

# Understanding how People with Cerebral Palsy Interact with the Web 2.0

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# Rich Internet Applications (RIAs)

The screenshot displays the Amazon.fr homepage with a search bar containing the text "kin". A dropdown menu is open, showing search suggestions: "kinde dans Toutes nos boutiques", "kinde dans High-Tech", "kinde dans Boutique Kindle", "kinde dans Informatique", "kinde dans Livres en français", "Kindle paperwhite", "Kindle fire", "kingdom hearts", "kinde voyage", and "Kinder".

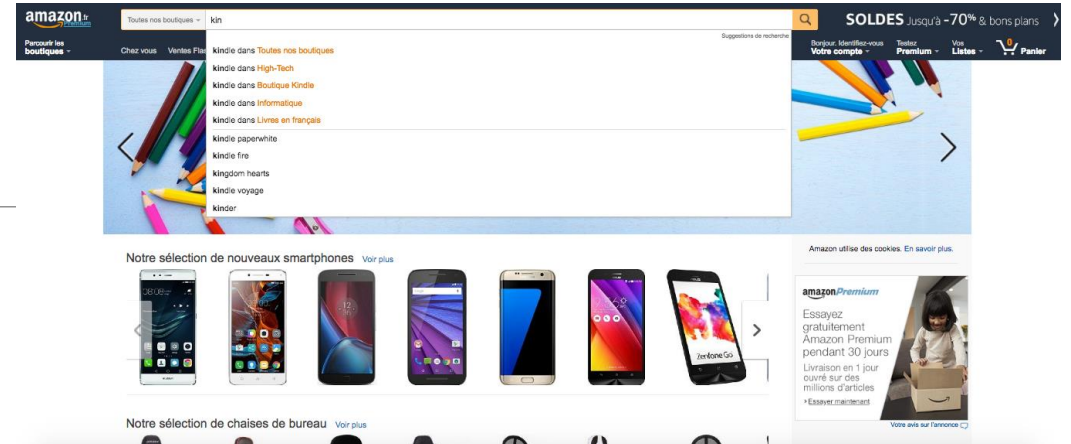
Below the search bar, there are several promotional banners:

- Notre sélection de nouveaux smartphones**: A carousel of various smartphones, including a Zenfone Go.
- Notre sélection de chaises de bureau**: A carousel of office chairs.
- Amazon utilise des cookies**: A small notification banner.
- amazonPremium**: A promotional banner for a 30-day free trial of Amazon Premium, featuring a child opening a cardboard box.

The top navigation bar includes the Amazon logo, a search bar, and links for "Toutes nos boutiques", "Chez vous", "Ventes Flash", "SOLDES Jusqu'à -70% & bons plans", "Bonjour. Identifiez-vous", "Votre compte", "Testez Premium", "Vos Listes", and "Panier".

# RIAs and CP

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- People with CP may present difficulties such as:
  - Lack of control and dexterity;
  - Lack of clarity in navigation mechanisms and the disorganization of page layouts.

# RIAs X CP

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- To better follow the problems that they face and where to direct research efforts:
  - Better understand how they interact with RIAs;
  - Identify the barriers preventing them to access its content.

# Research Design

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- Five (5) users with CP:
  - Three (3) used a trackball;
  - One (1) used a screen reader and a speech recognition software.
- Task executions in seven (7) dynamic websites:
  - Auto suggest list, popup content, tabs, carousel, collapsible panels, slideshow, ticker, popup window and customizable content.

# Results

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- When asked about their general difficulties, two items were constantly reported:
  - “too much information”;
  - “lost all the time”.

# Results

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- Examples of barriers identified during their interaction:
  - Auto Suggest List – lack of a default behaviour between websites;
  - Popup Content – difficulty on retaking the current task;
  - Carousel/Slideshow – difficulty on perceiving as an information list/sequence;
  - Tabs – difficulty on perceiving the content change in corresponding section.

# Results

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- Some other obstacles can also be highlighted:
  - Form fields containing a short hint (placeholder attribute);
  - Identify an error message when the page is not updated.



# Conclusions

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- Condensing all those observations, it was possible to identify common barriers faced by users with cerebral palsy, providing inputs for further studies.

# Future Work

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- Include different subtypes of CP and other kinds of disabilities;
- Deeper analysis of those barriers;
- Outline the relationship with WAI-ARIA guidelines;
- Development of a semi-automated accessibility verifier for RIAs.

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