The latest buzzword in application design is personas. This paper will explain what personas are and how they can be valuable in your organization’s application development efforts.

Developing successful business applications has never been easy. Many organizations find that even after having managed the many challenges involved with launching a new application, they are left with a product that is ignored by users or fails to achieve the desired business goals. This whitepaper is designed to help Marketing and IT managers understand how persona development can streamline the requirements process, reduce overall development time and increase user satisfaction and loyalty. Specifically, this paper answers three key questions that help explain why persona creation is gaining momentum as a fundamental step in the development of successful business applications:

What are personas and how are they used?
What are the benefits of using personas in application development?
How do personas fit into an overall user-centered design methodology?
WHAT ARE PERSONAS AND HOW ARE THEY USED?

It is widely known that persona development, which seeks to zero-in on 'customer' behavior and characteristics, has greatly enhanced marketing and merchandizing strategy in the consumer retail space. By creating a concise set of customer descriptions that embody the major differences in purchasing behavior in their stores, retailers have refocused their messaging and product offerings to better meet the needs of their highest value customers. It is less widely known that the same persona development techniques are being used by industry leading companies to maximize the adoption of business applications in highly competitive markets.

In contrast to retail behavior patterns, business users spend many hours of their workday using a core set of transactional applications. Some of these are provided by their own company and others compete for attention in a competitive marketplace. The user interface of these applications either enhances or inhibits user productivity and loyalty – often directly impacting the revenues generated by these tools. Therefore it is just as important to understand users and develop personas for business applications.

To be effective, persona development must be firmly grounded in user research techniques such as contextual inquiry, user segmentation and profiling, and prioritized task mapping. Strictly speaking, a persona is a narrative description of a user who represents an important segment of the user population. These narrative descriptions, however, only hold value for project teams if they are the culmination and thoughtful synthesis of many sources of information about the user population. This process begins with user interviews. The interview process may start with working assumptions about how the user population can be segmented, but nothing replaces the insights that will be gained by interviewing users in their normal working environments while they are using the application. Insights gained from these interviews will allow the user research team to identify and validate meaningful segments in the user population and document the most important user profiles. User profiles are the foundation layer beneath well constructed personas. The two concepts may seem like they overlap, but a good way to understand the difference is to keep in mind that user profiles describe 'types' of users while personas describe specific people. User profiles have attributes like: "80% Male". In contrast, personas are given names like 'Mike' and have characteristics like: "34 year old investor who has recently quit his job to become a full time day trader."

As an example of the progression from user profiles to personas, consider the difference between a 'Day Trading' stock investor and a 'Buy and Hold' type investor. Both are individual stock market investors, but the differences in their investing goals cause them to have very different needs from an investor portal.
Example 1: Abridged User Profile - Day Trader

GENDER: 85% Male

AGE: 20 – 45

EDUCATION: Wide range: most have BA or some college

MARITAL STATUS: 65% Single

COMFORT WITH TECHNOLOGY: High, regular computer user

DESCRIPTION:
Day traders are constantly watching the market searching for news that will give them reasons to take short or long speculative positions on particular stocks. They stand out from other individual investors in that they frequently take short positions while most retail investors take only long positions on stocks. These users require real-time quotes, intra-day charts and research tools to help them identify potential opportunities.

They favor fast execution times to fit with their fast paced, market timing trades. Because of the large number of individual trades they make, they also seek out low per-trade transaction fees. Their use of an investor portal is heavily centered on trade execution and related tools, and corporate action alerting functionality.

INVESTING CHARACTERISTICS:
• Makes money on short term, speculative positions in the market
• Holds positions for an average length of 2.5 days
• Looks for trends in momentum for stocks where little is known about the company behind the stock

COMMON TASKS:
• Intra-day market monitoring
• Individual stock liquidity and price monitoring
• Advanced trading options such as limit orders, options and bonds
• Preset automatic trade execution rules
• Access to options chains

Compare this with the profile of another type of investor on the next page.
**Example 2: Abridged User Profile - Buy and Hold Investor**

**GENDER:** 50% Male / 50% Female

**AGE:** 28 – 65

**EDUCATION:** Wide range: most have BA or some college

**MARITAL STATUS:** 50% Married / 50% Single

**COMFORT WITH TECHNOLOGY:** Average, comfortable shopping online

**DESCRIPTION:**
‘Buy and hold’ investors make infrequent adjustments to their stock portfolios. They prefer to research individual companies thoroughly before taking positions and tend to hold stocks for multi-year stretches. They look for access to high-level and in-depth company analysis to support their stock purchase decisions and almost never take short positions. Their use of investment portals is centered on portfolio monitoring and research areas. They expect trading functionality to be simple as their transaction activity is infrequent and does not require advanced execution capabilities.

**INVESTING CHARACTERISTICS:**
- Makes infrequent trades and holds them for a long time
- Holds positions for an average of 5-8 years
- Is not as sensitive to per trade transaction fees
- Requires access to deep company analysis

**COMMON TASKS:**
- Portfolio planning
- Advanced portfolio analysis
- In-depth company research

The two user profiles above bring very different functional needs to a personal investment portal which directly results from their divergent goals and motivations as investors. Other factors can also produce divisions in a set of user profiles. The list below provides a high-level breakdown of these types of factors.

- Primary responsibilities and tasks
- Demographics (gender, age, education, geography, language, experience)
- Work environment (company size, office type, travel)
- Technology (availability, extent to which it is used in the job, applications used)
Compare these profiles describing ‘types’ of users with the persona below that paints an in-depth portrait of an individual imaginary user.

**Example 3: Persona**

![Day Trader](image1.png)

Mike

Mike, 34, becoming a full time day trader was the right opportunity at the right time. Although he had kept his job as a Customer Service Manager at a large telecommunications company through several rounds of layoffs, the workload just kept increasing and there was no real job security. His wife Emily, a schoolteacher, brought in a regular paycheck, so they had a safety net. They didn’t have kids (yet!), so their expenses weren’t too high, and Mike felt comfortable accepting a bit more risk. And most importantly, Mike looked forward to a career where his success or failure would depend on his decisions and skills – not the whims of some huge bureaucracy.

Mike and Emily decided to treat this like a real career change. They converted the guest bedroom into an office, and invested in first-rate technology. Mike always felt that one of his strengths was the ability to multi-task, and he plans to take advantage of that in his new job as a day trader. Not only does he have DSL in his office, but also two phone lines and a cable hook-up so he can watch CNBC.

While Mike has always been comfortable with computers, he is still learning how to be an effective day trader. He knows that he will need a variety of monitoring capabilities so he can quickly identify trade opportunities. He is also looking for tools that will be easy to use at first, but that also have the depth and sophistication he will need as he gains experience. He wants to be able to execute simple trades quickly and inexpensively, and may eventually work his way up to more advanced options like limit orders, and setting up automatic trading triggers.

Persona narratives bring the results of disconnected research efforts together within the context of an overall user-centered design approach. Personas present an alternative representation of user profile data that is easily understandable and accessible to team members. They are intended to communicate user details that are easy for team members to keep in mind during the requirements, design, development and testing phases of a project. Personas provide an understanding of the most common or important tasks of the users. This is especially critical in business applications or portals, where it is necessary to design an intuitive workflow that matches the user’s work patterns. Application designers can validate requirements by walking through workflows using each persona to ensure that no obstacles exist in the workflow.
While user profiles can provide important data, personas are simplified and help readers recognize and identify with users as people rather than a collection of facts. While they are representative of typical users and may be assembled using details from several individuals within a user segment, a well-crafted persona is not generic. In fact, well-written personas should be memorable so they can be easily recalled in requirements and design discussions.

These attributes make personas a powerful tool for user-centered design. Personas provide valuable insight into the motivations and personalities of prototypical users, while being quick to read and easily understood. There are few barriers to prevent stakeholders, developers and other team members from reading and comprehending a set of personas. While they are simple in form and structure, the information they contain is flexible and powerful. It can be applied to decisions throughout the process, from project planning and prioritization, through design and development, to evaluation and testing. In this way, personas can support the use and spread of user data throughout the development process and across organizational boundaries.

WHAT ARE THE BENEFITS OF USING PERSONAS IN APPLICATION DEVELOPMENT?

Advantages of using personas in the application development process can be grouped into three categories:

1. Focus Project Goals and Requirements
2. Expedite Development
3. Improve User Productivity and Satisfaction

Focus Project Goals and Requirements

ALIGN STAKEHOLDERS TO SHARED PROJECT GOALS

A thorough understanding of user needs often reveals to stakeholders that the original vision for an application was misguided and should be modified, or that one component should be tabled in favor of another that is more closely aligned with user needs. Similarly, personas can provide another touch point for stakeholders as they seek to align project goals with a prioritized matrix of specific user needs. The more on-target a project is from the start, the higher its chance of success.

Attributes of Personas

A persona provides details which brings a user profile to life.

A persona should describe a detailed (although fictitious) user rather than outlining characteristics of a group.

A persona should include a narrative description for ease of reading and recall (though other summary details can be included as well).
DRIVE REQUIREMENTS BASED ON ACTUAL USER NEEDS

Personas allow user research to be applied to strategic decisions early in the life of a project. Often, project stakeholders make critical business decisions based on partial or erroneous assumptions about users’ needs and motivations. When project team members are educated about the differences between themselves and their target user audience (differences in work environment, technical expertise, level of education, etc.), they are less likely to make these incorrect assumptions. Working from personas allows the team to focus on providing support for the most important goals of the most important users right from the start, rather than learning through a process of trial and error. Requirements, as they are identified and defined, should tie back to one or more persona, and can then be more easily prioritized.

Expedite Development

ENHANCE COLLABORATION AMONGST WORKING TEAMS

When extended project teams share a common understanding of users for an application they can have more efficient meetings regarding specific areas of functionality. User research and personas can be used as a trump card to cut short otherwise open-ended design discussions where different interpretations of requirements may exist between marketing and IT teams. For complex applications with many functional requirements sessions the payoff is multiplied. Furthermore, as a project moves from the design phase into development, the knowledge transfer process is accelerated since the requirements are grounded in personas and user research is the common reference point for all teams.

REDUCE ACCEPTANCE TESTING AND IMPLEMENTATION EFFORT

A lack of understanding of users and their needs can be a major factor in low software acceptance rates, cost over-runs, and even failed projects. Needless complexity can lead to long and difficult development efforts, and to applications that are ultimately rejected or ignored by users. A thorough understanding of user personas eliminates guesswork and can reduce the likelihood that project teams will need to go back to the drawing board and redevelop major sections of an application or make numerous fixes because of ambiguous requirements.

ESTABLISH USABILITY METRICS, TESTING AND VERIFICATION

User profiles and personas have a role to play in the testing, validation, measurement and ongoing management of the usability of applications. Early in a project life cycle, team members should develop usability metrics and test plans. Having personas to help describe representative users allows the usability team to establish better focused test goals and capture necessary metrics. During design and development, usability analysts
may conduct expert evaluations or design walkthroughs of the work in progress, basing their evaluation in part on assumptions about what is appropriate for the given users, tasks and environment. Having personas available can make these assumptions more accurate and better aligned with other project participants. As the project nears completion, more formal usability tests may be conducted. Having personas available can make identification of good testing subjects more efficient, and because personas include descriptions of users’ responsibilities and tasks, they can be used to draft test scenarios that come straight from users’ everyday work processes. Finally, personas provide a reference point for ongoing testing and verification of requirements as new releases are considered.

**Improve User Productivity and Satisfaction**

**IMPROVE USABILITY AND PRODUCTIVITY**
In addition to making the process of creating software more efficient, personas, perhaps most importantly, guide the design of software that is more effective in satisfying user needs. Workflows can be optimized and key tasks and options made more obvious by focusing design through user research. This process of focusing the user interface tasks, language, and layout on personas can also improve the application usability and minimize common user errors.

**REDUCE USER CONFUSION AND TRAINING**
With an understanding of the primary users, the terminology used in the application can be tailored to “speak the language” of the target audience, reducing confusion and errors. Knowing what the user is most likely to want or need allows the designer to feature these capabilities more prominently, reducing the time it takes to access and complete key tasks. The outcome of a user-centered design process using personas is a user experience that is likely to generate fewer errors and require less training, since choices are obvious, presented in a logical manner and communicated in language that is familiar to the target audience.

**INCREASE USER SATISFACTION**
Many business organizations begin the design process focused on features and functions, rather than user needs. Marketing and sales may request features that are present in competitive products. Analysts may describe requirements in terms of features that are derived exclusively from business goals. Technical staff may evaluate software tools based on previously supported functionality. With no way of filtering or assessing requested features, it is not a surprise that many applications and portals become overwhelmed with too many features, or that user interfaces become overly complex as baffled designers and developers try to cram in more capabilities.
CREATE ADDITIONAL INSIGHTS INTO USER NEEDS

User research and personas can help redirect the design focus to genuine user needs, rather than feature checklists. With well-researched personas in mind, the product team can ask, “Which of our users needs this feature?” If the answer is “none of them,” the feature probably does not have a place in the design. Or if the feature is needed by only a small set of users, or under less frequent circumstances, the feature can be located accordingly, reserving important screen real estate for more frequently used and more significant capabilities. Finally, user research efforts often uncover insights into unarticulated, unimagined new services and capabilities. Personas bring the focus of discussion back to users, and the fresh view can be a source of innovation.

HOW DO PERSONAS FIT INTO AN OVERALL USER-CENTERED DESIGN METHODOLOGY?

Persona development is a fundamental component of user-centered design, which seeks to maximize the value of an application for the people who matter most – its user base. As the name implies, a fundamental aim of a “user-centered” design is to maintain the focus on user needs throughout the application development process. While most traditional development methodologies involve the users in some manner, they do not involve them with the frequency or depth necessary to realize substantial benefits or prevent common usability issues. In order to see the most significant improvements, an understanding of the users should inform every phase of the development effort, from early discovery, planning and definition, through design and development, to validation and testing. When user information is properly applied throughout development, organizations can expect to see enhancements to the usability of the application or portal itself, as well as a more efficient development process.

CASE STUDY: FXALL

A great example of an organization that embraces and follows a user-centered design philosophy is FXall, a leading foreign exchange trading portal. Over five years ago when FXall began creating the first version of its portal, CEO Phil Weisberg recognized that ergonomics and usability could become a key differentiator for its high-powered institutional and corporate trading user base. A former FX trader himself, he and the management team decided to invest in undertaking a user-centered design approach from the very beginning. TandemSeven team members conducted extensive user research to understand the nuances across the numerous user profile segments. The personas that resulted are still referenced and used in various design initiatives today as TandemSeven continues to help the firm evolve its portal and trading products. FXall has won countless awards including that of best multi-bank portal from Euromoney, FX Week and Global Investor for four years in a row.

“At FXall we listen to our customers and strive to meet their emerging requirements. Following a user-centered design approach allows us to stay ahead of this challenge and our competitors.”

PHIL WEISBERG
CEO, FXALL
IN SUMMARY

Following a user-centered design process including user profiling and persona development is critical to creating successful portals and business applications. Focusing on users’ needs, skills and environments produces a user experience that reduces errors, expedites tasks and increases user satisfaction. User profiles and personas remove the guesswork that user interface designers might have relied upon to determine user goals and establish design priorities. Development engineers, too, can turn to personas to avoid making incorrect assumptions about what is best for their intended users. Having this information early in development can eliminate the need for rework later in the process. Personas play an important role in usability evaluation, helping to identify representative test subjects and essential test scenarios. The benefits of personas are not limited to design and development. Personas also enable project stakeholders to prioritize and align projects based on their understanding of users’ needs. When stakeholders are more confident that an application will be accepted by its intended audience, they are more likely to assign the necessary resources. Providing a focus on users throughout development and ensuring the support of key stakeholders through a user-centered approach can give any project a greater likelihood of success.

ABOUT THE AUTHORS

DAVID CLARK

David Clark is a co-founder and the Design Director of TandemSeven. He has nearly 20 years of award-winning interface design and design management expertise across a multitude of industries. Prior to co-founding TandemSeven, David led ZEFER’s Boston Experience Design group and was President and Creative Director of Ark Studios, a design firm he co-founded in 1994 and sold to ZEFER in 1999. David was an associate professor at the Rhode Island School of Design from 1995 through 1998, teaching information design. He earned a B.F.A. in Industrial Design from the Rhode Island School of Design in 1991 and a BA in Government from Dartmouth College in 1988. David can be reached at dclark@tandemseven.com.
KARL STEINER, PH.D.

Dr. Karl Steiner is a User Experience Architect with TandemSeven and has nearly 20 years of professional experience. His work has covered all aspects of the user-centered design process, but narrative techniques such as personas and scenarios have been a long standing personal interest. He has given conference presentations and lectures on these techniques, and applied them successfully to a number of recent design projects, including award-winning work on portals and business applications. Dr. Steiner holds a Bachelor of Arts degree in Computer Studies from Northwestern University, and Masters of Science and Doctorate degrees in Computer Science from the University of Illinois. Dr. Steiner can be reached at ksteiner@tandemseven.com.

ABOUT TANDEMSEVEN

Tandemseven designs, architects and builds business portals and custom e-business applications. We specialize in creating usable, intuitive interfaces for complex applications. Headquartered in the greater Boston area, Tandemseven also has delivery capabilities in Austin, Chicago, Dallas, Los Angeles, New York City, San Francisco and Toronto. Tandemseven has designed and developed usable applications for companies including 1-800-flowers.com, Campbell Soup Company, Citigroup, FXall, GMAC-RFC, Hasbro, Morgan Stanley, Omgeo, Orbitz and Siemens Corporation.

For more information, visit Tandemseven online at www.tandemseven.com, or call 508-746-6116.