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CS 185 HW 1

1.

The Web(www) – reality matches projection. The professor in the knowledge navigator video searches online for certain articles which implies use of the web and in both videos the users are connected to many major networks.

Enhanced search engines(Google) – reality falls short of projection. In the knowledge navigator video the professor is basically searching on a whim and the navigator is able to locate the article with very little knowledge.

Touch screen (iPhone) – reality falls short of projection.  In both videos there is almost seamless integration between parts.  Almost everything is interactive and can be dragged, dropped, and combined in a fashion that we don't have in reality.

 easy file sharing(dropbox) – reality matches projection.  There are many different ways to send and share information and files, and this is shown in both the movies.

Portable tablet (ipad) – reality exceeds projection.  The knowledge navigator is shown to be rather large and bulky, whereas now we have extremely small and sleek designs for our tablets.  The Ipad and other tablet devices lack a removable memory card which the navigator did have.

Reliable face to face online communication (gotomeeting, facetime, skype) – reality matches projection. The movies put users face to face and even makes multiple users connect to make a meeting, which can all be done today.

Cloud(icloud) – reality matches projection. storing files and all sorts of media online, and having the ability to share it with others.

AI( both UIs have strong AI, but most examples today would be weak AI such as Siri) reality falls short of projection.  Both videos have extremely advanced AIs that are capable of thinking and learning, making them strong AI, which we do not see in today's market, but as with Siri we have examples of weak AI that are able to act intelligently.

Voice command  / speech to text (siri) – reality falls short of projection.  The voice recognition in the videos is almost flawless and has the ability to interpret almost any command, it is far superior to what we have in place today.

Voice recognition (used in password security) – reality falls short of projection.  In the videos the users are able to be identified by their voice, or at least that is what it indicates.  This may be used as a type of security for passwords possibly but it isn't used as in the video.

2.

3d camera usage-  in the starfire video someone remotely shares the control of a video camera so that she can do the work from her office.  This technology should be readily available I just haven't seen it used before.

Easy scanner – in the starfire video a newspaper article is scanned in by simply placing the newspaper down on the screen and pressing on it.  This would mean that any part of the computer was capable of scanning, this would take improved touchscreen and hardware technology.

Interactive video design – In the videos there were times where the users would simply use voice commands to combine graphs and other pictures together.  In addition to that, 3d models were easily rendered by copying and pasting certain attributes from another photo.  This technology would most likely resemble photoshop, but it would need extra 3d capabilities and smarter computer AI as well.

Gesture recognition – In starfire, the user can scan something by pressing on the parts that need to be scanned, and objects can be deleted off the screen by a swiping motion, while they can also be moved by a similar drag and drop motion, without any additional input to specify.  This is an extremely advanced way of recognizing gesture, and would need a AI capable of knowing context sensitive input, once again pointing to strong AI.

Strong AI – The AI used in both videos shows extremely strong capabilities to learn and act intelligently.  It almost acts as another human being, which is where AI is headed, but it needs better ability to learn from its inputs and experiences.

3.

10 years:

Better speech recognition

Better AI (Strong AI capable of learning)

25 years :

Self-driving cars

Human embedded systems (enhanced processing and memory through hardware)

4.

Starfire video- Provide text alternatives – the user and the computer can both clearly communicate through means other than text, as speech is commonly used.

Minimal input actions by user- by using speech as input, this eliminates the idea of typing errors, assuming that the speech recognition is flawless, which it is represented to be in the movie.

Compatibility of data entry and data display- by watching the commercial for the car and looking at the report, Julie is able to not only look at them but conveniently alter them and change them to her liking.

Knowledge Navigator.

This also provides text alternatives in the same way the starfire video does.

flexibility for user control of data display – when the professor is looking at his colleague's article and then he wants to add a certain chart into his notes, it easily creates a workable chart and inserts it to the document.

Present data only if they assist the operator – when the professor is searching for the certain article the search only responds with the actual information he needs, and doesn't show any extra information.

5.

a) In the Starfire video, there is clear usage of not only direct manipulation but natural language as well.

In the Knowledge navigator movie we see less direct manipulation and heavier use of natural language to operate.

b) Starfire video:

Offer informative feedback – Since the computer is very interactive, it can alert the user to upcoming events, and also the direct manipulation shows instant feedback that can be assessed.

Permit easy reversal of actions – when the sandwich is scanned into the computer, Julie was able to delete it with a simple swipe of her hand.

Reduce short term memory load – Since the interface is quite large, everything can be displayed at once. Not only that, but since the computer can interpret commands rather easily, things can be moved and combined easily, such as when rendering the 3d model for the commercial.

Knowledge Navigator:

Offer informative feedback – with the search that the professor conducts, it offers suggestions to help him with his search and alerts him about his results.  It also acts as a necessary planner/secretary that can handle his personal needs.

Support internal locus of control – when the navigator is booted up, it seems to run through a typical rundown where it tells the professor what he needs to do, and the professor is able to address all his needs very efficiently with only a few verbal commands.

Reduce short term memory load – since the AI is very advanced, the gaps in the professor's memory are aided by the computer which helps him.

Shortcomings

Both videos seemed to not address the 2$^{nd}$ principle: Cater to universal usability.  I noticed that they did not seem to address the novice users to such things.  There were not many instances of directions being offered and no starting point.  It seemed like the usage of both objects was already mastered by the users, but offered no learning assistance to a first time user.