DE DIGITALE STAD

Introduction

On January 15th, 1994, the Digital City opened its gates. Our aims included making a broader public aware of the still relatively unknown Internet and to inform people about the new possibilities that the medium could offer. The Digital City also wanted to contribute to the social debate about the 'electronic highway'. On January 15th, 1996, this '10 week experiment that got out of hand' existed for exactly two years.

Partly because of the turmoil that DDS managed to cause, the development of the Internet in the Netherlands has been achieved at an accelerated pace. Access to the Internet - at local phone rates - is now obtainable all over the country. A large number of individuals, organisations and government services have come on-line. In a short space of time, numerous businesses of all sizes have launched themselves onto the electronic highway. This booklet is intended for Ars Electronica. It describes the development, complexity and multiformity of the Digital City.

DE DIGITALE STAD
AMSTERDAM

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X X X

BEZOEK DE STAD ALS
TOURIST

BEZOEK DE STAD ALS
BEWONER

| LAATSTE NIEUWS | IBM PLEIN | ENG LISH | A-Z INDEX | CJP café | Sun | Energie Noord West |

HISTORY

The Digital City began on January 15th, 1994. Initially meant as a 10-week experiment, it grew out of a collaboration between the Amsterdam political and cultural centre, De Balie, and XS4ALL, a group of computer activists.

Because of the success of the first weeks, thought was given to the possibilities of turning the temporary project into a permanent facility. In mid-1994 the basis was established for a permanent structure, which included making the Digital City an independent foundation.

Financial support for the start-up and development was obtained from the municipality of Amsterdam and the Ministries of Economic Affairs and Home Affairs.

Since January 1995, the Digital City has been completely self-financing and no longer receives subsidy. Through supplying professional services to various clients, innovation and free services for the community are financed .

AIMS

The Digital City is a non-profit organisation with a number of social aims.

Democratic processes.

The Digital City strives for a well-balanced electronic community. The electronic highway is a new communications channel with important social, economic and cultural aspects. It is of vital importance that everyone who wishes to, can take part fully in this electronic society. The Digital City is determined to contribute to the development of this new public domain.

Knowledge processes.

The Digital City sees itself as a platform for experiments aimed at exploring both the possibilities as well as the impossibilities of the Internet. It aims to contribute to the development and dissemination of knowledge by playing its part in innovation and the improvement of all manner of applications. This mostly takes place in consultation with providers of information and users. By means of Information disseminated in a 'digital cities handbook', a conference and a permanent on-line meeting place for builders of digital cities, DDS

has contributed to the emergence of new initiatives.

Economic processes.

Dutch society is increasingly having to look for new economic possibilities, new opportunities and new services. The electronic highway offers just such possibilities. The Digital City wishes to make a modest contribution to this process of renewal.

INTERFACE: THE DIGITAL CITY 3.0

When DDS began, we deliberately chose the metaphor of a city since this seemed well-suited for presenting the technical possibilities of the Internet in a coherent manner, at the same time as offering the possibility of designating and exploring the social and political aspects of the electronic highway as a public domain. The city is the place where you find the freedom to express yourself and to communicate, freedom of opinion, freedom of association, etc.

The city metaphor is abstract and not bound to a place. On an organisational level, however, the project is rooted in the local community. This allows it to take advantage of local enthusiasms, to provide support, to offer low-cost access and to maintain contacts with the local public.

The city's interface has undergone considerable changes:
- DDS 1.0: All information and communication offered in the form of a text-based environment.
- DDS 2.0: October 1994; entry to the World Wide Web.
- DDS 3.0: inauguration of the present interface.

With the new 3.0 interface, the provision of communication and information is integrated. The emergence of the Digital City 3.0 represents a synergy of design, software development and interaction design.

Structure of the city

In order to remain within the city metaphor, 'squares' were introduced in DDS 3.0. These now constitute the basic framework of the city's structure. Each square has its own theme and character, and serves as a meeting place for people interested in that particular theme. They can find information there and exchange ideas with each other.

The city has four directions: north, south, east and west. There are various ways in which you can travel through the Digital City:

DDS

PERSOONLIJK

POST

WIE ZIJN HIER

A - Z
INDEX

A
Z
PLEINEN A TOT Z

UIT

PLATTE GROND

D	N	P	X

zijwegen

zijwegen

zijwegen

zijwegen

DDS

IBM

@

13

Rabobank

DDS

PERSOONLIJK

POST

WIE ZIJN HIER

A - Z
INDEX

PLATTEGROND

Associative strolling

Each square borders on four others. The corners provide access to adjacent squares. This way of travelling corresponds to the way one wanders around real cities. Travelling is associative and open to all sorts of surprises.

City plan

While standing on a square, but also at numerous other places in the city, one can always consult the city plan. This plan enables you to jump quickly to another location without having to traverse the whole route in between.

The alphabetical index

of all information providers, advertisers and residents of the Digital City also offers a speedy way of finding information.

Search engine

Each square has a function bar that includes a sophisticated search engine allowing information to be searched by key-words and to go there directly.

Every square has a fixed number of possibilities:

Buildings on a square.

Each square offers space for eight buildings that can be rented by information providers. A building may contain information from businesses, non-profit organisations or a group of organisations.

Billboard, or 'Webvertisement'.

On each square one always comes across a billboard, a so-called Webvertisement which usually contains a company's logo. Clicking on this brings you to that company's information pages.

Cafes.

Each square has its own cafe where, within a WWW environment, visitors may engage in real-time chat about the themes related to the square. Guest speakers from other parts of the world can also be invited.

Kiosk.

In the kiosk visitors can find magazines and books rela-

ting to the square's theme that have been published on the Internet. DDS is responsible for the selection of material in the kiosk.

Side-roads

This option offers links to other web-pages on the Internet, which, in the opinion of Digital City residents or the Digital City Foundation itself, are deemed of special interest.

Discussion

The option 'discussion' offers the visitor a choice of discussion groups related to the square's theme. New discussions can be initiated by residents, but one can also contribute to existing discussions.

Other functions:

Notices and announcements

While in the World Wide Web environment, a resident of the Digital City can see whether there is mail, that someone wants to chat or that the dikes have just broken.

Personal

A resident of the Digital City can amend his or her registration data, temporarily assume another identity (such as a fantasy identity), indicate whether he or she is available for talk or not, or select a favourite square as a point of entry into the city.
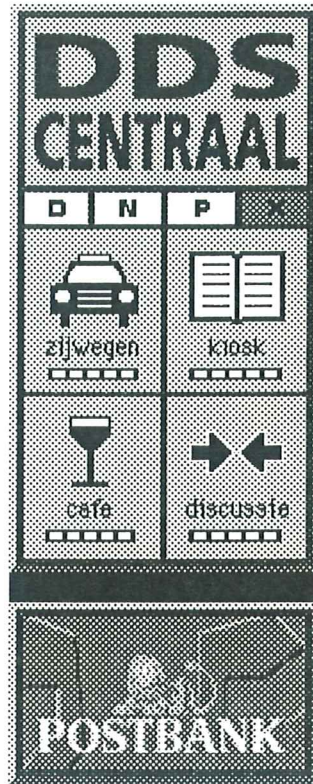
Mail

The 'Mail' option allows residents to check their mail box at any time, and to send and receive e-mail worldwide and at no cost.

Who's here

As long as they are using the WWW interface, people are visibly 'present' in the Digital City. The option 'who's here' shows which residents are present at the same location or elsewhere in the city.

DDS

PERSOONLIJK

POST

WIE ZIJN HIER

A - Z
INDEX

PLATTEGROND

I-Ivo'78

Dutch Dominican Page

Alta Vista

C

abriela' Gap

Huize Feer

TFD

SD TEST PAGE

kadir

G

HUIZEN WIJK

D N P X

spelregels

bouwen

cafe

discussie

Residents of the Digital City

Anyone can visit the city as a 'tourist', but it is also possible to become a 'resident'. To do this, you have to apply by filling in an electronic form on the central square of the Digital City. No costs are involved. It
takes 48 hours at the most before your application has been processed. Users who are also residents can avail themselves of numerous extra possibilities such as:

- free worldwide sending and receiving of e-mail
- participation in discussion groups
- chatting in cafes
- building one's own home
- taking part in the 'metro'
- voting when the occasion calls for it, etc., etc.

Homes

An important part of the social philosophy of the DDS is that people on the electronic highway are not only 'consumers' (of information), but also fully fledged citizens who can interact with each other and who also should be able to offer information themselves. In this respect, residents have the possibility to build their own home and to place

number of users
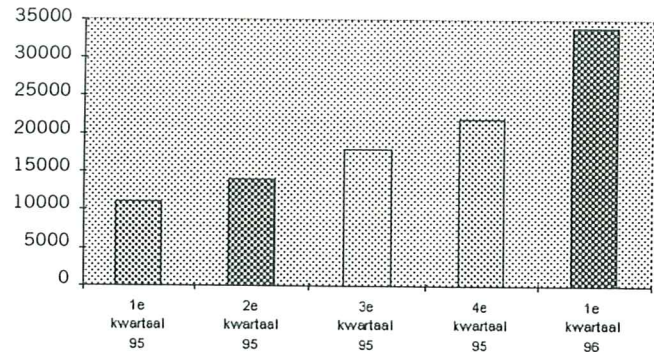
information pages within it. Setting up a home is free of charge but subjected to a number of 'rules of the game'; a home may not be used, for example, for disseminating commercial information. The 'residential areas' are situated between each of the squares on the map.

Participation of residents

As part of an experiment with electronic democracy, residents are involved in finding solutions to one of the most pressing problems in the digital city - a housing shortage. After a period of discussion that digital resulted in a number of prac-

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tical solutions, some of the more basic choices were set down in various options that could be voted on over a period of some weeks. The chosen solutions were implemented by DDS. An administrative procedure and a technical mechanism have been introduced, whereby homes that have not been maintained for three months can be squatted.

Metro.

One of the oldest parts of the Digital City is the Metro, a text-oriented virtual world comprising thousands of spaces, objects, events, etc. Visitors can wander round the Metro, talk to other visitors, do things, or even construct new spaces and objects. The Metro remains one of the most popular parts of the Digital City, and has evolved into a genuine community in which some of its residents are even virtually married to each other.

Communities

The Digital City is a community of residents, or rather, a community consisting of numerous small and larger groups of inhabitants. These communities group themselves around certain applications, functions and themes. There are communities centred on, for example:

- The Bicycle Path
- The Cafe on the central square
- The Chess Cafe
- Metro
- Discussion groups
- The sport square
- The homo square
- The art cinema

News service and feedback

Residents also have a need for a good news service. In the beginning this was underestimated. The provision of information to residents has been crucially improved in the course of 1995. Among other steps that have been undertaken are the following:

- The appointment of a 'host'.
- Publication of information about the commercial aspects of the Digital City.
- The maintenance of a 'latest news' page, updated daily.

The Digital City offers a discussion group for talking about the city. A new means of communication, 'hypernews', has been introduced at a number of places so as to allow for feedback.

FACTS ABOUT THE DIGITAL CITY

By March 1995 the number of residents has risen to 33,000. The city is growing at a rate of around 160 residents each day. In February 1996, 4639 people registered as new residents, and in March 1996, 5022 people. The city receives 15,000 visitors a day.

Homes in DDS

There are around 2,600 residents who have built a free home and offer information. The homes generate about 50% of all data traffic. 1,200 entrances to these homepages are available through the graphic interface.

Metro

In the Metro - the Digital City's play environment - there are 2,040 'players' and 830 'builders' who have constructed more than 14,000 'objects'. Use is fairly stable.

E-mail

E-mail on a random day in October 1995: 7,564 messages received by DDS residents (234,484 per month). 8,731 messages sent by DDS residents to other systems (270,661 per month).

Cafes

The cafe on the central square is the most popular cafe; often there are dozens of people there at once. Meetings of frequent cafe visitors also take place in real life.

Data traffic

Through increasing use and the added possibility for residents to build 'homes', the DDS's data traffic has increased exponentially. The total amount of data traffic in March 1996 was 40 Gigabytes.

SERVICES: GOVERNMENT

Local government

In 1994, DDS received subsidy from the Municipality of Amsterdam. Part of this was used for making a number of municipal information sources publicly accessible. From January 1995, the municipality pays as a client for the services taken over by DDS. Municipal databases containing administrative and public information are converted by DDS so that they can be accessed via a world wide web interface. Various discussions about policy issues are organised in the Digital City.

DDS
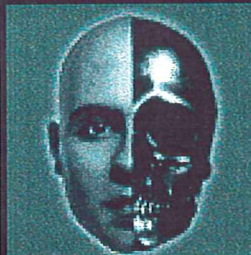
VERHUURD
LEEG

OPEN SPACE

Droom
Theater

de Verloren Zaak

LEEG

LEEG

Overledenen
herinnerd

Uitvaart en rouw

HET
NEDERLANDS
GEDENKBOEK

VERZAMEL
GEBOUW

| D | N | P | X |

huren

bouwen

UW LOGO?
klik hier voor
meer informatie

National government

The Digital City hopes to make as much government information accessible as possible. In 1995, DDS took care of chairing and supplying technical facilities for an on-line discussion with the Ministry of Home Affairs. The Digital City helped to develop scripts enabling the Parliamentary Documentation Centre to offer information from the Upper and Lower Chamber via the 'Parliament Window'. The same technical facilities are used by the tax office for helping people fill out tax forms.

European government

Commissioned by the Dutch Office of the European Commission, the Digital City has built a Europe Square, which opened on April 1st 1996. Various organisations will occupy a place on the square. Under the auspices of the Dutch European movement, a discussion is being conducted with politicians about European Monetary Union. This may also serve as a step towards the Eurotop which will take place in Amsterdam in 1997.

SERVICES: SOCIAL/CULTURAL SECTOR

Various social and cultural organisations and initiatives have a place in the Digital City. DDS also helps to make initiatives possible.
A few examples of noteworthy initiatives and projects:
- During the 'Next 5 Minutes' international conference, DDS played an active role in the production of an electronic newspaper about the conference.
- For the 'Doors of Perception 1996' conference, DDS constructed a 'shared workspace' where participants from all over the world could work together in groups before, during and after the conference.
- Dream Theatre is an initiative of a few Digital City residents. Visitors send in their dreams which are then explained.
- The cemetery (on-line soon) offers the possibility to commemorate loved ones.
- CJP is the largest youth organisation in the Netherlands. The CJP site is accessible to all, but the Digital City has also built a building which is only accessible to members.
- Technika 10 Amsterdam organises technical courses for

girls aged 10-13. These courses are given in schools and community centres by women who have been trained by Technika 10. The Girls Internet Club largely takes place around the Digital City with excursions to the rest of the Internet. DDS employees have supported the project.

- The alternative local radio station 'ONLM' broadcasts daily news bulletins. Forty volunteers are responsible for the content of the broadcasts. The bulletins can be consulted every day on-line, while news can also be reported via DDS. ONLM recently won a media prize for this project.
- DDS has written a programme that makes an on-line database containing theatre and concert information from 800 venues throughout the Netherlands available to the public via Internet.
- Students from the film academy maintain their own 'cinema' in DDS, which includes reviews of films.
- The home of 'Kidon' receives visitors from all over the world. This young resident of the DDS delivers newspapers in everyday life and devotes his free time to making the most complete web site about media on the Internet. Newspapers, radio and TV stations from all over the world can be found via his home page. Because of its enormous international popularity, the home is supported by DDS with extra facilities.
- A growing group of volunteers are working on a literature site where all Dutch-language literature on which there is no longer a copyright is made electronically available. The project, comparable with Project Gutenberg, is named after L. Jz. Coster, one of the inventors of printing.
- On the Digital City's 'bicycle path' we find news from bicycle fanatics among the city residents. Travel stories, tips, contests, etc. are sent in and discussed.
- DDS has its own chess server. During (international) contests, the chess cafe is visited by dozens of people at once.

SERVICES: BUSINESS

The introduction of commerce in the Digital City has not been experienced negatively by residents. After all, shops belong in a city. The Digital City offers small and medium-sized companies the possibility to experiment and to gain

experience with new technologies without having to make large investments. The Digital City provides a platform for them to explore and develop new markets.

- travel agents
- publishers and book shops
- legal aid and digital lawyers
- computer companies
- billboards advertising banks
- Amsterdam and district health insurance

can all be found in the Digital City

SERVICES: EDUCATION

The Ministry of Education has commissioned DDS to develop a 'BVE education square' accessible to all institutions, teachers and students involved in the sector of professional and adult education (BVE). This makes them a special community in the Digital City since they are looking at the possibilities of the Internet from the viewpoint of their daily educational activities.

Around BVEnet various sub-projects are taking place that DDS is also partly involved with, such as the construction of a 'Question-net', an educational database with questions and answers enabling teachers to devise assignments making use of each other's work.

Besides providing services to major educational institutions, DDS also offers free space for home pages to numerous small educational initiatives, study groups and pupils.

TECHNOLOGY

Dial-up lines

The Digital City regards it as important that everyone can make use of the services and possibilities of the electronic information infrastructure. To this end, 40 free dial-up lines are available, that provide people with access at no extra cost other than the telephone calls they make. Support is available through a help desk. Around 20% of the Digital City users employ this free number; 80% enter via the Internet and thus have access via a provider, or through their place of work or education.

Machines

The city began with one machine (1994), consisted of 3

machines in 1995 and has since grown to 6 machines in 1996, including two very powerful servers. Particularly through the combination of functions, the city is technologically very complex. In order to spread the load, different functions of the city exist on different machines. Not all of these are in the same building, but are at different locations connected to each other through a 2 Mb link. Services for clients are physically located on the city's own server (SUN Sparc 1000). A second web-server (SUN Ultra Sparc 170) has been acquired for the community of residents. This is linked, in the same way as the professional services server, to the Surfnet and Nlnet backbone through a 10 Mb/sec. line.

Services

In addition to an inexpensive basic package with disk space and data traffic, the Digital City offers numerous supplementary services. Its own voting system has been built, the English-language 'hypernews' has been translated and adapted, the mail programme 'pine' has been translated into Dutch by DDS, a shared workspace programme has been developed and DDS offers its own web editor enabling www pages to be made and changed without leaving the world wide web. DDS also offers possibilities such as Real Audio.
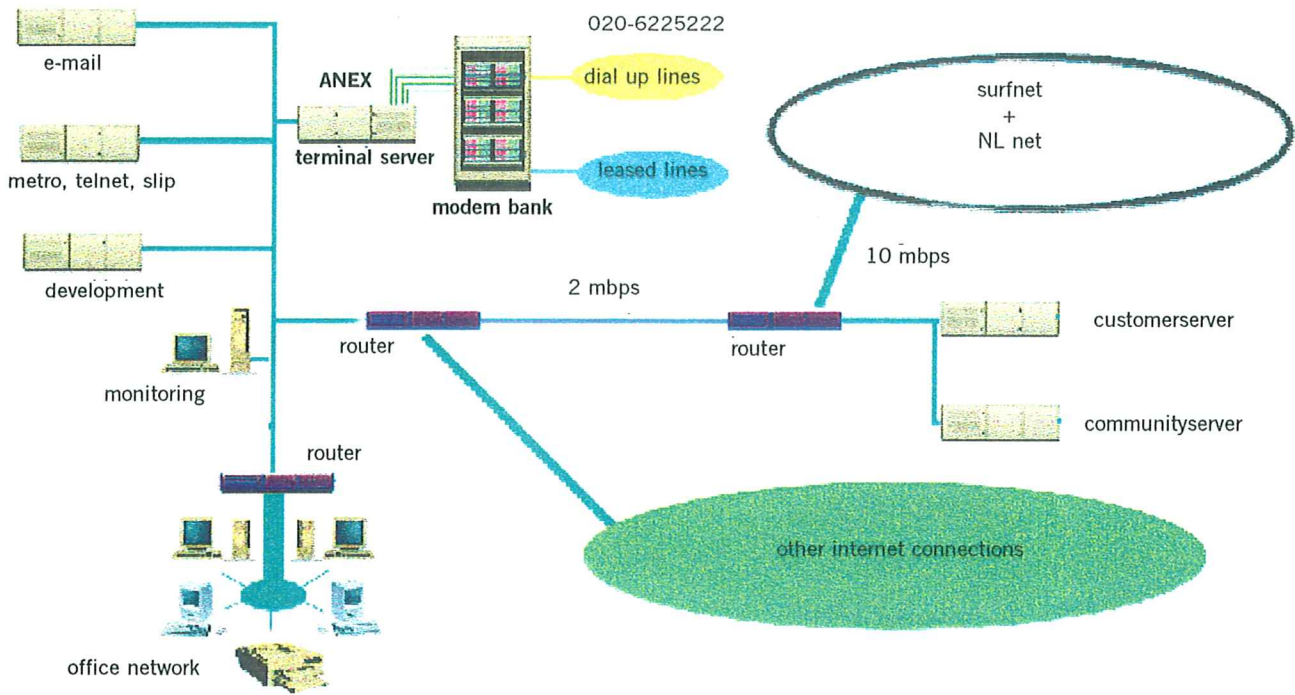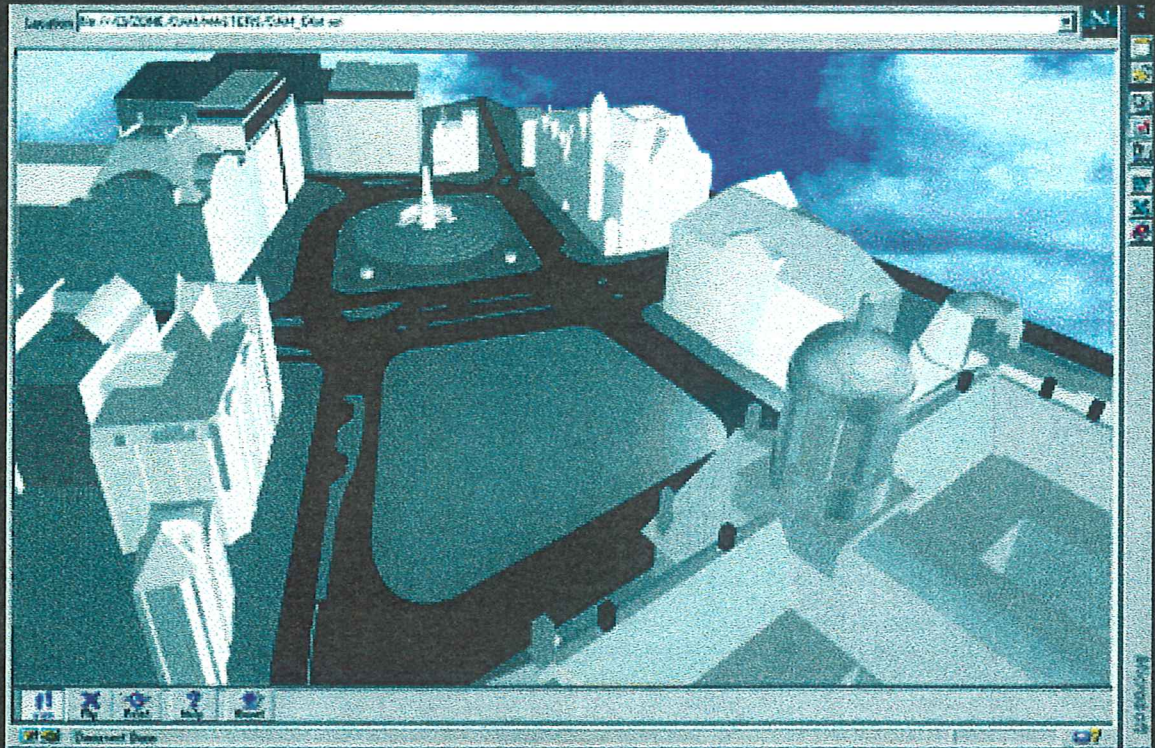
The aim is to provide clients with high-quality services (good connections, high performance hardware, service), as well as to make the new facilities that have been developed available as quickly as possible for Digital City residents as free services.

DDS is one of the few systems that continues to provide a textual interface as well as a graphic interface. This is important for people with less advanced computers, but is also relevant for visually handicapped people, for instance. The Lynx text browser has been translated into Dutch.

INNOVATION AND THE FUTURE OF THE DIGITAL CITY

Just like an ordinary city, the Digital City is never finished. Demolition and building work is always going on. In managing and expanding the city it sometimes happens that planning mistakes are made. Things are planned that are then never carried out, or that do not function well. In time this becomes visible and a different direction is embarked upon. Options that are planned but not realised are replaced

e-mail

metro, telnet, slip

development

monitoring

ANEX

terminal server

modem bank

020-6225222

dial up lines

leased lines

surfnet
+
NL net

10 mbps

2 mbps

router

router

customerserver

communityserver

router

office network

other internet connections

by other functions. In addition, the rapid development of the Internet also ensures continual changes in the City. The fact that the City lives is for many people the essence of the city metaphor.

Databases

One of the most important innovations in the Digital City concerns the implementation of a professional database as a totally new technical 'foundation' for the city. The database will underlie numerous applications:

- The users administration
- The self-help system
- Provision of information to users
- English-language information
- The geographical information system
- Search applications in the Digital City
- Improved discussion and communication environments
- Transaction systems
- Statistical analyses
- Client services
- Intelligent agents
- The new Digital City interface (DDS 4.0)

DDS-3D and virtual reality

Another important new project has to do with an experiment with three-dimensional environments. At present, the Internet offers information in two dimensions. There is no doubt that in the next few years we will start witnessing 3D on the Internet. The use of virtual spaces and environments is going to involve specific problems with regard to navigating, presenting information, the spatial linking of information, etc. Social interaction will also be different in 3D environments than in 2D ones.

The Digital City's DAM project is an attempt at experimenting with two of these problems. To begin with, a virtual Dam Square is being simulated using VRML. The virtual DAM is a closed space with a large void in the middle where everyone can place three-dimensional objects. It is a place in which people have to work together since space is limited and because building is subject to certain rules. The idea is to connect several 3D projects with each other and to make space for each other.

Additional projects for the near future:

- DDS would like to improve its international provision of information and to be able to offer the navigation struc-

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ture and help system in English. The question remains as to what extent community services can also be offered internationally. The issue of costs may represent a stumbling-block.

- By means of an questionnaire - under the auspices of a research group in social information science connected to the Faculty of Psychology at the University of Amsterdam - research will be conducted into the current users of the Digital City; who they are and what they do.
- Technological developments like JAVA and VRML have made new ways of navigating possible. This will have consequences for the design of the city's interface.
- In 1996, a number of homes will be able to start offering audio and video. They will also be able to establish their own broadcasting or transmitting station. The idea is to gain experience with technical and social as well as financial aspects.
- Not everyone has a computer at home to gain access to a digital city. In the framework of the Internet World Exhibition, graphic terminals, supplied with broadband connections (ISDN, 128 Kb leased lines), will be placed temporarily in the branches of the public library.

- In the near future it will be technically possible to offer access to Internet and the services of the Digital City by means of cable TV systems.
- A separate machine will be installed in 1996 for the purposes of an experiment with pay services.

LEGAL ISSUES

Users regularly confront the DDS Foundation with legal issues. People transgress rules not only in the ordinary city but on the internet as well, or they behave in an offensive, racist, sexist or insulting manner. The legal issue is whether the Digital City can be held responsible for what people say to each other and for the information they offer in their homes. DDS attempts in any case to guarantee that users are not anonymous (and can thus be held to account in a legal sense for their behaviour). However, this is not simple on a system that is meant to be a free facility. If there are complaints about a user then we check the information supplied by that user (address, telephone number). The Digital City does not, however, take action on the grounds of the specific content of whatever is expressed.

A number of anti-racist organisations, for example, have asked the Digital City to take action against purported racist utterances in discussions. DDS has refused since they regard discussions between residents as a public domain in which people should be able to freely debate with each other. DDS does not consider itself responsible for the content of what people in these environments discuss between themselves. If it is a question of utterances that are against the law, then DDS sees it as the responsibility of the judiciary to take action (or not) against the people who commit such offences. DDS does not regard itself as the publisher of its citizens' utterances and does not venture to make its own interpretation about what is punishable and what is not. The position taken in this affair is more or less one of principle.

Interestingly, in a recent civil case concerning an alleged breach of copyright of Scientology Church documents, the legal judgment made it clear that providers

"in principle do no more than provide the opportunity to make something public and that they can exercise no influence on, or even have knowledge of, that which those who have gained access to the Internet through their agency might disseminate on it. In principle, therefore, there is no reason to hold them responsible for unlawful (...) actions on the part of users."

"Liability could be accepted in a situation in which it is indisputably clear that a publication by a user is illegal and in which it may reasonably be assumed that the access provider is also aware of this."

BUSINESS

The Digital City is also a commercial business, even though it has a non-profit aim. In 1995, the Digital City underwent a crucial period of transformation from a temporary, subsidised project, to a foundation running a business in order to finance its social and innovative goals.

In August 1995, the Digital City moved to an office of its own. A number of substantial, but necessary, investments in equipment and material have been made. By April 1996, the number of employees has increased to 12 people.

It is more difficult to indicate the number of volunteers. The number of people that can participate in the DDS office is limited, but in virtual space hundreds of people are helping to build a piece of the city. To an important degree,

total spending

community services
29 %

professional services
54 %

innovation
17 %
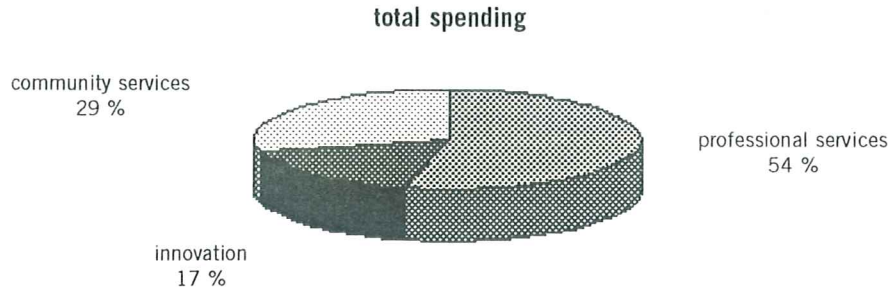
this is an autonomous process and it is difficult to include this under the notion of 'volunteers'.

Staff wages represent the largest item of expenses at DDS. The foundation's first financial year ended with a profit. Loans could be repaid and resources were reserved for possible setbacks in the future and for a number of projects scheduled for 1996.

The question is to what extent community services and innovation can be financed from services to clients. It is interesting in this respect to look at how the foundation's resources have been spent on each of these three sectors.

The future organisation and form of financing will be geared towards a greater separation between the three main activities of the foundation:

customers, innovation and community.

For each segment, we will be looking at how financing can be established and how the organisation can function best. It is conceivable, for example, that the users will assume greater responsibility as regards the organisation of services to the community, while for the strengthening of its innovative function the Digital City might start looking for outside partners.