How to Make and Adapt an Interactive Pdf That Acts Like an App

For the Manufacturing Pasts project (http://www.le.ac.uk/manufacturingpasts) we have made some Powerpoint shows saved as pdfs, which retain their clickable interactivity. Begin by making a Powerpoint show, with internal links from one slide to another. By linking one slide to another and back again, with the option to navigate back to the 'home' page (probably the first or second slide), you make your Powerpoint show resemble a website or an app. Then by saving it as a pdf, you ensure that the user does not need to have Powerpoint on his computer in order for it to run. You also ensure that it runs nicely in a browser, and also runs nicely on pretty much any mobile device. NOTE: this instruction sheet is for Windows Powerpoint. I don’t know if this can even be done using a Mac.

1. Think through the design of the Powerpoint show

You may wish to employ pencil and paper to sketch this out. Plan for a home page, which is the slide holding the main design and to which the user will always return. The home page may be your slide 2, where slide 1 is the opening 'splash' page with title, author, and contextual information.

Your home page will consist of a set of images or text boxes representing your topics. The user may click on the image or text box, and then be taken to another slide to read and see something, then have the option of going forward to another slide having to do with that same topic, or back to home. I have created two of these 'apps' for the Manufacturing Pasts project, and in both of them I used a similar design:

![Diagram of Powerpoint show design](image)

Figure 1: Basic design of Powerpoint show
Within the Home Page slide on diagram 1, each of the numbered circles stands for some image or text box representing a single topic, which the user can click on, and then click through several slides all pertaining to that topic.

![Diagram 1](image)

Figure 2: Corah App home page

As an example, here is my home page from the Corah App. Each of the pictures represents the topics to which I refer in diagram 1. Also, the words across the top of this slide serve the same purpose as the pictures; when you click on a word or on its corresponding picture, the user is taken to the 'topic stream.'

2. Set up Topic Streams
Create all of the slides which pertain to your first topic, and have them in the order in which you want the user to encounter them. For example, Figure 3 shows my Topic 1 Stream. Notice the forward and back icons at the bottom right of each, and notice that the top of each of the slides is exactly the same -- although at this point you probably cannot do the slide top yet. Just remember that making them all the same is the goal.

Another way of doing this, is to have nothing at the top of each slide except the home icon. That greatly simplifies the procedure. To do this, click **Insert, Shapes, then under Action Buttons**, select the 5th icon (looks like a house). The cursor will turn into a crosshair, by which you draw the size of the home icon. In the resulting box, tick **Hyperlink to**, then select slide which is your home page. If it is slide 2, you must select **Slide...** then select slide 2. You may also wish to format the home icon by getting rid of the blue fill, or some such. Close, and you have a home icon which, when clicked, takes the user back to the home page.
Figure 3: Topic 1 Stream

To add the forward and backward icons at the bottom right, select Insert, -- Shapes -- Action Buttons. The 'next' and 'previous' buttons are the first two choices; just select which you want, and place on the slide as you wish. When you let go, you will see an Action Settings box, where you select either Previous Slide or Next Slide.

You need to create each of your topic streams in the same way. When you have created each of your topic streams, you are ready to set up the home page actions.

Going back to home can be accomplished by the word HOME, or the Powerpoint icon of 'home', and designating that clicking the icon takes the user back to the...
home page (more on that in step 3). It is best to situate the home icon in the same place on every single slide (except the title slide which doesn't need it) --- usually in the leftmost upper corner.

3. Set up actions

How to make the home page elements link to the different topics:
Using Figure 1 and focusing on the #2 circle as our example, you want to set it up so that when the user clicks on the #2 Circle, the next slide that comes up will be slide 5.

Select Insert, -- Shapes -- Action Buttons. Select the last icon: Custom. (The icon is an empty square.) The cursor now looks like a crosshair. You must use the crosshair to draw a rectangle around the item you wish the user to click on. Once you do that, the box below comes up:

![Figure 4: Actions Settings box](image)

Tick Hyperlink to, then click on the down arrow next to Next Slide, and you will be able to choose 'Slide...' and then choose which slide -- in this case, slide 5.

Now here is slightly tricky and counter-intuitive bit: the square will be solid blue. So you must right-click on it and select Format Shape. First select Line Color at the upper left then No Line. Then select at the top left: Fill, then Solid Fill, then slide the Transparency to 100%. Click Close and you will now have an invisible box which, if you click on it, will take the user to slide 5.

So go through your home page and make sure that every element you want to have a clickable action works the way you want. If your presentation features a bar across the top with clickable words taking the user to the different places in the presentation, you need to draw custom invisible action boxes, just as described above, over each word. Be forewarned -- in order to replicate this bar so that it shows on every slide, I have had to duplicate the home page, then get rid of all the other elements other than the top bar. I have not figured out a foolproof way of copying the bar and all of its action buttons so that they continue to work after copying. Therefore, using the bar across the top is time-consuming -- although it is good for navigation.

Go through and test your presentation as a slide show. This is the only way to make sure the actions work correctly. Be thorough.
4. Saving, distributing, and using the interactive pdf and Powerpoint file

Once your presentation is completely working well, save it as a pdf using one of the free PDF utilities or an Adobe utility you may have access to. The pdf will retain most of the actions -- it won't retain automatic timed movement from one slide to another which can be achieved in Powerpoint, but it will retain clickable movement from one slide to another, as described in this helpsheet. PdFs also run nicely in browsers, and Adobe Acrobat Reader is free (while Powerpoint is not free) and so it is a good idea to offer the pdf version in addition to the Powerpoint version. A final note about pdfs is that they run nicely on every Apple and Android handheld device I have tested them on. (I have not tested on Blackberry.)

I also advise saving and distributing the original Powerpoint show as a lower version of Powerpoint in case your users don't have the latest Powerpoint version, and also to distribute it as a 'show' rather than a presentation. This ensures that it will immediately launch into the show when it is double-clicked. So, distribute a .pps file.

At University of Leicester, we have had great success making use of such a Powerpoint show pre-installed on Windows tablets which students have taken on field trips to have instructor-supplied multimedia information in their hands while on the trip. On a Windows device, the Powerpoint show is indistinguishable from a custom-made app, especially if you have a shortcut to the show ready for the students on the 'desktop' of the device.

5. Reusing and adapting the interactive pdf (and original Powerpoint)

A Powerpoint show, when double-clicked, launches as a show and gives the impression that it cannot be edited. However, it can be edited -- just launch Powerpoint first, then select Open - and locate the show file; open and edit it. Then save it as a pdf as in step 4.

You can therefore add to and adapt any of the interactive pdf/Powerpoint show materials distributed by the Manufacturing Pasts project. For example, you can add more photos to the Corah app, to give more illustration to the Social Life of the Factory. If you wanted to add more photos to, for example, the Technology section, you simply open the file in Powerpoint, select a slide within the Technology topic stream and duplicate that slide, then delete the old photo and add your own. You may need to adjust the forward and back navigation within the topic stream, then double check the show to make sure navigation works throughout. Follow the instructions in step 3 if you need to adjust any action buttons. It is worth the effort to create a clever interactive Powerpoint show and corresponding pdf.