The path to the CUI is heavily mined and booby-trapped.
Platform / Paradigm Shifts

Desktop • Web • Phone • Bot

Full-screen Text • Windows Icons Mouse • TouchScreen • Mic/Speaker

Type • Click • Touch • Talk
Possible futures exist, like branches on a tree. Most only see the direct path we're on.
“The Macintosh uses an experimental pointing device called a ‘mouse’. There is no evidence that people want to use these things. Why would I want this?”
Mike Lazaridis (RIM CEO), Nov. 1, 2007:

“Try typing on a touchscreen on an Apple iPhone, that's a real challenge.”
Hey David! What are you looking for today?

- Clothing
- Shoes
- Accessories

Great. What kind of shoes?

- Sneakers
- Loafers
- Boots

Type a message...
TYPE VS TALK
3D Virtual Reality
2D WIMP (windows, icons, menus, pointer)
1D Texting / ChatBOT UI
0D Voice User Interface
3D Virtual Reality

2D WIMP (windows, icons, menus, pointer)

1D Texting / ChatBOT UI

0D Voice User Interface
How to create a good **Experience**
Wolf Paulus, 2017

Adaptive

Having a Conversation

Context

PERSONAL AND PERSONABLE

Empathy

to be seen from another's point of view.
understanding and feelings, thought of another. experience of what is thought.
What are good Use Cases
<table>
<thead>
<tr>
<th>User</th>
<th><strong>Hey Geoffrey, let’s create an invoice.</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Geoffrey</td>
<td><strong>Who is it for?</strong></td>
</tr>
<tr>
<td>User</td>
<td><strong>Aymie Knight</strong></td>
</tr>
<tr>
<td>Geoffrey</td>
<td><strong>Congrats, you have a new customer. I’m creating an invoice for Amy Night. How do you spell Amy?</strong></td>
</tr>
<tr>
<td>User</td>
<td><strong>A - Y - M - I - E</strong></td>
</tr>
<tr>
<td>Geoffrey</td>
<td><strong>OK, got it, a new invoice for <strong>Aymie Night</strong>. Now, for how much?</strong></td>
</tr>
<tr>
<td>User</td>
<td>…</td>
</tr>
</tbody>
</table>
If recognized entities need to be **precise** and **valid**, but cannot automatically be **verified**, data collection does not seem to be a favorable use case for VUIs.
Input Length

For reasons including number of entities, complexity, response time, error rate, etc., favorable use-cases require little verbal input.

At least in the near term, a possible rule of thumb could be:

number of words in < number of words out
Execution

Favorable use-cases do more than answering questions or volunteering insights and advice. Instead, they perform tangible tasks, like augmenting, sending, ordering, etc., create a **sense of accomplishment**.
Usage Frequency

A Voice User Interface doesn’t provide the visual cues, user came to rely on, when using GUls.

Infrequent or rare use of a VUI won’t lead to efficient, productive interactions and instead, users will have to re-learn how to best communicate (feeling out boundaries, establishing trust, ..)

**Use-cases that are performed frequently, ideally daily, are favorable candidates.**
Coverage

To minimize frustration, almost all reasonable questions a user might ask, need to be answered. This makes a **single small domain** favorable (at least initially, to learn and experiment, and eventually expand from.)

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**Pilar Manchon**, GM of Voice & Digital Assistance at Intel

"Every time you score down, because you make a mistake or don’t know, it counts a 100 times, for every time you had it right.”
Favorable use-cases for a CUI are those that can be performed faster, or more conveniently, or with less effort, or simultaneously, or …
Roy Charles Amara (Apr 7, 1925 – Dec 31, 2007) was an American researcher, scientist, futurist, and president of the Institute for the Future.

"We tend to overestimate the short-term impact of technological change and underestimate its long-term impact." 2001
Thanks for listening