



Università degli Studi di Cagliari
Dipartimento di Matematica e Informatica



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Sommario

- Quali fattori sono coinvolti nel design dell'interazione?
 - Importanza di coinvolgere gli utenti
 - Grado di coinvolgimento degli utenti
 - Cosa è un approccio incentrato sugli utenti?
 - Quattro attività di base
- Qualche considerazione pratica
 - Chi sono gli utenti
 - Quali sono i loro bisogni?
 - Da dove vengono fuori le alternative?
 - Come si può scegliere tra le alternative?





Fattori dell'interaction design

- È un processo
 - Un'attività guidata da un obiettivo, influenzata dall'utilizzo che si intende fare dell'applicazione, il dominio applicativo, materiali, costi e fattibilità
 - È un'attività creative
 - È necessario un bilanciamento tra diversi trade-off
- Quattro approcci principali:
 - **User-centered design:** l'utente è la guida, il designer progetta una soluzione in base ai suoi *bisogni*
 - **Activity-centered design:** si focalizza sul *comportamento* per l'esecuzione di un task.
 - **System design:** progettazione rigorosa di un sistema che deve risolvere un problema preciso
 - **Genius design:** utilizza solo l'esperienza del designer



L'importanza di coinvolgere gli utenti

- Gestione delle aspettative
 - Realistiche
 - Nessuna sorpresa, nessuna delusione
 - Apprendimento tempestivo
 - Comunicazione, ma non “vendita di fumo”
- Proprietà
 - Rendere gli utenti delle parti attive nel processo
 - È più probabile che capiscano/accettino i problemi
 - Può essere cruciale per fare in modo che il prodotto venga accettato



Cosa è un approccio user-centered?

- Un approccio user-centered ha le seguenti caratteristiche:
- Concentrazione sui task dalle prime fasi dello sviluppo: studio delle caratteristiche cognitive, comportamentali e attitudinali
- Misurazione empirica
 - Prestazioni degli utenti in scenari applicativi
 - Una volta che il prodotto è finito
 - Registrazione delle interazioni
- Design iterativo: quando qualche problema viene rilevato durante un test utente, risolverlo e fare altri test

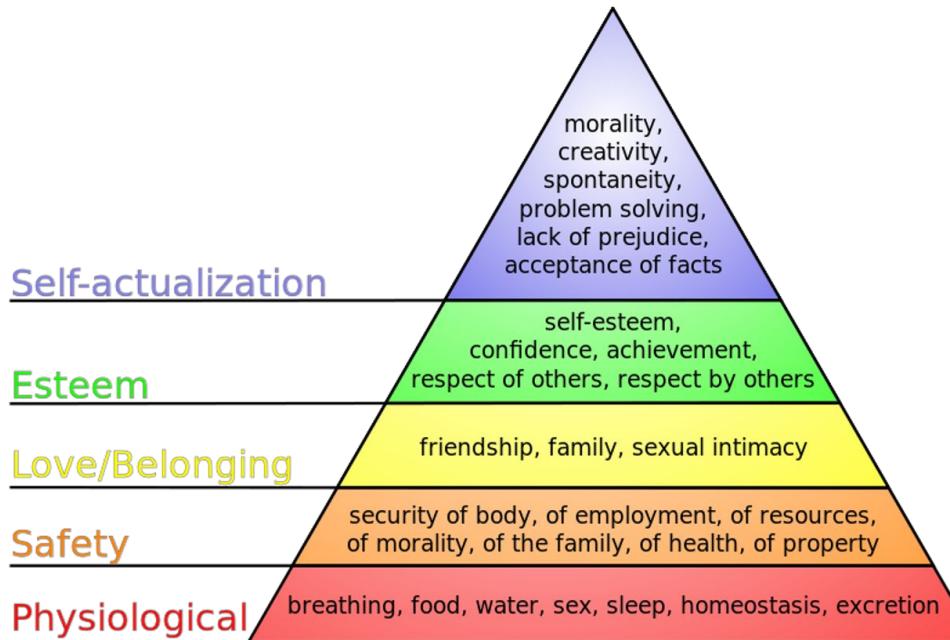


Che cosa si intende per bisogni?

- Gli utenti raramente sanno cosa sia possibile
 - E di conseguenza anche cosa non lo sia
- Gli utenti non possono dirvi cosa sia necessario per aiutarli a raggiungere un certo obiettivo
- Si può però concentrarsi sui task esistenti:
 - Il loro contesto
 - Di che tipo di informazioni abbiano bisogno
 - Chi collabora attivamente all'attività
 - Perché l'obiettivo è raggiunto nel modo corrente
- I compiti previsti per l'applicazione
 - Possono essere radicati sul comportamento corrente
 - Possono essere descritti come scenari futuri



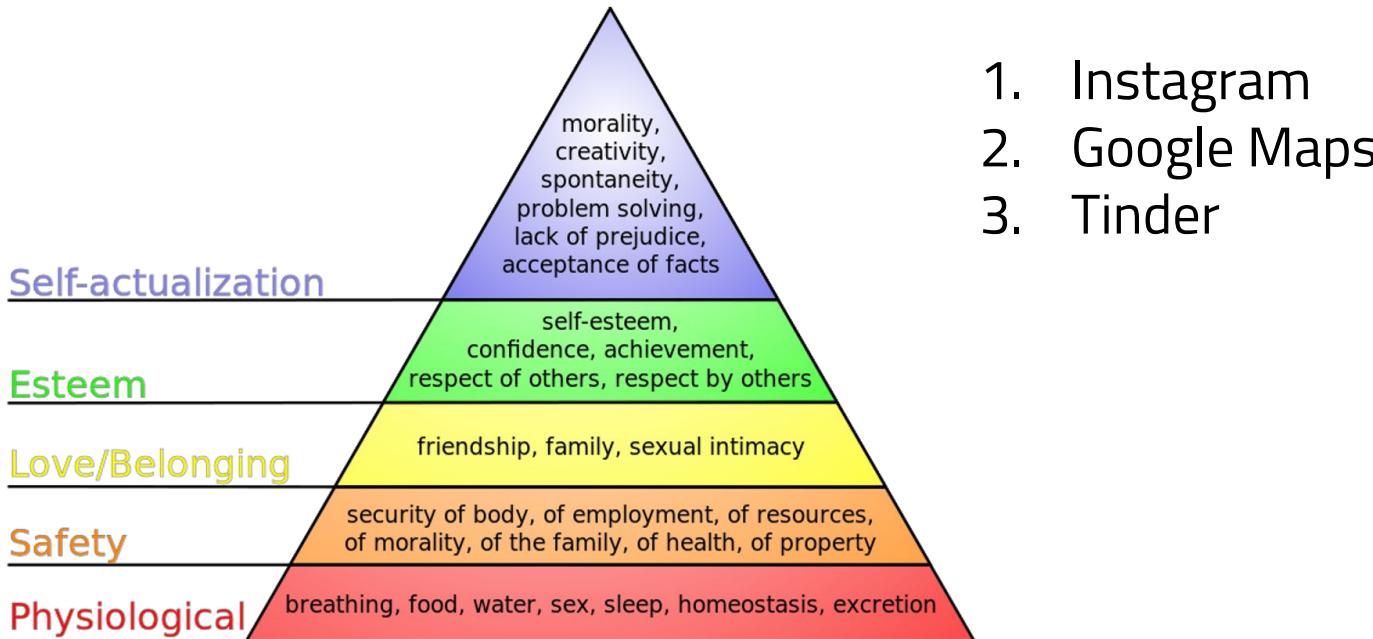
Gerarchia dei bisogni di Maslow's



J. Finkelstein / CC BY-SA (<http://creativecommons.org/licenses/by-sa/3.0/>)
https://commons.wikimedia.org/wiki/File:Maslow%27s_hierarchy_of_needs.svg



Esercizio: Posizionate le seguenti app

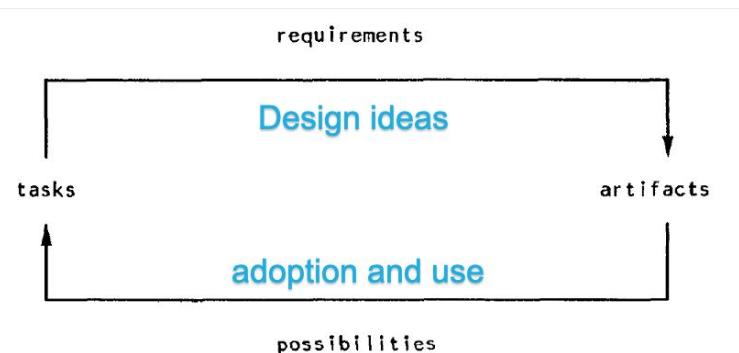


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Ciclo Task-Artifact di Carroll (1990)

- Le persone hanno bisogni e preferenze
- Le tecnologie vengono create per soddisfarli
- Nel momento in cui le persone usano le tecnologie, bisogni e preferenze cambiano



CHI'90 Proceedings

April 1990

INFINITE DETAIL AND EMULATION IN AN ONTOLOGICALLY MINIMIZED HCI

John M. Carroll
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Yorktown Heights, NY 10598

ABSTRACT
By default, we attempt to define practical areas of technological endeavor as "applications." For example, the applied psychology of human-computer interaction has traditionally been defined in terms of the methods and concepts that technology can provide. This has not worked well. An alternative approach is to begin from a characterization of current practice, to take seriously the requirements of the domain of endeavor, and to define areas of "science" and "application" as possible and appropriate in that context.

KEYWORDS: ontology, theory, hermeneutics, interpretation, task-analysis, design rationale

The key problem is that both the concepts and the methods of basic psychology have been specialized for simple and abstract situations. Too much attention was paid to applying psychology and too little to understanding what it was that psychology was being applied to.

In this paper, I adopt a framework developed by Paul Wright, John Long and Phil Barnard for understanding applied psychology. I seek to develop this framework to address different requirements in the HCI domain, that I call Infinite Detail and Emulation. The general thrust of my approach is to urge that we take seriously as *scientific* objects the objects that are important in practical domains: the everyday components of our environment (hence the term "ontologically minimized"). In HCI, the important objects are user tasks and designed artifacts. This approach makes the requirements of all other approaches clear, and it also makes the full range of the practical essence of the domain: it offers unique and direct leverage for the pragmatics of design as well.

INFORMATION FLOW
How can we do better at coordinating and integrating research with application? A promising new thinking line of thought starts with Wright's [1] examination of the relationships between pure and applied work on text. She found "few points of contact" between psycholinguistics and design of text. She suggested an "infinitely detailed and emulated representation" of the text that would be given to the user. Although they would clearly want to make distinctions, this is sketched in Figure 1 (based on figures from Long and Barnard). The key idea is that science provides a representation of the real world. To understand and to apply this representation, we must be able to map between it and the world. This mapping involves intermediary, or bridging representations, specialized for the intended domain of endeavor.

John M. Carroll. 1990. Infinite detail and emulation in an ontologically minimized HCI. In Proceedings of the SIGCHI Conference on Human Factors in Computing Systems (CHI '90). Association for Computing Machinery, New York, NY, USA, 321–328. DOI:<https://doi.org/10.1145/97243.97303>

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Ciclo Task-Artifact di Carroll (1990)

"Human activities implicitly articulate needs, preferences and design visions.

Artifacts are designed in response, but inevitably do more than merely respond. Through the course of their adoption and appropriation, **new designs provide new possibilities** for action and interaction. Ultimately, this activity articulates **further human needs, preferences, and design visions.**"

Carroll, John M. (2013): Human Computer Interaction - brief intro. In: Soegaard, Mads and Dam, Rikke Friis (eds.). "The Encyclopedia of Human-Computer Interaction, 2nd Ed.". Aarhus, Denmark: The Interaction Design Foundation. Available online at http://www.interaction-design.org/encyclopedia/human_computer_interaction_hci.html



Task-Artifact Cycle: Mobilità

Necessità di trasporto → auto → cambio nella mobilità e struttura delle città

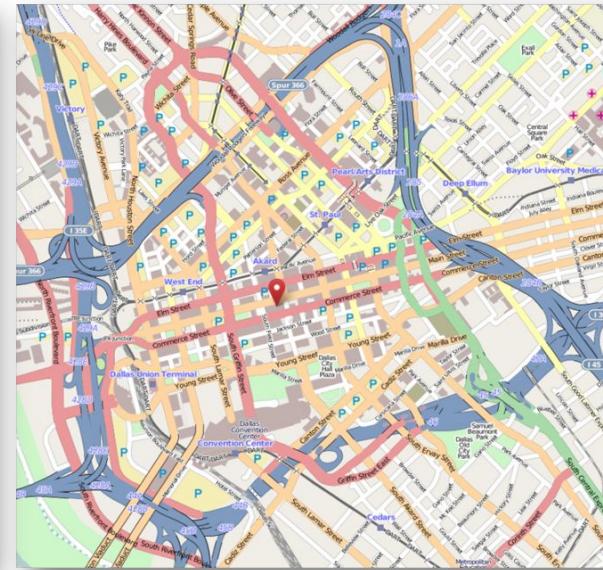


Image from OpenStreetMap:

<http://www.openstreetmap.org/?lat=48.85154&lon=10.48856&zoom=17&layers=M>

Image from OpenStreetMap:

<http://www.openstreetmap.org/?lat=49.48761&lon=8.46736&zoom=16&layers=M>

IUM



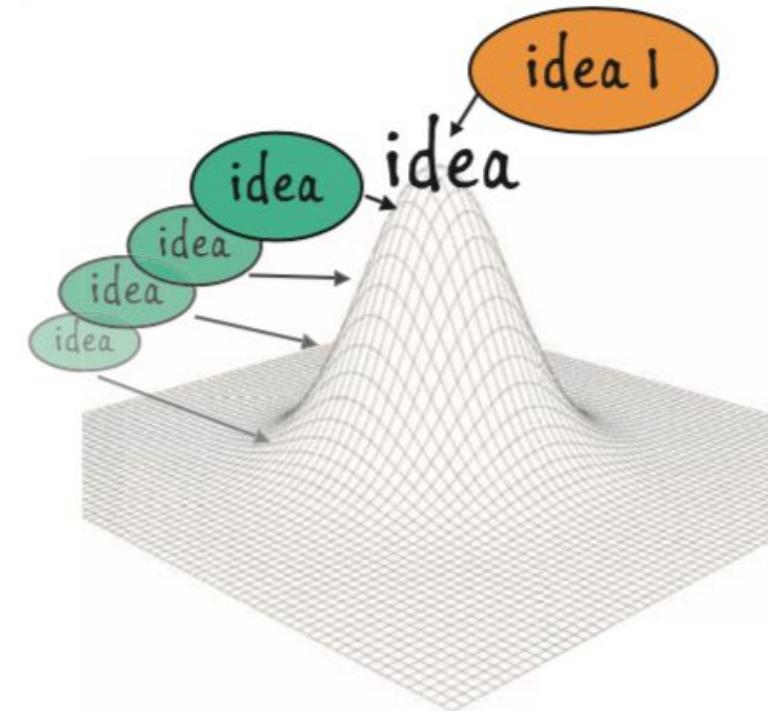
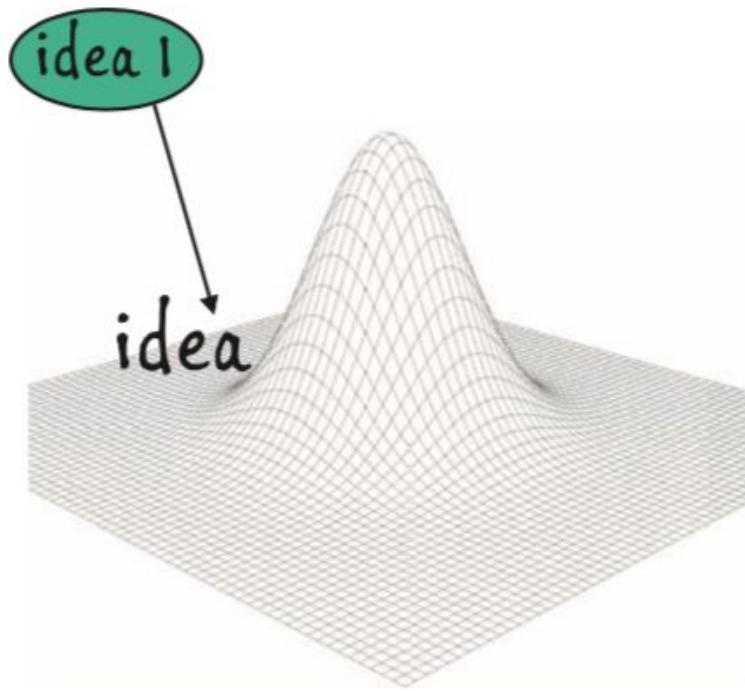
Task-Artifact Cycle: Communication

- Mini exercise: Mobile Phone
- Desire to communicate
 - phone
 - changed social behaviour
 - ...

1. Explain the task-artifact cycle in the context of mobile telephony.
2. How did people meet in town 1990? An how in 2020?
Discuss the impact beyond a single artifact.

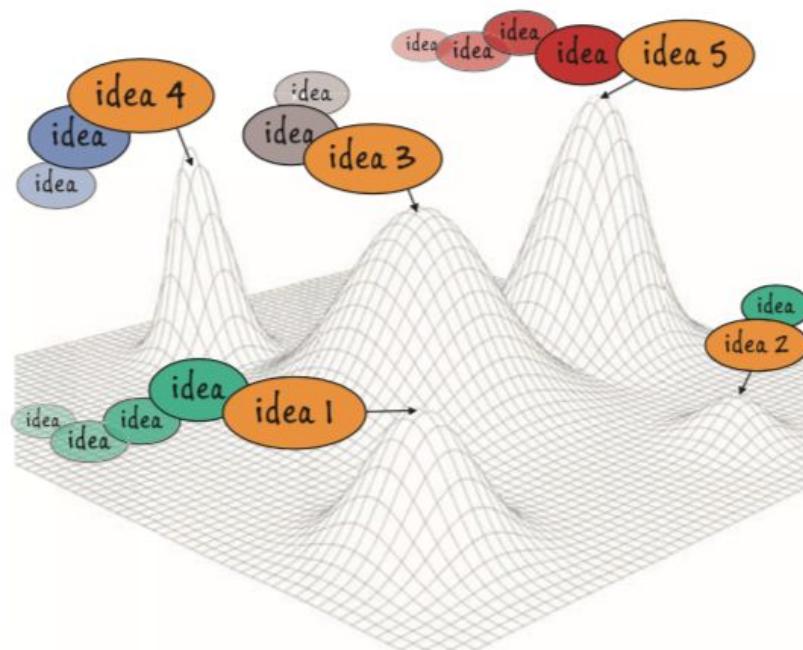


Iterazioni: miglioramento di un approccio

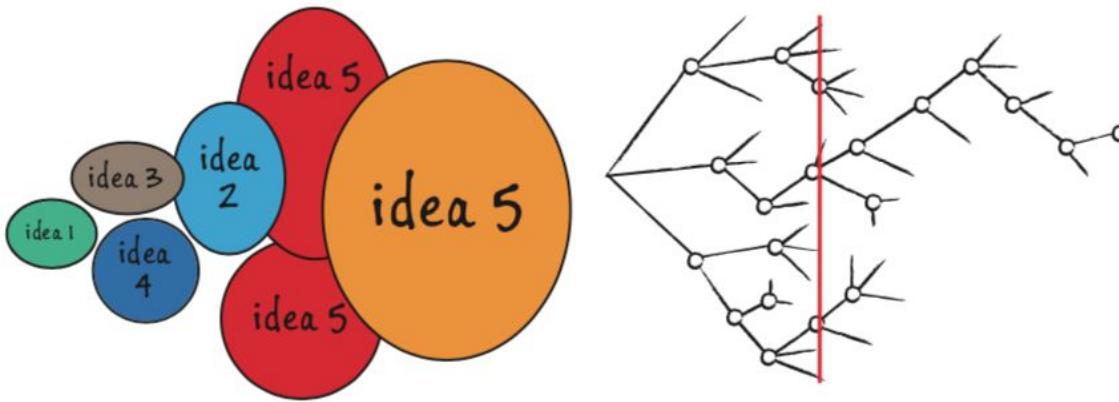




Iterazioni: esplorazione



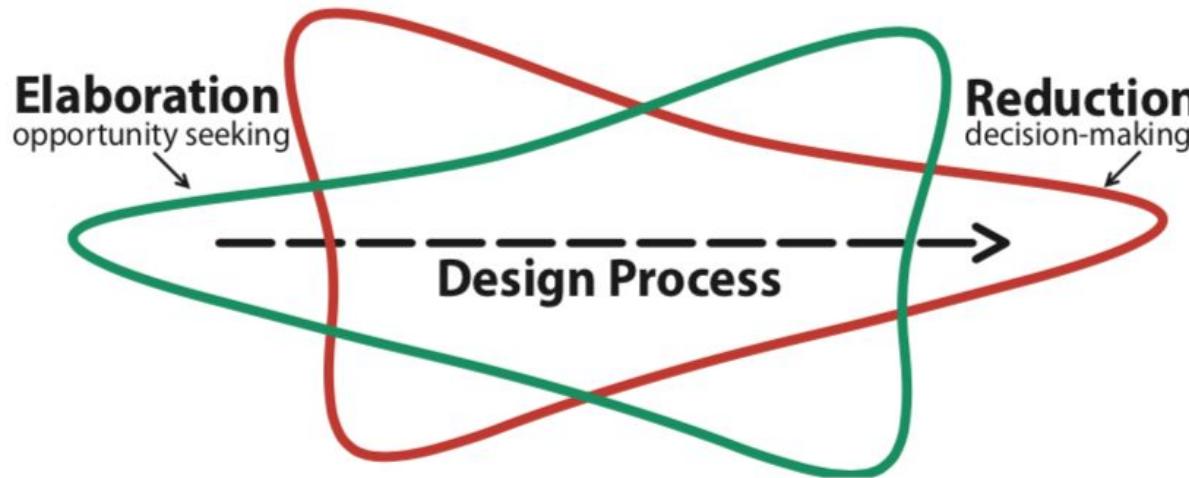
Elaborazione e riduzione



- Si generano diverse idee, nei modi più diversi
- Si riflette sulle idee per migliorarle
- Si selezionano le più promettenti
- In corsa si considerano altre idee quando arrivano

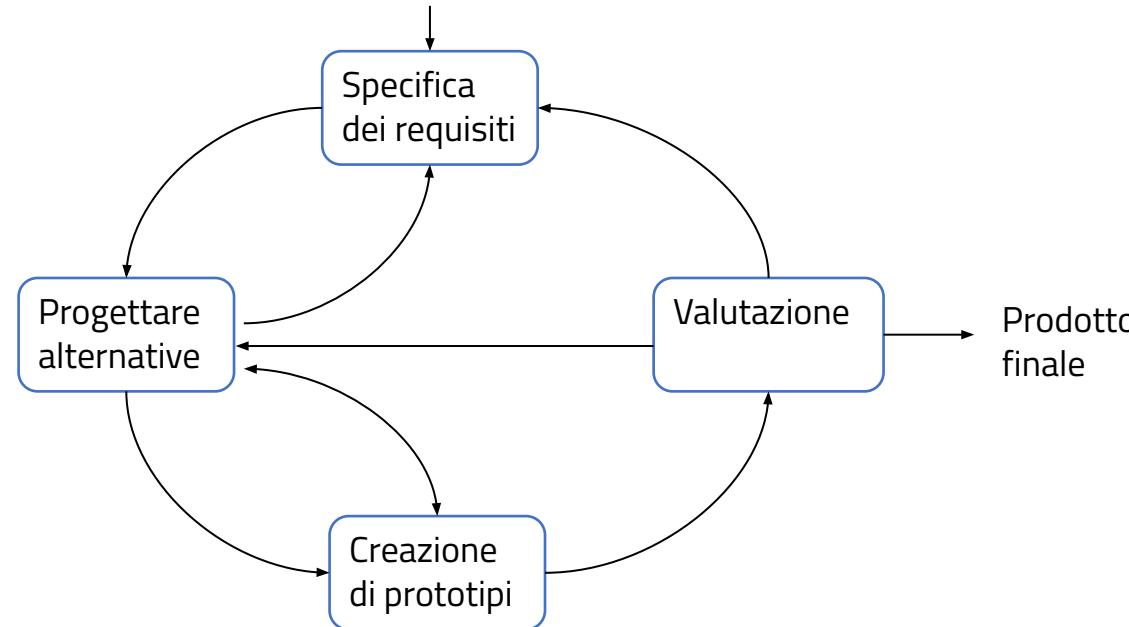


Elaborazione e riduzione (2)





Le fasi (comuni) del processo

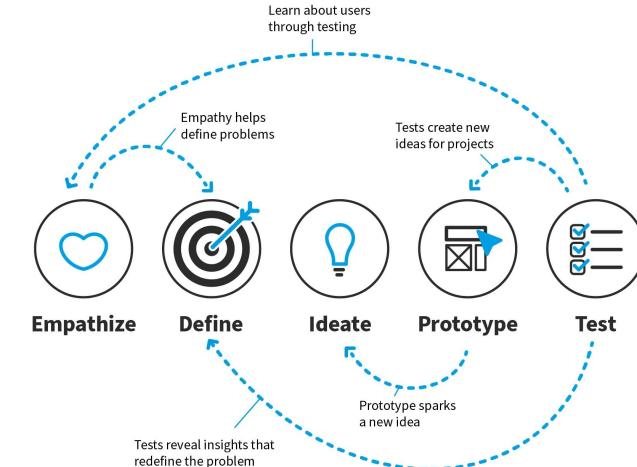




Definizioni di processo simili

- Il processo in sé ha importanza relativa
- È importante cosa *fate* nel processo

Design Thinking: a Non-Linear Process



Interaction Design Foundation
interaction-design.org





Esercizio: Leggere il report

- Nielsen & Norman homepage redesign

<https://www.nngroup.com/articles/case-study-iterative-design-prototyping/>

The image shows three versions of the Nielsen Norman Group website layout side-by-side, illustrating a responsive design. The desktop version on the left has a complex navigation bar with links for Home, Training & Events, Consulting, Reports & Books, Articles, and About NN/g. It features a large central image of people working, a sidebar with 'Our evidence-based approach to UX' and 'Our experts study thousands of websites, applications, and interact with users around the world.', and a grid of articles, videos, and training modules. The tablet version in the middle is similar but with a more compact layout. The mobile version on the right is simplified, prioritizing essential information like the main headline, latest articles, and upcoming training.

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ARTICLE Variations on Predicted Patterns Cause Mistakes Date: Jun 11, 2017 Past experiences and repeated practice inform user expectations. Deviations from those norms lead to user errors.

RESEARCH REPORT User Experience for Mobile Applications, 4th Edition Date: Jun 11, 2017 This year's report offers 383 design guidelines for designing mobile applications. It is based on 177 studies from 13 countries. Download leading studies.

ARTICLE M-Commerce: Turnar UX Date: Jun 11, 2017 Designers can't ignore mobile devices. They have 51% of the market share and 70% of mobile traffic. That means that on mobile, UX needs to be better than on desktop, 20% worse.

RESEARCH REPORT Redesigning Existing and Newer Design to Increase Conversion Date: Jun 11, 2017 Learn how to create engaging, effective, and conversion-optimized landing pages. This research was assessed from a computer, mobile, and tablet perspective.

TRAINING Design Seminar Available: Building a #2 Layout Date: Jun 11, 2017 Get the most out of your layout with Max Tidwell. View his recorded seminar on Design Today TV.

ARTICLE Zigzag Image-Text Layouts Make Scrolling Less Efficient Date: Jun 11, 2017 In two-column layouts, vertically aligned images are less efficient for scrolling than images that alternate placement with text.

VIDEO Writing Digital Copy for Specialists vs. Generalists Date: Jun 11, 2017

ANNOUNCEMENT Training Seminar Available: Writing Digital Copy for Specialists vs. Generalists Date: Jun 11, 2017

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TRAINING Singapore UX Conference Starts 11 Days Date: Jun 11, 2017

ARTICLE How to Deal With Bad Design Suggestions Date: Jun 11, 2017 Good ideas are responded to immediately. From design to design, turn down bad design suggestions.

VIDEO How to Avoid Bias in Card Sorting Date: Jun 11, 2017

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ARTICLE Prioritization Metrics Date: Jun 11, 2017 Past experiences and repeated practice inform user expectations. Deviations from learned metrics lead to user errors.

TRAINING Washington DC UX Conference March 3 - March 5 Date: Jun 11, 2017

ARTICLE How to Avoid Biases in Card Sorting Date: Jun 11, 2017

VIDEO Writing Digital Copy for Specialists vs. Generalists Date: Jun 11, 2017

ANNOUNCEMENT Mexico City Conference Announced: July 2-4, 2017 Date: Jun 11, 2017

ARTICLE Marketing Email and Newsletter Design to Increase Conversion and Engagement Date: Jun 11, 2017 Learn how to create engaging and usable marketing email and newsletters that convert.

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ARTICLE JUNE 12 How to Test Visual Design When evaluating fonts, colors, and other visual details, assess both aesthetic impressions and behavioral effects.

ARTICLE JUNE 13 Prioritization Metrics Past experiences and repeated practice inform user expectations. Deviations from learned metrics lead to user errors.

CONFERENCE JUNE 14 Washington, DC July 2-4, 2018

CONFERENCE JUNE 15 San Francisco August 2-4, 2018

ONLINE SEMINAR JUNE 15 Using Brand to Guide UX Design Sep 2, 2018 with Sarah Gibbons, Chief Designer at Nielsen Norman Group

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Riferimenti

- Dix, Finlay, Abowd, Beale "*Interazione Uomo Macchina*"
 - Cap. 5
- Rogers, Sharp, Preece "*Interaction design*"
 - Cap 9-10-11
- Approfondimento
 - Bill Buxton: *Sketching user experiences*



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