21 THE COMMONWEALTH INFORMATION DATABASE

A Case Study - Multimedia on a Shoestring

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The Commonwealth Institute

The Commonwealth Institute is by no means a typical museum. The Institute, housed in its impressive Grade II-listed copper-roofed building in Holland Park, London, is an independent body, established by parliamentary statute and substantially funded by the British government. It represents a continued commitment to the Commonwealth and all other Commonwealth governments, these being represented on the Institute's Board of Governors.

Fig. 1 The Commonwealth Institute
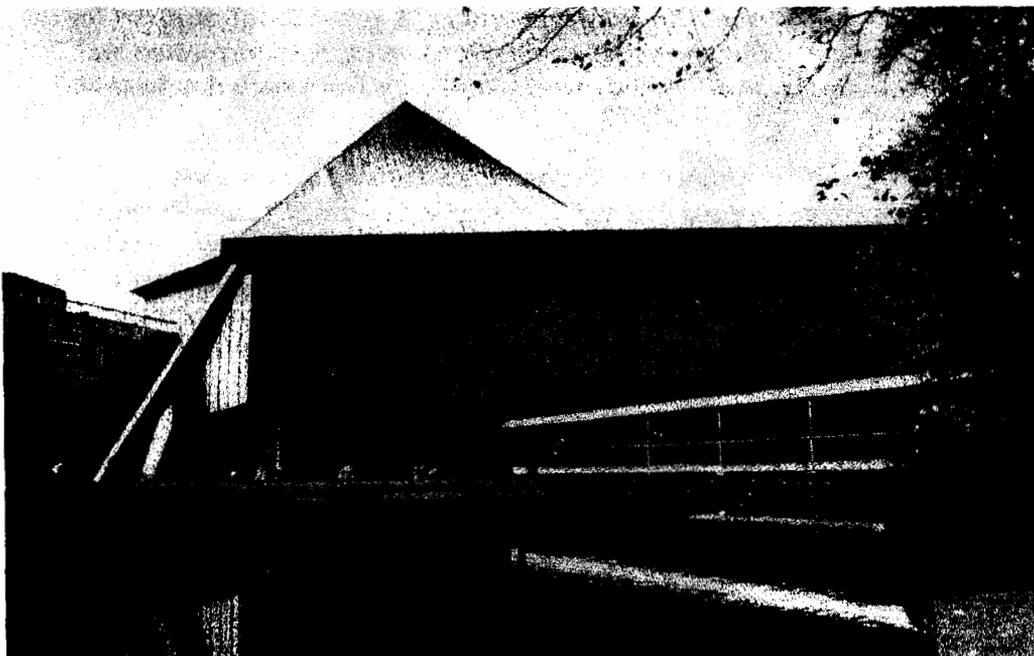
The mission of the Institute is to promote knowledge of and understanding for the Commonwealth, the fifty countries which make up the association and the principles for which it stands. The Institute takes this message to over 300,000 children who visit the Institute's Exhibition Galleries in support of their class work each year.

We differ from most museums in that we have no formal remit to collect, preserve or provide an academic or research context for artefacts from past or present. However, we do share a reliance with traditional museums on exhibitions as our main on-site public medium. The Institute's permanent Exhibition Galleries contain exhibitions on the Commonwealth countries, a number of regional and thematic exhibitions, a full temporary exhibition programme focusing on arts and development issues, animated by a rich calendar of music, dance, festivals and events involving artists and teachers from the Commonwealth itself. The fundamental educational activity on the Kensington site is further developed through a nationwide extra-mural programme in schools and the community, through a Northern Regional Centre based in Bradford and through an extensive educational resource infrastructure. The resource support base for the Institute's programme includes a semi-commercial photograph library and a resource centre.

Commonwealth Information Database (CID) origins and aims

Within this context, the Commonwealth Information Database (CID) had its origins in the need to provide visitors with reliable, up-to-date information on each of the fifty Commonwealth countries. Much of the information with which we deal is highly volatile, with many countries, particularly in the developing world, displaying rapidly changing economic, political and social profiles. It can often seem that Heads of State and Government come and go remarkably quickly.

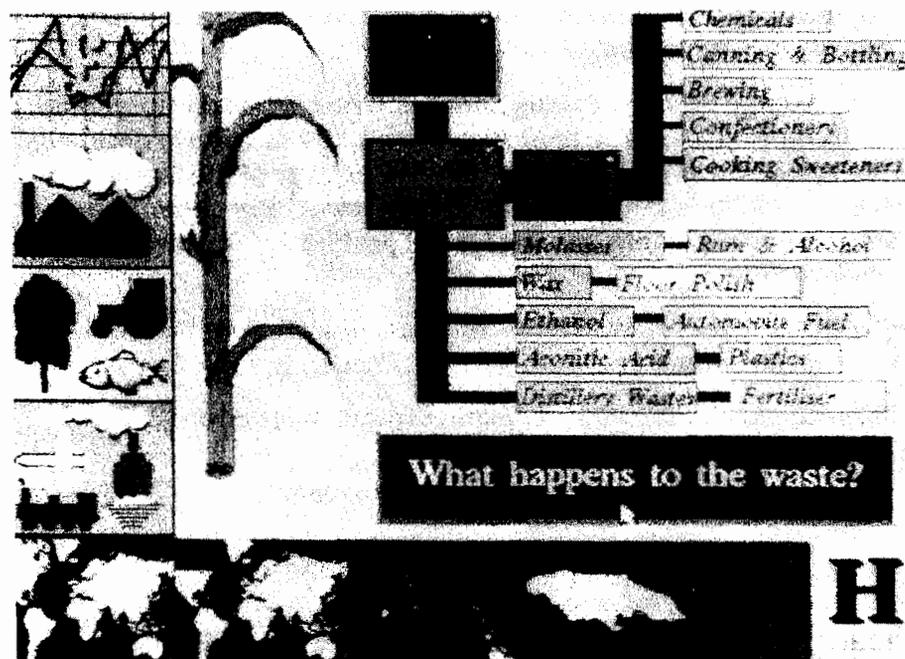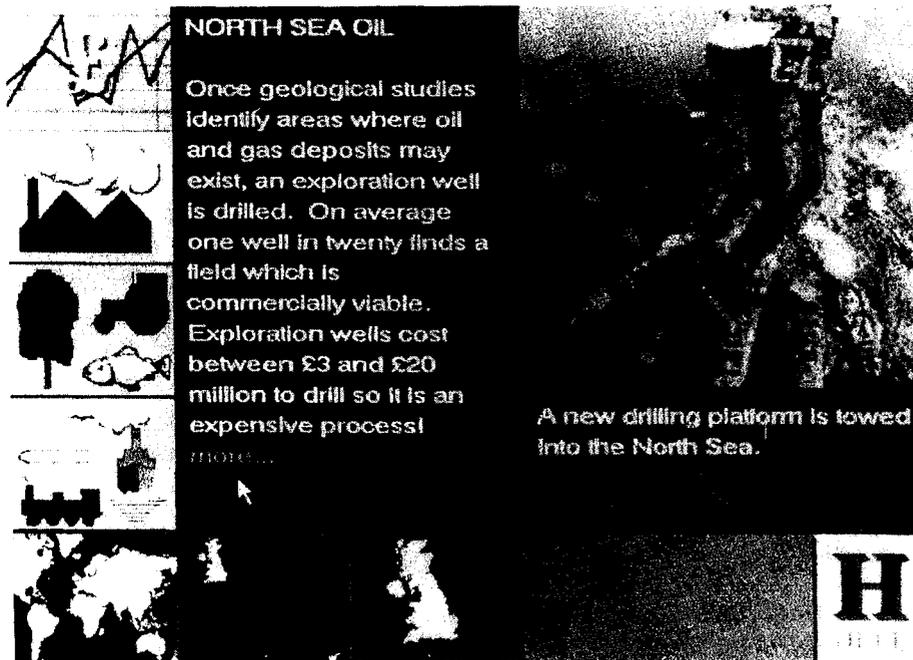**Fig. 2** Sugar cane production in Jamaica

Fig. 3 North Sea oil production in Britain

NORTH SEA OIL

Once geological studies identify areas where oil and gas deposits may exist, an exploration well is drilled. On average one well in twenty finds a field which is commercially viable. Exploration wells cost between £3 and £20 million to drill so it is an expensive process!
more...

A new drilling platform is towed into the North Sea.

To maintain the Institute's position as the authoritative source of Commonwealth information, we need to respond to the speed of information change more effectively and less expensively than we are able to do with traditional graphic panel and publishing techniques.

Although the project began with the idea of placing that volatile information within a text-based computer system for easy public access and rapid updating, the project team quickly realised that far more was possible given the new technology than simply reflecting changing facts and statistics, and that we could take the provision of information into the sphere of enquiry learning and interaction.

With little experience or knowledge of the technology, the team had few preconceptions about multimedia and this has proved to be an enormous advantage, in that we decided to let our exhibitions, design and education experience and knowledge of the target user drive the project's development. With this approach we have avoided any dependence on expensive multimedia experts or consultants, and the typical problem of working to the limitations of particular software.

The original project brief, reflecting the interests of exhibitions, education and information staff contained the following prime objectives:

- to provide an interactive, educational, information resource for public use within the Exhibition Galleries.
- to target school resource needs within the context of the National Curriculum.
- to provide an educational resource for future publication and distribution beyond the Kensington site.
- to create opportunities for partnership with relevant organisations in pursuit of the overall aims of the Institute.

Development of a prototype

It was decided at the outset that the project could not be funded from existing Institute funds and that development costs would have to be met long-term by sponsorship from outside the Institute.

CID was envisaged as an exhibition on-screen with children between the ages of 10 and 14 as the main target audience. The proposal called for varied forms of information material, including text, photographs, moving film and sound, making considerable demands on the capacity of the software. The Institute was fortunate in being introduced to System Simulation Ltd, a software company with a background in educational simulation and gaming, who were invited to become partners in the project. The fledgling database was thus based on Systems Simulation's proprietary free text database software, "Index+". As well as providing fast access to large volumes of text, Index+ links to other databases containing, for our purposes, graphics and photographs, as well as to videodisc, tape and CD-ROM, providing the basis for a true multimedia information system.

Our partnership with System Simulation allowed us the additional freedom to tailor the software to our specific needs rather than work within pre-defined parameters of 'off-the-shelf' software.

The hardware requirements were based on the open systems philosophy, thus ensuring that future development was not restricted to any one format. The project team examined a number of hardware manufacturers, finally deciding to build a relationship with ICL, with their prominent profile in the educational market. ICL supplied the Institute with a PC to be the development machine to run the eventual first prototype.

Prototyping is a valuable and vital first exercise for any multimedia project. A prototype can engage the attention of management and potential sponsors in a way that no amount of sketched ideas and arm waving ever can. Thus the first stage of the project was to create a working illustration of the true potential of a Commonwealth Institute multimedia database.

The creation of the prototype in 1990, covering five countries, was very much an exercise in begging and borrowing, with the Institute's own considerable resources providing the basis for content. Much of the text content relied on existing printed information leaflets produced by the Institute. The National Interactive Video Centre kindly loaned a videodisc originally developed to support the geography curriculum, which contained a number of useful video passages.

Many projects encounter problems when faced with the prospect of image generation. The creation of CID's image bank was a typical example of low-cost development in action, as colour slides from COMPIX, the Institute's photograph library, were captured using a video processor, digitised and stored as PCX files on the PC. Obviously, this is a fairly low quality of captured image; however, it has never been the intention to exploit these images beyond the Exhibition Galleries or CD-ROM, thus quality was tailored to need.

This is consistent with the overall approach to the database's development and design. The aim of CID has never been to trumpet the use and achievement of technology; from the start, development was driven by the perceived needs of the user and our intentions for information provision, rather than the priorities of hardware and software designers. We set out to design a system which did not require complicated menus or instructions, that did not even demand an affinity with computers, that would be as natural to use as turning a page. This dictated that the user would be guided through the system using non-textual prompts and symbols wherever possible. Thus a combination of maps and icons were designed to be the user's guide. The maps form instructive paths to each of the

fifty countries. The icons represent subject material which is then presented as interactive text, photographs, animations and other graphics. The material is divided into four main headings - politics, economics, land and people - all of which are then sub-divided by other icons representing subjects specific to that main heading.

In keeping with our approach to image generation was the creation of the database's visual identity and format. All graphics and animations were created using a fairly low-end paint program, PC Paintbrush. The results prove that the cheap option does not necessarily produce cheap-looking results.

The disadvantages of a low project budget become apparent in the case of the database's video content. On the original 1990 prototype, the loaned videodisc provided us with sufficient passages for five countries. On embarking on the second prototype of 1991, to contain the full complement of fifty countries, it became rapidly obvious that generating video images for all the countries was far too costly an option to contemplate at that stage. With plans to publish the finished database on CD-ROM in place, it was decided to limit the database to photographs, graphics, animations and text. We hope to develop this option on the next generation of CID systems.

CID received funding from National Council for Educational Technology (NCET) in 1992, becoming one of its development projects for the CD-ROM in Schools programme, intended to provide high quality educational products for use in the National Curriculum. In that context, the database was thoroughly tested by its target audience, in four schools over the Autumn Term 92, and in the Institute's Exhibition Galleries. This will ensure that the database is an effective educational resource and has informed development to the present final version.

Fig. 4   Flora and fauna of Botswana
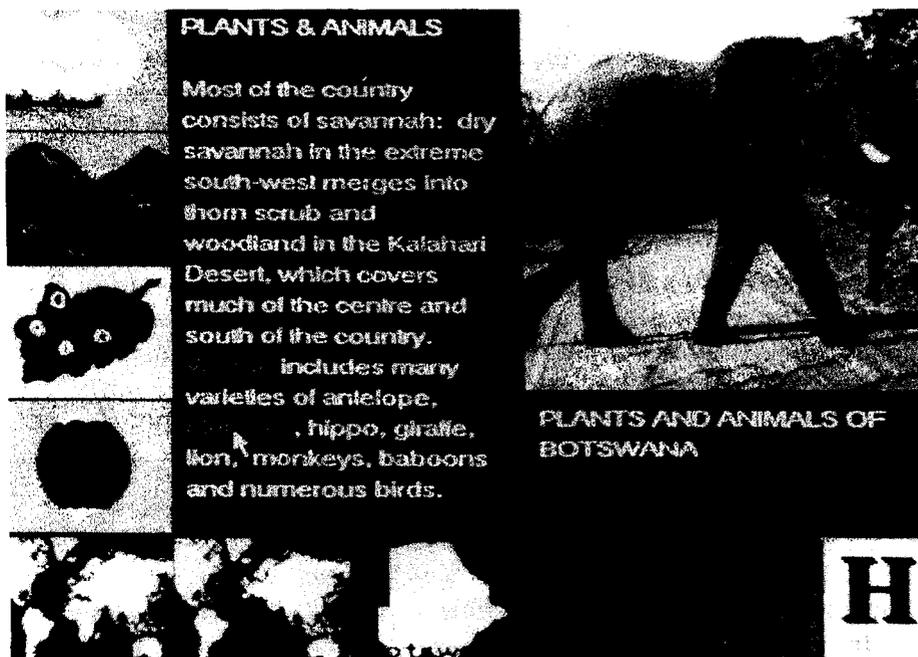
From its conception in 1989, the first prototype in 1990, the second in 1991, to the present version; CID has become a considerably powerful database containing nearly 4,000 text sections and over 4,500 images and graphics. During that time CID has cost the Institute approximately £10,000. This does not include staff costs of course, nor the staff costs of System Simulation, who have operated largely on goodwill and imagination. In addition, though most multimedia projects rely on a dedicated project team, containing researchers, designers, programmers and authors, the Institute team has numbered two throughout; a limitation perhaps, but proof that these things are possible.

By the time of ICHIM '93, CID should have been published on CD-ROM for marketing within the educational sector. It has also been installed as a permanent feature of the Institute's Exhibition Galleries ever since the prototype of 1991. There are now three CID workstations in operation and almost permanently in use by visitors.

Plans for the future include the issue of a series of CID discs on specific themes such as wildlife, industry, art and music, and the introduction of a network of CID workstations to run these databases at the Institute. Inevitably, these plans all depend on obtaining future sponsorship.

As the Commonwealth Information Database hopefully proves, it is possible to develop such a project on a severely limited budget and bring it to fruition, given a determined and dedicated staff, interest from outside partners and a good idea. However, in common with projects on much larger budgets, the idea must be sound, have a grounding in reality, and most importantly, have the target audience in view at all times. Everybody has seen examples of applications that look great, do wonderful things, but tell you nothing and have no market.

The CID system as built remains true to the original principle of making information held by the Institute or readily available to it by virtue of its international connections, more accessible to our visitors.