ICT Prototyping Phase 6 Evaluation

DESIGN A COAT OF ARMS

20th June 2000

Executive Summary

The Design a Coat of Arms device yielded a positive response from the public. Oyster will address the most significant problems that arose in the next phase of the project. These included design of the home page, incorporating backward navigation throughout the device, fixing the colouring options throughout the process, and making the display of heraldic descriptions much more prominent.

The visitors gave the Design a Coat of Arms a score of **4.1 out of 5** (Good) for enjoyment. V&A staff gave the Design a Coat of Arms a score of **3.2 out of 5** (Good) for enjoyment.

From the Evaluators' perspective, the enjoyment ratings from the public are already very good, and will yield even better scores when this device is retested after the next build. Although the staff score was low, the sample size was very low and most staff recognised that the terminal was not really aimed at them and particular staff concerns about more detail about bookplates themselves will be addressed.

Introduction

Brief for the Device

The Design a Coat of Arms terminal is one of five 'Design' devices that will appear in the galleries. It will be primarily accessed in the Tudor & Stuart Discovery Area. The following objectives for the device are those taken from the original Evaluation Strategy for the ICT.

- To introduce some of the basic heraldic elements used to create a coat of arms.
- To introduce the terms derived from mediaeval French used to describe these elements.
- To encourage visitors to engage with the objects on display through active involvement.
- To provide an easy means for visitors to create their own coat of arms.
- To maintain a record of the design activity including print-outs of their designs.
- Make clear the connection to other linked activities.

Brief and Overall Methodology for Evaluation

The Museum wished to assess how the content and design of the interactive might be improved. In particular:

- The programme should be easy for general visitors to use and especially suitable for families
- The language level and tone should be appropriate for visitors.
- Visitors should enjoy using the interactive.
- Visitors should be able to design their own coat of arms.

Analysis of the evaluation focused on usability, content (audience relevance) and technical performance.

The testing of ICT devices is different to other testing undertaken for the British Galleries because information from public testing has been combined with evaluation by Project staff working on the device together with data gathered from testing with the wider Museum staff. The advantage of this methodology is that visitors offer a user perspective that cannot come from staff. Project staff involved in its development pick up on content errors and some of the subtler navigation and technical issues that a first-time user may not notice. The wider Museum staff frequently, but not always, respond as people who are very familiar with the general subject matter of the device.

Description of Prototype Device

The prototype device was constructed according to the 'Review Stage 1 - Content and Concept Report'. The device differed from the report in the following ways:

- A limited number of sub-ordinaries were available to the visitor.
- A limited number of supporters were available to the visitor.
- A limited number of crest/mantle/torse/helm combinations were available to the visitor.
- A limited number of mottoes were available to the visitor.
- Automatic colouring of crest/mantle/torse/helm combinations was not implemented.
- Linking with other devices disabled. The final device will allow incorporation of coats of arms and monograms.
- Printing and saving disabled. The final device will allow designs to be saved and printed.

Description of Testing

Hardware and Software

Testing was conducted on the prototype test rig using two 15" screens connected to PIII 500's under Windows NT with 128MB RAM. Screen resolution was 1024x768 with 24bit colour.

Server architecture utilised a Sun Ultra5 running applications through Apache under Solaris 7. Database architecture was Oracle 8.0.6 with Java served through NewAtalanta ServletExec 2 and Sun JDK 1.2.1.04

Test conditions match those specified in the original System Architecture Definition Report. The exceptions to the definition were:

- Recent updates and patches to previously specified version of server architecture (JDK, ServletExec, Solaris, Oracle).
- Replacement of Netscape Enterprise Server to Apache.
- Switch to a UNIX based server to increase the stability of Oracle database.

The software program was run through Internet Explorer 5.5 running in kiosk mode.

Methodology and Environment

The test was carried out in the Best of British Gallery in a part of the gallery where there were objects with coats of arms on them, including some bookplates featuring coats of arms in a case immediately adjacent to the test rig. Two touch screens were placed on a small trolley with stools for visitors to sit on. Interviews were conducted by the evaluator and Multimedia Manager on 15 April and by the Device Manager on 17 and 19 April. The test dates were on a Saturday and during the Easter school holidays in the hope of attracting families, who are a key target audience for this programme.

The programme offered visitors the option to complete the design of a coat of arms. The existing programme offers approximately 70,000 options for creating different designs of coats of arms. In completing a design, visitors were are taken through the following steps:

- Choose a Shape
- Select Divisions
- Colour divisions
- Add honourable ordinary
- Colour honourable ordinary by metal
- Select sub-ordinaries
- Colour sub-ordinaries
- Select position
- Add mantle/torse/crest/helm
- Select supporters
- Add mottoes

A combination of observation and interview was used in order to see how visitors used the device without direction. Afterwards visitors were asked about observed behaviour as well as about previously defined issues.

Visitors were invited to use the programme and, when they had had enough, to answer a few questions. The visitors' use of the programme was observed by the interviewers. Visitors were asked to comment generally on their use of the interactive and also about the following specific issues:

- Whether they could name any of the elements in a coat of arms.

- Whether they would have liked to save their coat of arms and print it out in the museum or e-mail it out of the museum.
- To rate the activity for enjoyment on a scale from one to five where: 1 = Very Poor; 2 = Poor; 3 = OK; 4 = Good; 5 = Excellent.

In the analyses, comments and observations are at times reported alongside each other.

Five staff tested the interactive. The findings from this investigation are reported separately from the responses from visitors.

The questionnaire used to interview visitors and staff is attached at Appendix 2.

Description of Sample

	Visitors	Staff
Number of people	46	5
Gender	Male = 25 Female = 21	Male = 0 Female = 5
Age	Under 25 yrs = 18 25-34 yrs = 5 35-44 yrs = 3 45-54 yrs = 9 55 plus yrs = 11	N.A.
English as first language	Yes = 33 No = 13	N.A.

Visitors were from UK (25); USA (8); France (5); Portugal (2); Denmark(2) and one each from Australia, Canada, Germany and Iran.

Sixteen visitors were interviewed in a group of two and six in a group of three.

Amongst the under twenty-fives, there were nine school-age children including two nine-year-olds, two twelve-year-olds, two sixteen-year-olds, one ten-year-old, one eleven-year-old and one fifteen-year-old.

Staff were from Bethnal Green Museum (2 Student Interns), British Galleries Project, Research Department and Sculpture Department.

Findings from the Public and Staff Testing

VISITORS

Usability

- Forty-three positive comments about the navigation of the programme were recorded.
- The colour choice screen elicited a range of issues (13 comments), both technical and conceptual: limited choice of colours; lack of awareness of how to obtain the second choice of colour; having to make a choice (instead of leaving blank), and the slowness of the colour painting on screen.
- Some difficulty was experienced over appropriate selection of icons/buttons (seven comments).
- Some visitors found the home page difficult to use (six comments).
- Visitors reported a failure to realise that they could make changes to their coat of arms at any stage (six comments and observations).
- Six visitors requested a back button.
- The first division of the shield posed problems for three visitors.

Content (Audience Relevance)

- Twenty-nine visitors were asked if they thought that the activity was aimed at a general or specialist audience and all replied that they thought it was for a general audience [why were only 29 asked?].
- Twenty-one comments indicating a sense of loss of autonomy while using the programme were recorded, e.g. 'Why do you have to choose an ordinary?' These visitors wanted to make their own choices from a greater range of options.
- Sixteen visitors requested a translation of the mottoes.
- Eleven visitors commented on a perceived lack of interpretation regarding the symbolism and significance of the elements they were asked to choose from.
- Nineteen visitors (41% of sample) felt able to respond to the question asking them about the elements of a coat of arms. However, they could only give very general responses. Eight comments regarding this situation were also made. This poor response was obviously given because visitors didn't look at the bottom of the screen and so may have missed the information that was given.
- Thirty-six visitors (82% of a sample of forty-four visitors) would like to print out a self-designed coat of arms in the Museum.
- Thirty visitors (68% of a sample of forty-four visitors) would like to be able to e-mail a self-designed coat of arms out of the Museum.
- Visitors enjoyed the programme: twenty-five comments giving general approval of the activity and seven specific references to the topic of coats of arms were recorded.
- The average score given to the activity for enjoyment was **4.1** (Good).

Score of 1	Score of 2	Score of 3	Score of 4	Score of 5
0	0	6	28	12

STAFF

Usability

- Navigation lacked clarity
- Some confusion over what buttons to press to carry out stage.

Content (Audience Relevance)

- Four of the five staff members would have liked to print out their coat of arms. One would have liked to e-mail it out of the museum.
- Staff wanted more explanation of the symbolism and wanted a translation of the mottoes.
- The staff gave the programme an overall rating for enjoyment of **3.2** (OK).

Score of 1	Score of 2	Score of 3	Score of 4	Score of 5
0	1	3	4	0

- This is a very small sample from which to derive an average rating.

Evaluator's Conclusions from the Public and Staff Testing

The following were the overall recommendations for the further development of this device.

- Visitors need definitions of the heraldic terms and design elements used in the programme in order to use the programme in a meaningful way. They are also interested in the symbolism of the various elements. This aspect of the content should be reviewed. **NB notes that comments contained by series managers. Symbolism representations is not feasibly possible so ignored.**

- The mottoes should be given in English or a translation of the Latin should be offered.

- The visitor's sense of autonomy as a learner and actor needs greater support as the activity is quite routine. Provision of definitions may help visitors to accept this routine (they could then make executive decisions) as would a simple explanation that heraldry is very rule bound. The provision of more choices within elements could also be considered in this context.

- Attention should be paid to the design of the home page in particular making it clearer how to progress to next screen, i.e. the first stage of the design process.

- The screen where colour is added needs to be reviewed for usability. In particular, attention should be paid to making the process of selecting a second colour more explicit. The button is not very obvious.

- Overall, attention should be paid to the ease of understanding of the purpose of buttons and icons.

- Consideration could be given to providing a back button.

- Consider providing more choices at each stage.

- It needs to be clearer that changes to the coat of arms can be made at any stage.

- The instructions for making the first division of the shield may need clarification.

- Provide the facility for visitors to print out their designs.

- Consider providing the facility for visitors to email their designs.

Brief for Phase 6 - Design a Coat of Arms

Against each recommendation, included here are items for redevelopment in Phase 6.

ACTION 1

- The visitor's sense of autonomy as a learner and actor needs greater support as the activity is quite routine. Provision of definitions may help visitors to accept this routine (they could then make executive decisions) as would a simple explanation that heraldry is very rule bound. The provision of more choices within elements could also be considered in this context.
  - **Oyster to keep existing colour designs**
  - **Oyster to implement structure of device according to revised device map.**
  - **A revised content table is included against the new map. Content now includes instructions for each screen.**

ACTION 2

- The screen where colour is added needs to be reviewed for usability. In particular, attention should be paid to making the process of selecting a second colour more explicit. The button is not very obvious.
  - **In the next phase, Oyster to revise the usability of buttons for colouring divisions by breaking the process into two separate screens.**

ACTION 3

- Overall, attention should be paid to the ease of understanding of the purpose of buttons and icons.
  - **In the next phase, Oyster to remove the stage buttons at the top of the screen.**

ACTION 4

- Consider providing more choices at each stage.
  - **V&A to decide if we want to provide more choices.**
  - **In the final development phase, Oyster to consider that all original choices from device map will be included (more at sub-ordinary, mantle/crest, and motto stages).**

ACTION 5

- Provide the facility for visitors to print out their designs.
  - **In the next phase, Oyster to demonstrate print quality of designed shields.**

ACTION 6

- The Home Page needs redesign to make the process ahead clearer. The existing numbered stage buttons should be replaced, perhaps with an animation of the whole design process.
- Attention should be paid to the design of the home page. [in particular making it clearer how to progress to next screen, i.e. the first stage of the design process?]
- Text at the beginning and end of the programme should make it clear to the visitor that the use of coats of arms designed in the Museum is prohibited according to the rules of the College of Arms (without intimidating the user too much).
  - **In the next phase, Oyster to redesign the homepage to clarify the process ahead and distinguish the active button that starts the process. Text on home page must also deal with issues of use of the coat of arms according to the rules of the College of Arms.**

ACTION 7

- Each stage should have selectable options labelled with their heraldic descriptions. There should also be clearer instructions at each stage.

- It needs to be clearer that changes to the coat of arms can be made at any stage.
  - **Oyster to ensure that every element that can be selected at each screen is labelled with the appropriate heraldic description**
  - **Ensure that every screen has appropriate instructions according to revised content table. NB to include content table.**

ACTION 8

- Each stage should include a back button.
  - **In the next phase, Oyster to include a BACK button at each stage.**

ACTION 9

- More needs to be made of the heraldic description. This should "build up" on screen in a much more obvious way after the options at each stage have been selected.
  - **In the next phase, Oyster to revise the way the heraldic description builds up. Potentially move the heraldic description to a more prominent position and let the descriptions slide onto screen after the visitor has selected an option at each stage and that option has been animated/included.**

ACTION 10

- The Museum needs to approve existing animations at each stage. The current stamp animation used for honourable ordinaries needs some rethinking.
  - **In the final development phase, Oyster to revise the currently proposed animation for the stamping of honourable ordinaries. V&A requests changing the wooden texture of the stamp to something more metallic.**

ACTION 11

- The options for large honourable ordinaries for plain shields need to be included. Options for large honourable ordinaries should be a single lion rampant, a single rose and the existing cross.
  - **In the final development phase, Oyster to include all required options at each stage. Specifically, include large honourable ordinaries (lion rampant, rose, 3 smaller roses, cross).**
  - **In the next phase, Oyster to remove the existing option to not include an honourable ordinary by leaving the shield plain. Check the bug with NB.**

ACTION 12

- Colours used for metals and sub-ordinaries need to be more accurate. Existing colours contain transparency and appear incorrect.
  - **In the final development phase, Oyster to revise the colouring of sub-ordinaries so that colours don't appear so pale compared to the actual colours visitors select. Check the alpha transparency in originally supplied graphics as this may show the route of the problem.**
  - **In the next phase, Oyster to revise colours and display of Metals. Try to make these like the actual colour that is added to the shield when the "metal leaf" is laid flat". Remove the textured look to the "metal leaf". Change the selection option on the right of the screen to match the colour that is put on the shield.**

ACTION 13

- The graphics used for King and Queen need to change to a different but suitable royal crest. The existing royal crest could be considered contentious.
  - **In the final development phase, a revised Royal Crest to be defined by the V&A.**

ACTION 14

- Reduce the size of the Baronesses coronet.
  - **In the final development phase, reduce the size of the Baronesses coronet by about half.**

ACTION 15

- Include the automatic colouring of the mantle and torse for a Baron's shield.
    - **Oyster to include the automatic colouring of mantle and torse in the Baron route. Check the alpha channels of originally supplied graphics where cut-outs should be included.**

ACTION 16

- Mottoes need English translations.
- The mottoes should be given in English or a translation of the Latin should be offered.
    - **In the next development phase, Oyster to include English translations for the mottoes.**

ACTION 16

- Bugs
    - Fix existing bugs with the dragon sub-ordinary.
    - Fix existing bugs in painting plain female shields.
    - Improve performance throughout especially speed of transition from home page to 'Choose Male or Female' and from 'Choose a Position' screen to king/baron..etc screens.

Notes for Development Phase 2 - Full development of Design a Coat of Arms

- All heraldic elements will need modification to allow for inclusion in programme. Copyrights for these images will need to be sought.
    Who will do this?
- More options for sub-ordinaries and helm/crest/torse/mantle/mottoes will be included.
- The Royal Crest will need to be revised in collaboration with John Meriton.
- Saving/Printing needs to integrate with existing plans for saving/linking/BGN.
- *Print quality to be investigated.*
- *Print speed to be investigated.*

Notes for Development Phase 2 - Full development of other 'Design a...' devices

- Any screen in a design device needs to provide clear instructions as to what is required of the visitor.
- Provide clear separation between system navigation and screen function buttons.
- Ensure print quality of designs is highest possible within system constraints.
- Format and style of content provided to Oyster needs to be specified by Oyster.
- Standardise on navigation for all Design a Devices.

Notes for 2nd Round of Testing

There are no plans to retest this device with the public.

APPENDIX 1 - Quotes from Visitors and Staff

Quotes from Visitors and Observation Notes

Usability

Navigation (43 positive comments and 2 negative)

- Easy/very easy to follow (24 visitors)
- Simple (10)
- Quick (3)
- Very clear (2)
- Very good
- Straightforward
- Fine
- A dyslexic visitor with reading difficulties said she really enjoyed the programme.
- Navigation instructions would be helpful.
- Navigation is alright but you need more explanation about what to do and whether you can change things.

Colour (13 comments and observations)

- More colours are needed (4 visitors).
- On colour choice, visitor did not realise the need to press the button for the second choice.
- Make the gold and silver colours better.
- The brush painting the colours takes too long.
- Visitor needed help doing division and colours and later noticed the multiple options on each screen.
- Visitor confused by having to choose two colours - went to NEXT and then worked out what to do.
- Visitor stuck on selecting a colour for sub-ordinary.
- Visitor did not realise the need to move to the second button for the second colour.
- Visitor did not realise that she had to choose a colour for the sub-ordinary.
- On quartering pattern, if the left is left plain, painting of colours will not occur.

Use of icons/buttons (7 observations)

- Visitor showed initial hesitation over touching NEXT.
- Visitor did not know whether to press icons or buttons.
- Visitor unsure whether to press button or shape and this caused problems as she had to press NEXT to move screen on.
- Visitor touched STAGE to start several times before noting the NEXT STAGE button. He skipped the first colour selection, went out of the second colour selection then couldn't work out why he could not go on to the next stage.
- Visitor got stuck when adding an ordinary.
- Visitor confused about what to do.

Home page (6 observations)

- Visitor stuck on first screen and had to be told to press DESIGN A COAT OF ARMS button (2 visitors).
- Visitor pressed STAGES not DESIGN A COAT OF ARMS on home page.
- Visitor complained of confusing positions of buttons on the home page (2).
- Visitor touched on an element in an attempt to start.

Making changes (6 comments and observations)

- Visitor used multiple option without problems (2 visitors)
- Visitor understood the colour swapping easily.
- I like being able to change the details.
- Visitor chose and rejected colours confidently.
- I didn't realise that you could run the choices.

Back Button (6 comments)

- I want a back button (5 visitors)
- I want a back button to change the colours.

First division of the shield (3 observations)

- Visitors could not work out how to do the first division of the shield and asked for help. (3)

Touch screen (2 comments)

- It's not sensitive enough.
- I would rather select by touch than with icons.

Content

'Can you tell me about any of the elements making up a coat of arms?' (19 responses in a sample of 46)

- I read the heraldic description (3 visitors)
- It is in stages (2)
- I didn't notice the names of things because the bottom of the screen is more prominent.
- Shield shape
- Dividing the shield
- Ordinary and sub-ordinary
- Name of base, mantle
- Base, mantle, supporter
- Colours, metals, divisions
- Colours, martletts, chevron
- Colours, shapes on shield, chevrons And stars, supporting beasts, motto
- I didn't notice any colour rules
- I was surprised at the colours
- Argent is 'silver'
- Family symbols are in the middle and the status things around them

Visitor autonomy and freedom of choice (21 comments)

- It would be better with more choices/options (8 visitors)
- Why do you have to choose an ordinary?
- What if I don't want to choose an ordinary?
- Visitor wanted to be able to choose a different ordinary.
- Do I have to have that ordinary?
- I would like more choice of sub-ordinaries.
- You are forced to choose.
- I would like more choice than a baron or a king.
- Visitor wanted more control over placing things.
- Visitor spent a lot of time trying to replicate his own coat of arms.
- Visitor expected more control over designing the coat of arms.
- Visitor wanted to leave two quarters white but couldn't.
- You did not make it clear that the queen option would finish the programme.

- There is a fair amount of choice.

Mottoes (19 comments)
- Translate the mottoes (16 visitors)
- Could you add more mottoes?
- Could you type in your own motto?
- Visitor appeared confused by motto

Lack of understanding of symbolism/significance of choices (11 visitors)
- Explain the colours and symbols (2 visitors)
- It's very annoying - it doesn't tell you what the heraldic description means (2).
- I would like to know the significance of the choices.
- I would like to know why the choices/elements are those? What do they represent?
- You could explain the symbols.
- The heraldic terms should be explained at the beginning of the programme.
- What is an ordinary?
- I would like an explanation of the symbolism of colours, horses and unicorns.
- On the divided shield - put captions on the choices.

Comments and observations about naming a coat of arms (8 visitors)
- I noticed the commentary changing but did not read it as I wanted to concentrate on the design (2 visitors)
- Visitor did not notice the heraldic description (2)
- I can only remember a general heraldic description.
- Visitor did not notice the description of technical terms at first.
- I did not understand the technical terms so I stopped reading them.
- Visitor did not find the technical terms prominent and could not remember what they referred to.

Coat of arms as a topic (7 comments)
- Relate the programme to how shields were made.
- The programme would help someone researching a coat of arms.
- Very educational - provides insights.
- A month with this and I could become a professional designer of coats of arms.
- If it was just for children you could have lots of modern elements for the ordinaries - Mickey Mouse and fairy tales.
- Visitor showed interest in the process of creating a coat of arms.
- It's a way of becoming aware of different types of coats of arms.

General

Approval (25 comments)
- Great fun (7 visitors)
- Interesting (7)
- Enjoyable (2)
- Relaxing
- Great to do
- I could play for hours
- The best kind of entertainment
- I would have several goes
- It's just long enough to hold your attention
- There should be more activities like this in the museum
- It will stop children becoming bored - they can look for shields

- Lovely for children

Other (2 comments)
- Animation is good.
- A very clever programme.
- Some language would not be easy for foreigners
- The last three steps make it come alive

Technical

- BUG: Visitor touched the row of icons and a blue box appeared and stayed there.

Quotes from Staff and Observation Notes

Usability

Navigation
- Navigation is easy.
- I felt I was not clearly guided along the path.
- It's fairly clear navigation but the selection is not clear.
- Sometimes staff member was not sure when she had to go to next screen.

Colour
- Staff member did not know what to do to select her choice of colour.

Use of Icons/buttons
- I was surprised when I selected 'queen' and the diamond disappeared.
- Staff member did not know which button to press for option choice.
- Staff member was confused over whether to press the shield to divide it.

Home page
- The list of stages at the beginning is confusing.

Touch screen
- Touch screen does not work well - discouraging (2 staff).

Speed
- It's too slow (2 staff).

Content

'Can you tell me about any of the elements which make up a coat of arms?'
Two staff members said that they knew the heraldic terms already but did not provide any terms. The following responses are from the three remaining staff:
- chevrons (2)
- colours
- ordinary
- sub-ordinary
- 'azure' is blue

- ‘mullets’ are stars
- gules
- I can recognise the coat of arms of a queen.

Autonomy and freedom of Choice (2 comments)
- Staff member did not wish to add an ordinary but had to do so.
- Staff member would like more colours from which to choose.

Lack of understanding of symbolism/significance of choice (8 comments)
- Give an explanation of the symbolism. (3)
- There could be more information to help you in decisions. For example, I chose colours because they looked nice.
- It’s not really educational (? without explanations?).
- The heraldic description is useless.
- I’m not sure why the choices for adding an ordinary were made since no information was provided.
- Why does it change shape when you select ‘woman’?

Mottoes
- Give an English translation of the mottoes (3 staff).

General

- Very good / fun (2)
- The finished design and the animation in between are quite stunning.
- Nice and colourful.
- I like the way colours are added.