

HCI Panel @ SIMS

Skills and Career Path

1. What would you say are the top three most important skills to have to excel in this field? What makes a successful HCI (Human Factors, User Experience, etc) professional?

○ Catherine

- Methodologies: HCI roles have a specific focus. Usability engineers focus on methodologies, user centered design cycle, and experimental design. In each case, there is a problem which needs to be solved.
- Communication: Communication is about 50% of the job. When you collect information you need to communicate. As there are 65 people in Oracle's group and you consult in different teams, you need to communicate
- Negotiation: The ability to negotiate also helps because there are strict time deadlines. You negotiate when you explain what you are doing, why you need to stretch out schedules, convince teams to compromise and make changes – especially when you may not have the necessary time or money.

○ Uday

- From a Design point of view:
 - Patience: You are working with people from other disciplines and different models. You are meeting them head on when working on a product where you need to balance language and mismatched conceptual models – especially when working with engineers
 - Attention to details: “Your focus determines your reality” (Star Wars). Being able to negotiate boundaries and issues across different products you are working on while moving your attention and your reality from the big picture to the pixel level.
 - Tact: Communication is vital. You are telling a product manager their baby is ugly in a tactful manner and achieve a middle ground.

○ Misha

- From a Usability engineering point of view:
 - Quantitative methods: In order to conduct survey administration
 - Qualitative methods: Site methods and how to ask questions. Questions are placed to solve a problem and give you the answers you really need. You need to interpret the data, refer back to them later, and explain what the answers mean. Need to understand which methods to use at appropriate times.

- Communication: Understanding what it means to bridge the communication gap with people who have different perspectives (programmers, etc)
 - Blake
 - Lack of ego: You are doing research. It is very easy to come to the table with preconceived notions. For example Germany likes Yahoo! Categories but the US doesn't. You need to have an open mind to the fact that Germany likes the structure.
 - Put the business first and user second: You are there to help the business achieve the business goals. You need a way to work with stakeholders and explain what you will be exploring
 - Patience and tact: Patience because other people are not tactful
 - Tommy
 - UI roles at my company are less structured and people are splitting their time across multiple disciplines
 - Business: Ability to adapt to the business environment. You are gathering requirements, etc., but in the end you must understand the business goals and what are the barriers to adoption so you can communicate the findings in a meaningful way
 - Listening: In a non judgmental way. Phrasing questions in a way that is not leading. People don't know how to fix the problem in the process, and you need to help them articulate the issue and how to fix it.
 - Prototyping: In order to do "down and dirty usability testing". Understanding the technical design behind it is important.

2. What did you study in school that is relevant to the job you do today?

- Catherine
 - School: I have a master's in human factors from University of Toronto. It was a research driven program (worked on simulator research on driving). I also took statistics, cognitive engineering, and HCI, but usability was a small portion of the program. I knew I liked HCI, but I only took one course.
 - Experimental design: It is a key foundation for what I do today. I learned the importance of metrics, validity, and focus groups.
 - Job at work and school are very different: It wasn't until I started working that I was exposed to this difference. It's a steep learning curve. School was a good foundation but industry was an eye opener – how specialized HCI is, the skill set, and the need for design skills
- Uday
 - School: Point out that Carnegie Mellon's school of design and HCI institute (computer science) are two different things. I have a Masters in interaction design which focuses on classical rhetorical thinking and translating into tactics. Other schools may be more focused on tools and

techniques, but CMU looks on the strategic development process and how design effects decisions made down the line

- Design which explores theory and practice: There are also specialized avenues such as communication design and interaction design.
 - Seminars on interaction design: Focus on thinking and making things. May not make anything functional but the scenario planning, qualitative methods, ethnographic studies, information design, User Interface, and information architecture are useful
 - UI and information design: You need a good balance.
 - Work is very specialized – silo'd: A lot of my schoolwork did not translate into actual practice. I'm not sure if it's a failure in education or the workplace as there may be more strategic ways to think about specialization
- Misha
 - School: I went to an Information Sciences program at Indiana University. I had a good advisor who focused on HCI. Then I found another teacher who focused on design of computer games. He helped me understand the problems.
 - Size of the company: Impacts what you do. Small companies focus on more things and you are called on to do multiple things. For example at SAP labs you may do more blended work
 - The larger the company, the more silo'd you become. You can not do multiple tasks on different projects or products
 - Understand HCI theory and hands on application: You need to internalize the process not just discuss theory
 - Blake
 - School: I was a TA for an HCI program. There were different interpretations from the students, and the teacher helped to include the differentiation
 - Theory vs. practice: Working at a company is very different from being at school. Having theory is good but it isn't what you practice on a day to day basis, but your colleagues will have similar backgrounds and this enables you to talk to them. It helps to speak the same language.
 - Language: Feel like experience learning another language helped whether it is a programming language or a foreign language. If you understand what language is about, it helps with what it means to use a UI. It also helps you understand what happens when you come up with a study and the notion of learning another interface.
 - Tommy
 - School: I studied anthropology, so the learning curve in my job was very steep

- Ethnographic methods: Spent a number of years studying human populations and asking people what they remember of the buildings that used to be here. There is value in treating your population as a culture which needs to be understood – especially what underlies their behavior
 - Need Finding: Principal of Jump! Associates talked about theoretical underpinning and the importance of designing for needs which underlie the behaviors – especially because the behaviors change
 - Scenario design: Build a pattern or person from the data you have
 - Statistics: I wish I had taken more stats and quantitative subjects
- 3. If you could choose your school courses all over again, are there other classes you would have taken? If so, what are they and why?**
- Catherine
 - Usability courses
 - Internship: Take an internship so you can see all about the methods, the recruiting, and the politics. It will give you a sense of what you really want to do
 - Uday
 - Internship: It opened my eyes to product development, balances theory with reality
 - Integrated product development (IPD): Get designers with engineers and business students. Class worked on a funded project and provided experience with real client and deadlines. Exposed to human dynamics, politics, social interaction
 - How to Learn Software: Class that teaches people how to learn software. Once you understand the underpinning of the applications then you are prepared for whatever the company throws at you
 - Misha
 - Tailor Your Program: Be very aggressive about tailoring the program to what you are interested in and what benefits you (but be tactful about it)
 - Get a job: Classes which will put you in front of a company and provide theory plus project work allow you to translate what you've learned and speak to the translation
 - Blake
 - Organizational behavior: More you know about how to interact with people the better. The workplace is not always a giving place. You may not know why you cannot know something or why a person cannot tell you something. People have different priorities. You need to pull out the importance of a specific word in a conversation and be able to run with it. You also need to understand what motivates management
 - Tommy
 - Ethnography: collecting log and analyze findings

- Quantitative subjects: At Razorfish I cover quantitative subjects – analyze numbers, identify market size, and how statistically significant it is. If someone hands you a ream of click stream data, they want you to say what it means “statistically”. Clients are familiar with the practices of usability and research, but they rushed onto the bandwagon of implementing software. They need help understanding the underlying information and results
 - Statistics: There is more and more need for quantitative analysis
- 4. What are some technical skills, if any, you think are important to know? (e.g. computer languages, prototyping tools, software programs)**
- Catherine:
 - Packaged Software: More software you are comfortable with the better. Photoshop, Visio, Dreamweaver, Illustrator, all key Office products, and programming language skills such as HTML
 - Proprietary Software: A lot of the software used at a company is proprietary, so you need to be comfortable with new software and not feel intimidated (threatened).
 - Uday:
 - Understanding Software: You need to know “how to learn” software. Being able to map applications to the different design activities and identify which tool is for which activities. For example you use Visio for task flow – not Photoshop – and you don’t do prototypes in Excel.
 - Programming Languages: Try to take a programming language whether it be C++, java, or HTML. Get exposure to object oriented thinking, because it is good to be able to speak the language with the developers and not be frightened. It helps to be able to call their bluff
 - Misha
 - Technology: Be familiar with PCs (not so much Macs) and be able to navigate the UI
 - Programming: Take at least the basics of java not java script. You need know and appreciate what a programmer has to go through
 - Blake
 - Programming Language: It would be good to learn “how to learn programming languages”.
 - Packaged Applications: Excel. When you are working with people in multiple countries, Excel becomes very useful (macro man).
 - Analysis: You need to be able to analyze the results from a survey. In a desirability study from Microsoft it was said that a team could be supported with one decision
 - [provided after the panel] The paper suggests a new way of determining the desirability of a product. Please contact Blake directly to receive a copy (blake@blakeengel.com)

- Tommy
 - Packaged Applications: Photoshop, Visio, Excel, PowerPoint, and Dreamweaver. Being able to visually depict the information in a visual manner is good.
 - Basic Production Course: Knowledge of video editing software and familiarity with video (e.g. FinalCut) and sound editing equipment is helpful. Know how to do quick edits with QuickTime, because clients love it
 - Content management: Clients are asking us to be able to define metadata frameworks, apply ontologies, and index huge amounts of content. It would be useful to know how the different content management applications work and understand the theory behind them
- 5. What are possible career paths for an HCI professional? Along that path, is there any type of background or skill set that might be particularly helpful to obtain (i.e. especially for an HCI job in the Bay Area)?**
- Catherine
 - Roles: At Oracle each person has very distinct roles, but at other companies there may be one person who does all these different roles.
 - Misha
 - Job Description: Look at the job description so you know what they are looking for. Despite the job title, are they really looking for a programmer?
 - Uday
 - Tasks: Look at the tasks instead of the titles. For example, I am categorized as a software engineer in the HR system at Oracle
 - Blake
 - Tasks: The “namism” thing is totally out of control. Look at the tasks because that is what differentiates the roles,
 - Titles: Sometimes the title may indicate how the person needs to think. Visual designers tend to produce ideas whereas the interaction designer’s process is more structured. But – a company may come up with a title for HR purposes, job security, or hiring reasons.
 - Tommy
 - Tasks: Razorfish is a small company so everybody does everything

On the Job

- 6. Given your job and what you do, what political issues do you typically face within the organization?**
- Catherine
 - Executive Support: At Oracle we have big time traction with our executives. Our VP’s background is in HCI and architecture. He developed traction by pitching Larry Ellison on why the group exists. All

the usability and design issues are tracked and every Monday they are presented to Larry Ellison via product scorecards. If improvements are not made, individuals get in trouble. It is okay if changes (improvements) are made; then they don't get penalized. Such high level exposure has given our group attention and people are knocking on the door to get a design review.

- Market Impact: Also the market is driving the importance as there is a lot in the news on HCI
- Uday
 - Coordination: Oracle's design group consists of about 65 people spread across the US and UK. It is split between design and usability, so there tends to be a lot of standard coordination
 - Management Pipeline: By the time you get the request there has already been some time put into it and there is management behind it. As a result, some of what they want you to do may conflict with what you want to do. Typically they do not want to hear that the product may need to change - especially when you are contradicting thoughts put into the product which have already received sign off from VPs). Be aware that management may not support you and want to hear that their "baby is ugly"
- Misha
 - Delivering Bad News: Typical scenario is someone comes to you at the end of the product lifecycle, already has people in the lab, and wants you to just "run it through the lab". You have to be able to deliver bad news and deliver it with grace and enthusiasm which leaves the team with hope. If you don't, they will never want to talk to you again. You have to let them know that even though their baby is dying, it is okay. We will get through it; we will find the cure.
 - Competition: Oracle's competitors make it necessary for our group to exist. The more competitors there are they more need there is for usability - and our jobs
- Blake
 - Budget: It starts with having an idea. In Germany they want to know why people are not using email or only using mail for a specific thing. You want to go to them with evidence to support your idea, but you need the budget to get the evidence to present to them - and it's difficult to get the budget, because they're losing money because people won't use mail...
 - Micromanagement: My pet peeve is a person who likes to manage small aspects of your work. You need to handle them with tact, because they are the ones who typically do not go away
- Tommy

- Budget and schedule: We have been hit financially over the last two years and are not in a position to argue with the client in regards to timing and budgets. In order to meet deadlines, we may have to compromise on how we approach testing.
- Business Environment: We must be able to adapt to the business environment, because we still have to make do. You need to be able to work with clients who have their requirements before they come to you.

7. How would you describe your interactions with engineering or other groups within the organization?

- Catherine
 - Mixed: From extremely bad to extremely good. You need to have skills to deal with both and to try to get them to understand you are there to help them. Some groups understand and appreciate us, while others resist us because it is mandatory or conflicting.
- Uday
 - Different Views: You need to use patience and tact especially when teams harbor negative thoughts. It may require educating and reeducating them, because they have a different view on what you do. You may need to evaluate their understanding and restate what it is you do in order to educate them on certain aspects. It is a good opportunity for the UI team to reevaluate their beliefs as well.
- Misha
 - Changes Over Time: The groups are mostly confused about what we do, because what we do changes over time. As we expand our influence, more interactions are about relationship building and developing optimistic attitudes, because people don't want you to come back (means their baby was ugly)
- Blake
 - Alliance Building: Building alliances with other teams (esp. marketing) while explaining what you do. Especially being able to differentiate between usability research and market research. The groups are different even though both use recruiting agencies. There are misconceptions about what we do (not translation – but design), and you need to make your presence clear through presentations – need to become more ROI oriented.
- Tommy
 - Client and Internally Driven: The group is well received. The attention has come from the clients (outside) not necessarily inside Razorfish. It also helps that there are team members who argue for usability even if it wasn't included in a proposal. Information Architects drive the process, and we have close ties with them

Industry Outlook

8. Are more companies starting to hire for HCI and qualified HCI people? Or is there still a tendency to perceive individuals with other skills (e.g. design, marketing, engineering, etc.) as being just as qualified to do HCI?
 - Catherine
 - Domains: Medical and pharmaceutical are starting to rise in the job postings. There are starting to be more job postings from both small and large companies
 - Networking: It is the best way to get your foot in the door
 - Organizations: I recommend the UPA (<http://www.upassoc.org>)
 - Uday
 - Networking: Through organizations such as
 - BayCHI (<http://www.baychi.org>)
 - ACM SIGCHI (<http://www.acm.org/sigchi>)
 - AIGA especially the user experience group for design and usability (<http://www.aiga.org/> and <http://www.aiga.org/content.cfm?Alias=aboutcommunities>)
 - IDSA on interaction thinking (<http://www.idsa.org/>)
 - DMI – design management institute discusses how design interacts with business strategy (<http://www.dmi.org/dmi/html/index.htm>)
 - Domains – Health care is on the rise. IDEO has their own healthcare unit in SF and has done some medical instrument design (<http://www.ideo.com>)
 - [provided after the panel] Research areas such as those outlined in the resource listing found at http://www.udanium.com/design_resources.htm While it is not exhaustive, it should be a pretty good start to introduce audiences to interaction design organizations, magazines, books, methods, key authors, and various online journals/blogs to see what's out there.
 - Misha
 - Domains: Financial service with companies such as USAA (<http://www.usaa.com>) and Fidelity (<http://www.fidelity.com/>) moving to web based systems.
 - Organizations:
 - HFES – usability, experimental design, human factors (<http://www.hfes.org>)
 - Blake
 - Domains: Government especially with the homeland security act (<http://www.whitehouse.gov/deptofhomeland/analysis/>)
 - Also in Government, the census organization run by Gary Marchionini in North Carolina is trying to put census data on the

web (<http://www.ils.unc.edu/~march/> and <http://ils.unc.edu/govstat/>)

- NIST developing tools for standardization across organizations (<http://www.nist.gov/>), and the National Cancer Institute (<http://www.cancer.gov/>) is spearheading web standards – including Web Design and Usability Guidelines (<http://usability.gov/guidelines>)
 - Countries: I know they need usability people in China, India, and Russia. Jakob Nielsen even wrote an article about it (Offshore Usability – <http://www.useit.com/alertbox/20020916.html>) and it was mentioned in a radio show which airs every Sunday at 11am. Marty Nemko discussed where are the jobs going if you want to do this stuff
 - [Supplied after the panel] The radio show is called "Work with Marty Nemko" (<http://www.martynemko.com/>) and is on 91.7 KALW FM on Sundays at 11:00am. The topic is not always globalization, but Marty always has inspiring ideas on how to find work in industries you may not have realized need people like you.
 - Tommy
 - Domains: Municipal and pharmaceutical and companies undergoing portal and intranet development projects
- 9. Are there any fields (e.g. healthcare, e-commerce, manufacturing, science) or types of companies (e.g. small, large, established, start-up) here you think there is a particularly high demand for HCI professionals?**
- See previous answers

Audience Q&A

- **Q: How do international considerations get included in the discussion? Despite globalization interfaces are mostly based on North American principles. How do you integrate the uniqueness of each country?**
 - Blake: The underpinning is the same, because you cannot change the flow. Instead you come up with a solution which allows you track disparate requests. Aaron Markus, intercultural maven (<http://www.amanda.com/>) has proposed drop down menu for each country which would cause the UI to change. His thoughts are fueling the idea for a local interface.
 - [Supplied after the panel] Our products are often "platform" products, meaning they are run off the same code base in every country, and put through an engine that swaps out the interface language. This clearly restricts our ability to tweak our products to local habits and cultures.

However, for situations in which this has been possible, here are some resources that describe the method and philosophy we use:

- Harris, John, and McCormack, Ryan, Translation is not enough: Considerations for global Internet development [Attachment: sapient_globalization_a4.pdf]
- DelGaldo, Elisa, and Jakob Nielsen, ed., International User Interfaces, John Wiley and Sons, Inc, New York, 1996, ISBN: 0-471-14965-9, 276 pp.
(<http://www.amazon.com/exec/obidos/tg/detail/-/0471149659/>)
- Honold, Pia, Learning How to Use a Cellular Phone: Comparison Between German and Chinese Users. (<http://www.techcomm-online.org/issues/v46n2/full/0331.html>)
- Hofstede, Geert, Cultures and Organizations: Software of the Mind, Intercultural Cooperation and its Importance for Survival, McGraw-Hill, New York, 1997, ISBN 0-07-029307-4.
(<http://www.amazon.com/exec/obidos/tg/detail/-/0070293074/> and <http://www.cyborlink.com/besite/hofstede.htm>)
- Hoft, Nancy, L., International Technical Communication: How to Export Information About High Technology, John Wiley and Sons, Inc., New York, 1995, ISBN: 0-471-03743-5.
(<http://www.amazon.com/exec/obidos/tg/detail/-/0471037435/>)
- **Q: How are teams usually structured? Does usability get included earlier at other places?**
 - Uday: Craig Vogel (Carnegie Mellon) discusses creating breakthrough products and provides examples of integrated product design.
 - http://galileo.me.cmu.edu/cagan_and_vogel/vogel.html
 - <http://www.creatingbreakthroughproducts.com/>
 - http://www.amazon.com/exec/obidos/tg/detail/-/0139696946/qid=1045501370/sr=1-1/ref=sr_1_1/002-0509043-9808821?v=glance&s=books
 - Misha: some teams just get it
 - Blake: The new Yahoo! mail redesign was all motivated by research. Companies are realizing that there isn't much innovation in products - now it's all about usability
- **Q: Highlight in resumes or portfolios**
 - Misha: Don't be embarrassed by a lack of experience. It's okay to even just include class projects and state what your individual contribution was. Interviewing is about finding a good match. You want to find a place that is a good match for you, your career growth and development
 - Catherine: Remember to bring samples of your work when you come to an initial interview. Also be prepared for common sense questions. Make sure to show

your personality. You want your personal skills to shine out. It can never hurt to ask what questions you should be prepared to answer

- Tommy: Work is the deciding factor, especially being able to show the process and methodology you followed to get to end result
- Uday: Structure your portfolio as a story which shows where you have come through your design work. Make sure to highlight experiences and how they can translate into your “value add”. Including different mediums is fine. Web is easy to access and print is easy to see, pick up, and photo copy
- Blake: The employer is scared they are going to hire some wacko or sue them; they are just as scared as you are. Be prepared not just to show your work but your personality as well. Interview is about finding the right match.
- **Q: I’m doing UI for the architecture school. What are the top questions that you might want to ask for creating survey**
 - Misha: Clearly articulating who the user groups are up front will allow you to put a stake in the ground and get a good understanding of their expectations. You want to know what types of content they want and what they want to do with the site. Have in depth interview with the client. Identify what you want to say at the end of the study and think of that at the beginning. Make sure to build relationships so they want to respond / participate again. Know the limitations of a survey. Interested participants will be more inclined to help.
 - Blake: Plan for analysis first. Writing a template in the beginning is a good idea. Identify the survey questions and the interviews – and the goals