
- What questions will be asked of your customer dimension?

Considering how the data will be presented can ease adoption as well as creating internal advocates who will help evangelize for wider adoption among their colleagues.

Once you have discovered which needs and attributes map to each area of the business (and each stage of the customer lifecycle), you can bring together common data elements (first name, last name, etc.) and separate business-specific attributes to separate mini-dimensions. Ease of loading logic helps users understand the capabilities of the cube and reduces redundancy in the data warehouse. Future owners will understand the solution faster and participate in maintenance and data integrity more quickly. It also gives you the ability to bolt on additional systems of record for the customer without reworking your base ETL procedures.

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Creating smaller, simpler “data marts” while creating consistent terminology builds a strong foundation while allowing the solution to become useful very quickly. Prioritizing current needs smooths the adoption process for users across the organization.

**4. Design with the future in mind.**

As important as it is to build for the current state of the business, it is also vital to know that the future will bring different data and different questions.

Designing for the future doesn’t necessarily mean guessing at future needs or creating an unwieldy solution in the quest for comprehensiveness. Instead, acknowledge that there will be unforeseen (and unforeseeable) business needs and design a consistent, reliable core customer dimension that is robust enough to support future growth.

Create a good core customer dimension that covers the variety of ways that data and business needs can change. How do you want to treat the customer over time? How will you partition the physical records as your customer set grows? How do you need to map to a master customer?

It can be a daunting task to build the perfect customer dimension at the outset. Your reporting needs will change over time, but your primary business concerns will be more consistent. You can address secondary needs or incidental reports when they arise—but they should not be allowed to complicate your core solution or compromise usability. To ensure greater scalability and maximize the return on your initial investment, keep your customer dimension built to the core attributes that your business needs in the long term.

**Picturing the effective customer dimension.**

A customer dimension based on these four steps should meet current business needs and scale gracefully to meet future needs. Because it is strongly grounded in well-defined core needs and existing data, it is rapidly relevant. Its consistent taxonomy makes it easier to use and maintain.

While it can be hard to do the preparation that makes your customer dimension as relevant, flexible, and powerful as it can be, it is worth engaging BI experts who can help you envision your effective customer dimension and plan a path to it. The reward is worth it: your customer dimension can be an ally in turning complex, abundant customer data into real insight about customer needs, motivations, and behaviors to help you make better decisions for your business.

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