1) **Tablet Design Specs**
(recommended sizes, image sizes, etc.)

1.1) iPad 3
- **Storage:** 16 GB, 32 GB or 64 GB
- **Display:** 2048-by-1536 resolution at 264 pixels per inch (ppi)
  - Retina Display: Resolution is so high that you can’t see individual pixels in normal use
  - *“retina display” is a marketing term with no specific definition*
  - 9.7-inch (diagonal) LED-backlit Multi-Touch display with IPS technology
- **Cellular Data:** 4G LTE
- **Battery:** Up to 10 hours of surfing the web on Wi-Fi, watching video, or listening to music
- **Accessibility:** VoiceOver screen reader
  - Guided Access
  - Support for playback of closed-caption content
  - AssistiveTouch interface for adaptive accessories
  - Full-screen zoom magnification
  - Large text
  - Option to invert colors
  - Left/right volume adjustment

1.2) iPad mini
- **Storage:** Same as above
- **Display:** 7.9-inch (diagonal) LED-backlit Multi-Touch display with IPS technology
  - 1024-by-768 resolution at 163 pixels per inch (ppi)
- **Battery:** Same as above
- **Accessibility:** Same as above

1.3) iPad 2
- **Storage:** 16 GB
- **Display:** 9.7-inch (diagonal) LED-backlit Multi-Touch display with IPS technology
  - 1024-by-768 resolution at 132 pixels per inch (ppi)
- **Battery:** Same as above
- **Accessibility:** VoiceOver screen reader
  - Guided Access
  - Support for playback of closed-caption content
  - AssistiveTouch interface for adaptive accessories
  - Full-screen zoom magnification
  - Large fonts
  - White on black display
1.4) Android
   Display: 962-by-600 dp
   1280-by-800 dp
   UI Recommendations:
   - Touchable UI components laid out along 48 dp
   - Text 16 dp
   - Spacing between UI elements is 8 dp
   - Small Icons: Full asset: 16x16 dp, Icon square: 12x12 dp

1.5) Kindle Fire 7” (HD and Non)
   Storage: 8 GB or 16 GB
   Display: 7” screen
   1280-by-800 resolution with 216 ppi

1.6) Kindle Fire 8.9 (HD and Non)
   Storage: 32 GB or 64 GB
   Display: 8.9” screen
   1920-by-1200 resolution with 254 ppi
   Cellular Data: 4G LTE

2) Ways to improve efficiency to checkout
   - How to reduce the steps to checkout. He gave this use case: Home Page > Gender Page > Jeans Category > Original Straight Sub-Category > A specific Pair of Jeans > Add to Bag > Checkout.
   What are some ways, designers and developers are making these processes more efficient, simpler, etc. What are the implications for tablet design?

Top 100 Grossing E-Commerce Sites
(a usability benchmark of all 100 checkout processes ranked by checkout user experience)
http://baymard.com/checkout-usability/benchmark/top-100

Crate & Barrel is the best and shows screen shots (6 steps)
to read specifically why you need a “Baymard pro” account

11 Fundamental Guidelines of E-Commerce Checkout Design

59.8% of potential customers abandon their shopping cart

The study has shown that it is often difficult to lead customers to the final step in the checkout process when the only thing left is to submit their credit card details.
1. Checkout process should be completely linear
2. Add descriptions to form field labels
3. Avoid Contextual Words like “Continue” and “Back”. “Continue Shopping” is better
4. Visually Reinforce All Sensitive Fields On the Payment Page (Secure Payment is apparent)
5. Don’t Use An “Apply” button In Your Form
6. Format Field for Expiration Date Exactly as it Appears on Credit Card
7. Use Only One Column for Form Fields
8. Use Shipping Address as Billing Address by Default
9. Use Clear Error Indications
10. Registration Should Be Optional
11. Don’t Require Seemingly Unnecessary Information

The three different sources that document the 59.8% cart abandonment rate.

MarketingSherpa
1. Promote return/exchange policies
2. Post reassuring security icon(s)
3. Include privacy and trust language next to fields asking for personal data
4. Remind them of their abandoned cart

SeeWhy
Top five reasons why consumers abandon shopping carts during the online shopping experience, based on responses to a Forrester Research study released in May 2010:
1. Shipping and handling costs (44%)
2. Not ready to purchase the product (41%)
3. Wanted to compare prices on other sites (27%)
4. Item was priced too high (25%)
5. Wanted to save products in my cart for later consideration (24%)

MarketLive

10 E-Commerce Checkout Strategies
http://www.practicalecommerce.com/articles/2608-10-Ecommerce-Checkout-Strategies
Key strategies for making the checkout process easy for even inexperienced shoppers.

Happy Customers Through an Improved Checkout
http://boagworld.com/usability/improved-forms/
A collection of details to keep in mind when working on checkout forms (with visual examples)
- Provide examples of how a field should be completed
- Validating form fields as users enter information
- Place error messages next to the problem that needs correcting
- Save user data often so they do not need to re-enter if something goes wrong
- Set good defaults
- Allow user the option to see the password when in secure location
- Consider allowing user the option to register for a site AFTER the purchase is made
- Does checkout work when javascript is disabled?
- Does the browser back button work?
- Make buttons descriptive
- Make instructional text concise and clear

One-Page Checkouts for E-Commerce Sites
http://ecommerceblog.cybertegic.com/2011/01/one-page-checkouts-for-ecommerce-sites.html
Advantages of a one-page checkout, and how it boosts conversion rates.

The State of E-Commerce Checkout Design 2012

1 The average checkout process consist of 5.08 steps.
2 24% require account registration.
3 81% think their newsletter is a must have (opt-out or worse).
4 41% use address validators.
5 50% asks for the same information twice.
6 The average top 100 checkouts violate 33% of the checkout usability guidelines.

Relevant Points in Article
What matters the most for checkout experience isn’t the number of steps in a checkout process, but rather what the customer has to do at each step. . . [however] websites with 8 or 9 steps have accumulated a significantly lower score in checkout usability than the rest. . . This is often a result of required account registration.

Apple, Walmart and Gap, which are all seven-step checkouts that perform approximately 50% higher than the average top 100 grossing checkouts (not to say that they are perfect, there are still room for further checkout improvements

Many people associated account = newsletter, aka. “spam”. People dislike creating an account online and 40% of test subjects said it was because “they didn’t want any newsletters.”

Nordstrom is an example of an e-commerce site that offers new customers a guest checkout option but offering at the same time an easy optional account registration. During the checkout usability study no test subjects were put-off by this approach, and just left the optional field(s) blank if they weren’t interested in creating an account.

Address Validators: The advisable approach — implemented by the vast majority of the 41% of those websites utilizing address validators — informs the customer that the typed address doesn’t match, yet still allows them to force proceed if they are sure that the address is right.
On the path to reducing needless checkout friction, only 10% of the websites helped their customers by pre-filling the state and/or city fields based on the zip code provided. Hayneedle (step 2) was one of them.

If we take a look at specific e-commerce industries, the Automotive Parts industry had much better checkout usability than the rest of the industries (scoring 110% higher).

**Personal Observation for creating a faster checkout**

in their drop down navigation, there is a “find it fast” and “new arrivals” option for popular items would reduce steps to purchasing an item.

### 3) Ways to provide context for products.

*People can't touch, feel or smell products. They also don’t get a sense of scale. How can we provide context to help people make purchase decisions.*

**Personal Observation:** AE does this to a certain extent already on their home page - shows models in environments where the clothes would be used. and shows specific clothing on models paired with other items that can be purchased to complete a “Look”.

A lot of articles herald the 360 degree view of a garment for for tablets, this is not realistic as far as download time is concerned.

Perhaps a tablet solution is multiple views, available description text, possible the use of 3rd party FETs (see article below). Also, having the clothing on various model body types and in different real environments might be helpful (as some of the articles suggest)

**Apparel E-Commerce and Fitting Enabling Technologies (FETs) (THESIS PAPER)**

[http://bada.hb.se/handle/2320/11359](http://bada.hb.se/handle/2320/11359)

FETs from the article (all can be used by a retailer):

- Fits.Me - [http://fits.me/](http://fits.me/)
  - Styling advice (akin to a sales assistant suggesting: "if you like this shirt, you should consider these pants"): [Couturious.com](http://www.fits.me/news/online-apparel-retail-and-what-future-brings);
  - Augmented reality: [RichRelevance](http://www.fits.me/news/online-apparel-retail-and-what-future-brings) and incredibly cool [Fittingbox](http://www.fits.me/news/online-apparel-retail-and-what-future-brings);
  - Size recommendation: [myshape.com](http://www.fits.me/news/online-apparel-retail-and-what-future-brings)
  - Return services (lets face it, the return shipping is still the most common way to tackle the poor fit): [Newgistics](http://www.fits.me/news/online-apparel-retail-and-what-future-brings);


- Virtusize - [http://vimeo.com/49443031](http://vimeo.com/49443031) (European product)
Based on the results, apparel e-tailers are advised to create positive mood using product rotation to decrease shoppers’ perceived risk and increase purchase intent.

According to Retail Forward (2001), about 85% of on-line shoppers identified three dimensional images of products useful for understanding product features and functions.

Sensory attributes such as fabric hand, garment fit, color, and quality are important criteria for all types of in-home apparel shopping (McCorkle, 1990), but are difficult to evaluate on-line.

Li, Daugherty, and Biocca (2001) found that consumers experience emotions when interacting with 3D visual products.

Similarly, Choi et al. (2001) found that media content such as moving advertising agents on a Web site developed to create presence had a positive effect on purchase intention for the brand and revisit intention for the Web site.

It is reasonable to expect that positive mood in Internet shopping may serve as internal information reducing perceived risk and enhancing positive product evaluation to make purchase decisions.

Results of the mediating analysis support the model of the consumer-response system (Holbrook & Hirschman, 1982), which posits that consumers respond to marketing stimuli through a series of sequential responses with affective and/or cognitive responses preceding conative responses to marketing stimuli (e.g., product presentation).

It is important for e-tailers to create a pleasurable on-line shopping environment that will evoke positive mood.

People who were exposed to Web sites with large moving images exhibited greater purchase intention than people in any of the other three treatment conditions.

A content analysis of their Web sites shows that online apparel merchants are providing a large amount of basic product information traditionally provided on labels, but are not providing
sensory or experiential product information useful in making purchase decisions for fashion-oriented garments.

A table lists out what information was available on 31 internet apparel retailers (ex: Fiber content, fabric construction, price, picture enlargement, etc)

information that could help consumers judge sensory types of product information typically gained in a store visit, such as the feel of the fabric, was not found as frequently.

Sensory-oriented and experiential-oriented product information would be a wise addition to web sites of apparel merchants.

Regarding visual presentation of a product, marketers should take into consideration the downloading time of a picture. Despite their desirability in terms of additional information provided, three dimensional rotation and enlarged pictures take more time to download. Therefore, web designers for apparel merchants need to be cognizant of shoppers’ tolerance level of downloading times versus their need for clarity of a product image

Analysing the influence of the presentation of fashion garments on young consumers’ online behaviour
http://www.emeraldinsight.com/journals.htm?articleid=17019404&show=abstract
It is evident from the interviews that the two elements create very different experiences for the consumer with regards to viewing fashion online, the first area identified functional product viewing, allows the consumer to personalise how they view and interact with the garment stimulating more utilitarian effects, whilst the second area, aesthetic fashion information is driven by the retailer providing advice and information about the garments stimulating hedonic effects. Online fashion retailers must sufficiently intertwine hedonic entertainment with practical utilitarianism to provide a satisfying online shopping experience.

Cognitive, affective and conative responses to visual simulation: the effects of rotation in online product presentation
Causal model analysis showed the influence of rotation in product presentation on perceived information quantity, mood, attitude, and purchase intention

Online visual merchandising practice of apparel e-merchants
Journal of Retailing and Consumer Services 12 (2005)
Article investigates industry practices for visual merchandising that may bring positive or negative consumer responses.

Visualization features that allowed multiple presentations of the same apparel product contributed to the increased sales in e-business (Visualization feature, 2003).
Then and Delong (1999) found that garment presentation on a human model was the most preferred technique.

Presentation of the whole view of the human model rated higher than the mannequin presentations (68% vs. 39%).

Another area that may need improvement was the availability of enlarged images of the garments.

Best to make garment (ex: shirt) images in different color swatches that are available to the client. Adding alternative models with various body shapes that can be created, based on the shopper’s criteria, would enable them to see the final look of the garment on the particular body shape.

Offering the images with the different backgrounds and poses would help the shopper envision the garment worn in different settings.

The effects of visual and verbal information on attitudes and purchase intentions in internet shopping

*Psychology and Marketing, Jan 11, 2008*


The overall results from two Web experiments simulating Internet apparel shopping showed that both visual and verbal information had significant effects on affective and cognitive attitudes toward apparel products, but only verbal information had a significant effect on purchase intention.

Although visual product presentation is also found to be important, detailed product descriptions are critical to positively influence consumer shopping experience in Internet shopping.

Lane Bryant, the nation’s largest plus-size retailer, removed My Virtual Model visualization technology after using it only for a few years because their customers no longer used it (Lane Bryant, 2005).

Spiller and Lohse (1998) conjectured that product descriptions available on the Internet are equivalent to salespeople’s service at retail stores. Their analysis of 137 Internet retail stores revealed that good product descriptions influence sales in Internet shopping.
Effects on web site atmospherics on consumer responses: music and product presentation
http://www.emeraldinsight.com/journals.htm?articleid=1779189&show=abstract

This study showed that: product presentation (model vs flat) had a significant effect on consumers' emotional responses; and there were positive relationships among consumers' emotional, cognitive, and conative responses. Unexpectedly, music had no effect on consumers' emotional responses.

The effect of web interface features on consumer online purchase intentions
http://ac.els-cdn.com/S0148296308000210/1-s2.0-S0148296308000210-main.pdf?_tid=24077102-279c-11e2-9c9b-00000aab0f6c&acdnat=1352156414_991853c9859b321cd3322ecab1468b55

This study fills that gap by providing specific recommendations regarding website design elements that generate positive managerial outcomes.

Internet designers may add human features such as the use of humor, appealing graphics, or 3d virtual models to attract, retain, and motivate consumers to purchase from the site.

Appendix A (good things which enhance purchasing experience)
A.1. Computer factors
Indication of security/secure site
Clear displays of page contents
Presence of clear menu items on each page
Presence of shopping cart
Up-to-date information
Un-do button
Assurance of privacy
Payment options
Purchase tracking services
Company logo
Consistent web page design
Declaration of intended use
Logical webpage information
Offers order confirmation
Product images as thumbnails

A.2. Human factors
Global search feature
Humor
Language options
Links to similar websites
Feedback features
The interactional effects of atmospherics and perceptual curiosity on emotions and online shopping intention

_Wu et al. (2008), for example, showed that online shoppers exposed to warm color (red) website are more pleased and aroused than those exposed to cool color (blue) website_.

Well designed links are also a dominant feature for designers to consider when they concoct online store websites. They should develop links helping customers find information/products within three clicks, with shortcut paths, and convenient links leading users into the sub-sites.

However, designers should be very careful in using menus with overly segmented structures. For example, Hausman and Siekpe (2009) show that less structured websites irritate customers. Accordingly, managers should design menus clean and simple. Menus should also fit and be consistent with the overall website design and style.

The present findings should be interpreted with caution for several reasons. First, the study used a small size convenience sample.
Can Product Images Improve Conversion? Showing Products in Context
http://www.getelastic.com/images-in-context/

According to a Future Now client, images can lift conversion rates by 147% by showing products “in context.”

This can reduce a shopper’s fears, uncertainties and doubts about a purchase like “how does this look on a person?” or “how large is this in real life?” Images can also “sell” by triggering an emotion, showing the quality or versatility of an item or illustrating a products features and benefits.

Showing the model walking a dog and sitting by the pool in the images communicates even more uses. Plus, it’s raw and more true-to-life than a polished studio shot. The pants are being worn by “a person like me.”

Coach uses a bag sizer tool. Choose your height and see the bag on the shoulder and in hand.

E-Customer values in Vietnamese apparel industry (Thesis Paper)
http://www.essays.se/essay/fff6b12102/

5 elements of e-commerce that are identified as very strong value-adding factors, namely,
- availability of information on the website,
- accuracy of demonstrating products’ color on website,
- seller’s ensuring products’ quality,
- seller’s trustworthiness and safety of using products