ENGELHARDT
WALLER
FRASCARA
VAN DER WAARDE
GARRETT
SCHRIVER
ON INFORMATION DESIGN

Petra Černe Oven & Cvetka Požar (eds.)

ON INFORMATION DESIGN

Edited by Petra Černe Oven and Cvetka Požar

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Rob Waller

Transformational Information Design

There is growing recognition that information design makes a vital contribution to modern industrial and digital societies. Good information design helps people cope with the complex decisions they need to make in today's world. Poor information design makes everyday life more difficult, disadvantages those with less education, and can even cause accidents.

In this essay I want to make a case for the importance of information design and raise some issues about the skills information designers need and their role within organizations that produce complex information.

What Is Information Design?

Firstly, what is information design? This may seem a superfluous question in a book about information design, as there will no doubt be other definitions in other chapters, and by now you may have constructed your own. But this is my interpretation.

For me, information design is the application of a design process to the task of informing people. Sometimes the significance of definitions is in what they do *not* say – information design is *not* just what you get when you give a graphic designer some information to arrange. The information (that is, the words, the data, the document) does not exist before the process starts; it emerges during the process, which starts with a need for someone to know something or to explain something.

Communication involves both a communicator and an audience. And there is always an agenda – a purpose or goal that may be different for each side. This is what differentiates information design, in very different ways, from both literature and legislation. Literature is expressive and often celebrates imprecision;

legislation prioritizes accuracy over ease of understanding. But information design needs to be both affective and accurate. It offers to change the state of knowledge in its audience ("offers to", not "seeks to", as the audience has choices about whether to attend to a message, heed it, and remember it).

Because "design" is part of the name, information design is often thought of as a subset of graphic design. But for information designers, it is the other way around. The information design process includes:

- defining objectives;
- defining audiences: their goals, their experience, their abilities;
- structuring communication journeys: routes through complex concepts or communication events within some other process (for example, installing software, applying for social security, choosing a phone, travelling by train);
- writing words;
- drawing diagrams;
- making or selecting pictures;
- arranging information in pages;
- testing designs with audiences;
- specifying and managing systems of information.

Distinct from graphic design, it draws on a wide range of specializations for its knowledge base, tools, and techniques. It is both visual and verbal, and it is concerned with user needs more than artistic expression. Often invisible until something goes wrong, information design is a demanding and difficult field that is underrepresented in education and training.

Why Information Design Matters

Most of us have at some time misunderstood certain information – on a sign, in a document, or on a website. Sometimes it doesn't matter very much – we can correct our mistake. But sometimes it matters quite a lot, resulting in missed flights or broken machines. And sometimes the consequences are disastrous – a drug overdose or an industrial accident.

Let's take just a couple of examples. In elections held in Scotland in 2007, voters were given two ballot papers, one for their local council, the other for the

Scottish Parliament. Each of these two elections used a different, and new, system of proportional representation – in a country where voting had traditionally involved just putting an "X" next to one candidate in a list. Because the ballot papers were poorly designed, around five percent of the votes were wasted. This was greater than the winning margin in some places. In the United States, voting is even more complicated, and there are well-publicized stories of the problems some voters have in registering and in casting multiple votes in each

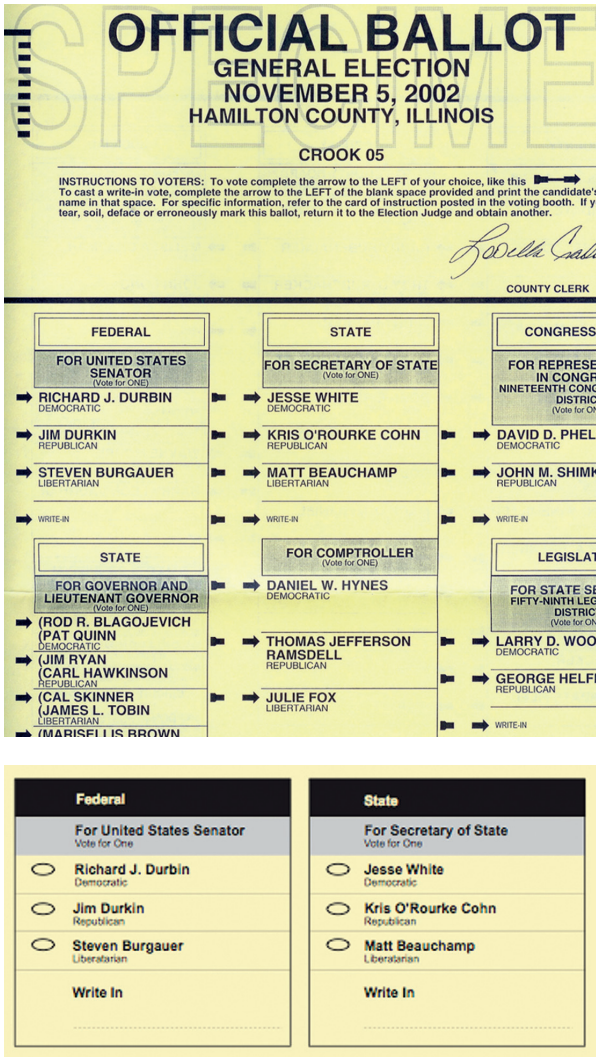


Fig. 1. Above: Here voters were supposed to fill in the middle part of the arrow to the left of their preferred candidate, but many did not understand this or used the arrow on the right.
Below: A better solution that uses AIGA Design for Democracy guidelines.

election. The American Institute for Graphic Arts runs a Design for Democracy programme linked to elections, in which information designers volunteer their time to help states and counties produce more usable ballot papers (fig. 1).[1]

Poor information design can also have more serious consequences. In his foreword to David Berman's book *Do Good: How Designers Can Change the World*,[2] the information designer Erik Spiekermann describes a fire at Düsseldorf airport in 1997, in which sixteen people died because they could not see the small, poorly placed and poorly lit exit signs. And Karel van der Waarde, in his chapter in this book, describes the consequences of poorly designed medicine labels.

Information Design and Literacy

Information design matters in less dramatic ways as well – to help us cope with the complexity of modern life. It has become a cliché to note that we have been suffering from an information explosion over the last few decades. Not so many years ago, we had the choice of a single telephone company and there was only one thing you do with the phone – make a phone call. We bought insurance through an agent who did the work for us. We bought train tickets at the railway station and had a simple choice of travel class. Now, we have numerous phone companies, phones, and tariffs; we go online to buy complex financial products; and, in the UK at least, we are faced with complicated train fares based on time of day, advance purchase, and the flexibility of booking terms.

These choices depend on clear information and the ability to use it. We have all suffered from unclear information, but what may be more surprising is that a significant proportion of the population also lack the reading skills they need. Most developed countries claim a literacy level of close to one hundred percent, but this only means passing the most basic test of reading and writing. Functional literacy is a better measure of how effective those reading skills are. It comprises three parts: *prose literacy* refers to the ability to read linear text; *document literacy* is the ability to solve problems using information in documents; and *quantitative literacy* is the ability to understand simple arithmetic,

1 See the programme's website: http://www.aiga.org/design-for-democracy.

2 Published by New Riders (Berkeley, Calif.) in 2009.

such as percentages. When you extend the concept of literacy in this way, the figures come crashing down.

The International Adult Literacy Survey was conducted in the late 1990s and defines five levels of literacy (level 1 being very basic, with level 5 being the most sophisticated). Level 3 is the critical level, which is defined by the OECD

> as a suitable minimum for coping with everyday life and work in a complex, advanced society. Denotes roughly the skill level required for successful secondary school completion and college entry. It requires the ability to integrate different sources of information and solve more complex problems.[3]

Around fifty percent of the population in countries such as the US and UK are below level 3, and the situation is worse in Slovenia. According to the Slovenian Institute for Adult Education:

> Research results showed that from 65 to more than 70% of adult population in Slovenia do not attain literacy level 3, which is indispensable for equal participation in modern society. According to these outcomes Slovenia was ranked at the tail end of countries under investigation.[4]

Document literacy involves strategic reading. This means reading with a purpose, supported by a monitoring process known as *metacognition*: being aware of whether we understand what we are reading, then re-reading or slowing down if we do not; skimming ahead for an overview; interpreting what we read in the light of our own purpose and what we know of the writer's motives.

Good information design supports and encourages strategic reading, which is easier if, for example, there are clear headings that work together as a set and layouts that show the structure of the content; it is also important that readers' questions and problems are anticipated and dealt with. In fact, given that literacy normally reflects the ability both to read and to write, we might say that organizations who fail to supply well-designed information are themselves illiterate.

3 Organization for Economic Cooperation and Development, *Literacy in the Information Age: Final Report of the International Adult Literacy Survey* (Paris: OECD, 2000), p. xi.

4 Slovenian Institute for Adult Education, *CONFINTEA Mid-term Report: Slovenia.* (Ljubljana: Slovenian Institute for Adult Education, 2003), pp. 32–33.

An Example: Financial Contracts

Financial communications often suffer from poor information design. For example, credit card marketing often combines persuasive messages in large type with contracts in type that is too small to read and written in a language that ordinary people cannot understand. Elizabeth Warren, the head of the Consumer Financial Protection Agency in the USA, was asked whether she was underestimating the intelligence of the American consumer. She replied: "I teach contract law at Harvard Law School, ... but if you put me under oath now, I tell you, I don't know what the effective interest rate will be on my credit card next month because I can't read it in the contract."[5]

Most financial contracts are written in language that is too difficult for the reading ability of ordinary people; these documents can also be extremely long. Warren cites one US credit card agreement with over twenty-nine thousand words. I suggested earlier that graphic design is only one of the skills that information designers need. A financial contract is a good example of this: no matter how legible the font or elegant the layout, it will remain incomprehensible unless a process of deliberate and careful user-centred design is also applied to the words.

Information designers need to challenge everything; they need to take the side of the reader and believe that there is always a better way. This may mean the daunting task of challenging the legal team in a large organization, writing clearer text (or finding a good writer to work with), and negotiating the detail. But it also means working at a structural, or architectural, level to organize the information in a way that matches the needs of the typical user – chunking information under clear headings that match users' questions, or using diagrams when they would be clearer than words alone.

Let's think for a moment about the user's needs with a credit card agreement. Any encounter with information follows a pathway of some kind – this is sometimes called the *user* (or *customer*) *journey*. It can be extremely brief in the case of a simple sign: we notice a sign saying "PUSH" on a door; we push

5 Elizabeth Warren, "Secret History of the Credit Card", interview conducted 20 Sept. 2004, *Frontline*, http://www.pbs.org/wgbh/pages/frontline/shows/credit/interviews/warren.html (accessed 20 Sept. 2011).

the door open; we forget we ever saw the sign or even the door. Or it can last a lifetime in the case of a bank account or pension plan.

The customer journey for a credit card starts with the decision to apply for the card and may one day end with its cancellation. In between there are regular events (receiving bills, paying them) and irregular events (problems, disputes, changes). So information has to support a decision, explain and establish a routine relationship, and also act as a reference source for specific events.

These functions are usually fulfilled by a variety of information sources from inside and outside the credit card company. The decision is supported by marketing material from the credit company and, perhaps, also by comparative reviews in magazines or on websites. The relationship is managed through letters, bills, online information, and perhaps a leaflet or set of FAQs. But lurking in the background is the credit agreement – the long legal document that seems specifically designed to be inaccessible and illegible. This may be the only source – and it is certainly the only legally defensible source – of reference information in the case of a dispute.

Designers almost never engage seriously with the communication function of legal contracts; instead, they often present them in a jokey, embarrassed way that belies their seriousness (fig. 2). Or they make them visually tidy, treating

Fig. 2. Companies often use the informal term "the small print" to make light of the fact that we are dealing with a serious contract. It seems that the larger the headline, the smaller the print actually is.

Fig. 3. The designer of this contract has regarded the elegant white space at the top of the page as a priority over legibility or a good access structure.

them as an element in an elegant design, rather than as content that needs to be visually structured to help the reader (fig. 3).

Most people sign credit agreements, install software, or rent cars with barely a glance at the small print in the contract – even though by signing they declare that they have "read and understood" the terms. A recent survey in the UK found that, whereas most people admitted that they do not read contracts in full, twenty-three percent said they had experienced problems as a result.[6] In other words there is a mismatch between the marketing promises on which people base their decisions and the legal contract that actually governs the product. Elizabeth Warren calls these mismatches "tricks and traps", while the designer Alan Siegel has called them "stealth clauses".[7]

If designers engaged seriously with the task of designing a contract, we would expect to see legible type, diagrams (for example, for time periods and procedures), comparative tables, large headings relating to specific questions

6 Office of Fair Trading, *Consumer Contracts*, Report OFT1312 (London: Office of Fair Trading, 2011).

7 See Elizabeth Warren, "Elizabeth Warren on Credit Card 'Tricks and Traps'", interview by David Brancaccio, *Now on PBS*, week of 2 Jan. 2009, extended and edited version of interview by the US Public Broadcasting Service, http://www.pbs.org/now/shows/501/credit-traps.html (accessed 15 Oct. 2011); and Alan Siegel, "Let's Simplify Legal Jargon", video-recorded lecture, Feb. 2010, *TED*, http://www.ted.com/talks/alan_siegel_let_s_simplify_legal_jargon.html (accessed 20 Sept. 2011).

the customer might have, layered information (larger summaries with smaller detail), and so on. In fact, it would look much more like a user guide.

Some Key Concepts: Genre, Architecture, Affordances, and Patterns

One reason why contracts do not receive this level of attention is because, in fact, few documents do. Most documents necessarily conform to a strong set of genre conventions that have evolved over time and that tend to be copied without the writers going back to first principles each time.

In information design, *genre* simply means a type of document that is common enough to have acquired a name: *magazine*, *newspaper*, *form*, *user guide*, *catalogue letter*, *bill*, *leaflet*, and *poster* are all names for document types that carry very clear expectations about their size, content, organization, seriousness, and communicative intent. Online documents are still developing, but already we distinguish between blogs, chat rooms, auctions, shops, and community pages.

The usefulness of genres lies in the fact that they are a design shortcut: by using a strong genre convention, the designer does not have to think everything through from scratch. What's more, the user can also recognize the genre and know exactly what kind of approach to use – in a newspaper, sport will be at the back, for example.

This means that, in contrast to some interpretations of graphic design, information design never sets out to be innovative as a matter of principle. It often has to be so in order to solve a problem, but innovation carries risks that need to be weighed up carefully. Imagine, for example, if every airport in the world used symbol systems that were completely innovative and different from everywhere else. A traveller leaving one airport, transiting in another, and arriving at a third, would have to decipher three different sets of symbols for arrivals, departures, baggage hall, toilet, and so on. Airports are an obvious example, but every genre, every information context, carries some degree of expectation that cannot be ignored.

On the other hand, while genres are an essential starting point, we cannot accept them unquestioningly. For one thing, because they depend on precedent and convention, genres can only work within discourse communities or cultural contexts where they are well known. Moreover, some genres (such

as contracts) have failed to evolve in response to new needs (for example, the fast-changing competitive marketplace for mobile phones or credit cards). And others may need to adapt to a new channel of communication.

In such cases, we need to design from first principles. This means defining the problem or creating a design brief, and finding a source for possible solutions.

Information design problems (and information genres) are motivated by three key participants in the communication process. There is the writer, publisher, originator, or topic owner (the person or organization who has something to say, however we define them); then there is the audience, the people who need to know something.[8] And finally, there is the communication channel itself, whether this is a sign, a page, or a smart-phone screen. Although not a person, the channel (by which I mean both the device and the necessary processes for using it) is always a major constraint on what may be said, how much can be viewed at once, and how it may be accessed – it is as strong an influence on the designer as are the sender (the writer, publisher, etc.) and the audience.

Each participant will influence the design: the content may have a natural *topic structure* that needs to be represented graphically – through the narrative structure, diagrams, page divisions, or layouts. The audience will bring their own purposes and demand an *access structure* to match. And the channel will impose what I call an *artefact structure* that constrains the other two: a simple example would be the limit on the length of lines or pages. Together these sources of structure, mediated by the creative process of the designer, will lead to the *information architecture* of a document (whether paper or online).

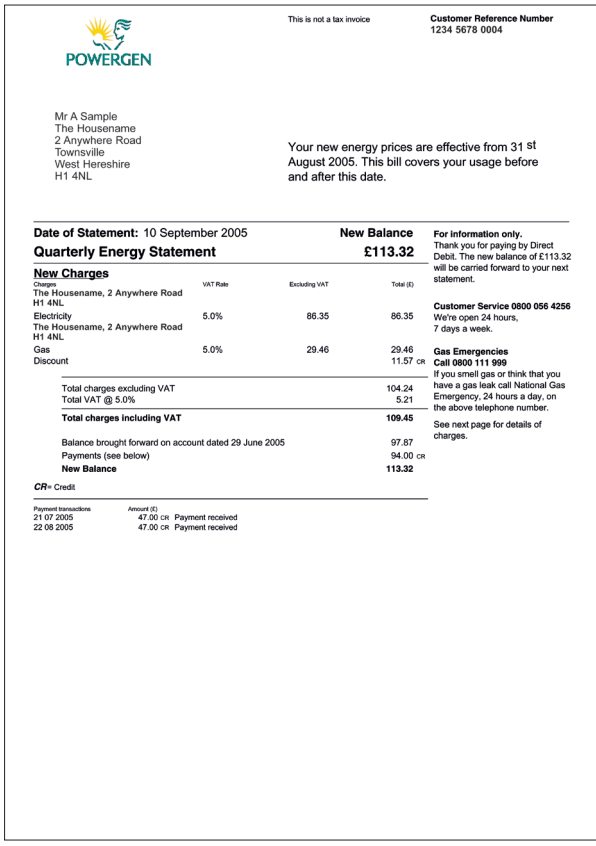
Information architecture maps out the ideal structural relationship between elements in a document, which then needs to be realized at the surface level. Some web designers distinguish between the *wireframe* (which is one of the tools for specifying information architecture) and the *skin* – the graphic surface as represented by the choice of font, colour, and so on. Information designers, because they are concerned equally with language and graphic design, need to also consider the *text surface*: the use of clear language principles.

A useful concept to bring in at this point is *affordance*. Associated with the psychologist James J. Gibson and popularized among interaction designers by

8 Some people use the terms *sender* and *receiver*, which are a useful shorthand. But I think this sounds too much as if communication is a one-way street and less conversational than it actually is in most cases.

Don Norman, affordance is based on the idea that the human perceptual system looks for "action possibilities".[9] Everything around us has potential utility and potential significance, and this is as true of marks on a page as it is in the physical world. Affordance theory is influenced by the Gestalt psychologists' classic observations of perceptual principles in the 1920s: things may be associated through proximity or similarity, for example.[10]

Fig. 4a: The original bill, which customers found confusing.



POWERGEN

This is not a tax invoice

Customer Reference Number
1234 5678 0004

Mr A Sample
The Housename
2 Anywhere Road
Townsville
West Hereshire
H1 4NL

Your new energy prices are effective from 31 st August 2005. This bill covers your usage before and after this date.

Date of Statement: 10 September 2005

Quarterly Energy Statement

New Balance
£113.32

New Charges

Charges	VAT Rate	Excluding VAT	Total (£)
The Housename, 2 Anywhere Road H1 4NL			
Electricity	5.0%	86.35	86.35
The Housename, 2 Anywhere Road H1 4NL			
Gas	5.0%	29.46	29.46
Discount			11.57 CR
Total charges excluding VAT			104.24
Total VAT @ 5.0%			5.21
Total charges including VAT			**109.45**
Balance brought forward on account dated 29 June 2005			97.87
Payments (see below)			94.00 CR
New Balance			**113.32**

***CR*= Credit**

Payment transactions	Amount (£)	
21 07 2005	47.00 CR	Payment received
22 08 2005	47.00 CR	Payment received

For information only.
Thank you for paying by Direct Debit. The new balance of £113.32 will be carried forward to your next statement.

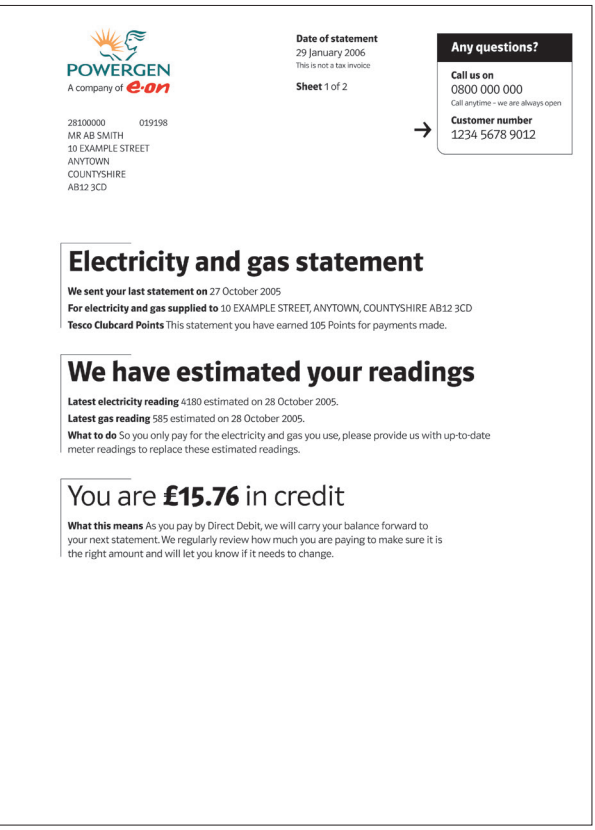
Customer Service 0800 056 4256
We're open 24 hours, 7 days a week.

Gas Emergencies
Call 0800 111 999
If you smell gas or think that you have a gas leak call National Gas Emergency, 24 hours a day, on the above telephone number.

See next page for details of charges.

9 See James J. Gibson, "The Theory of Affordances", in R. E. Shaw and J. Bransford, eds., *Perceiving, Acting, and Knowing* (Hillsdale, NJ: Lawrence Erlbaum Associates, 1977); and Donald A. Norman, *The Design of Everyday Things* (New York: Doubleday, 1999).

10 See Max Wertheimer, "Laws of Organization in Perceptual Forms", in W. Ellis, ed., *A Source Book of Gestalt Psychology* (London: Routledge and Kegan Paul, 1938), pp. 71–88; originally published in German as "Untersuchungen zur Lehre von der Gestalt II", *Psychologische Forschung* 4 (1923): 301–350.


POWERGEN
A company of e·on

28100000 019198
MR AB SMITH
10 EXAMPLE STREET
ANYTOWN
COUNTYSHIRE
AB12 3CD

Date of statement
29 January 2006
This is not a tax invoice

Sheet 1 of 2

Any questions?
Call us on
0800 000 000
Call anytime – we are always open
Customer number
1234 5678 9012

Electricity and gas statement

We sent your last statement on 27 October 2005
For electricity and gas supplied to 10 EXAMPLE STREET, ANYTOWN, COUNTYSHIRE AB12 3CD
Tesco Clubcard Points This statement you have earned 105 Points for payments made.

We have estimated your readings

Latest electricity reading 4180 estimated on 28 October 2005.
Latest gas reading 585 estimated on 28 October 2005.
What to do So you only pay for the electricity and gas you use, please provide us with up-to-date meter readings to replace these estimated readings.

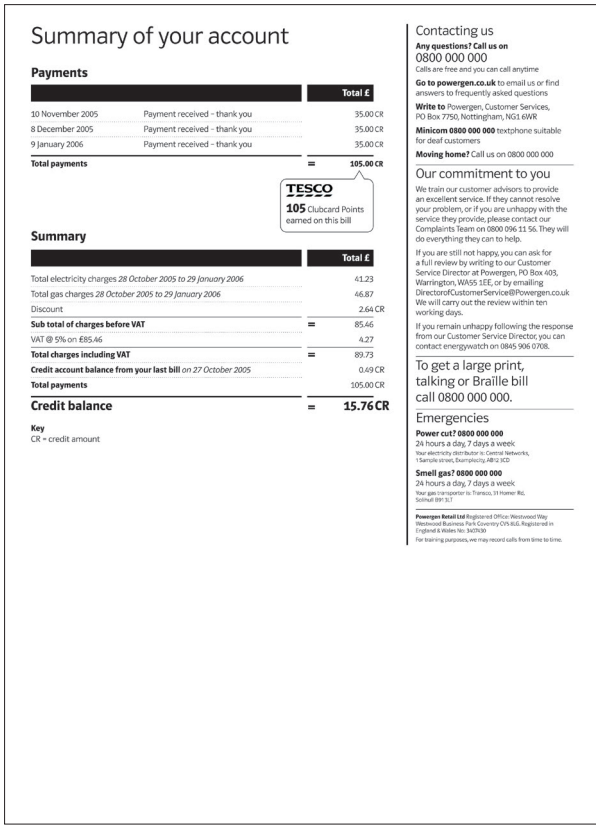
You are **£15.76** in credit

What this means As you pay by Direct Debit, we will carry your balance forward to your next statement. We regularly review how much you are paying to make sure it is the right amount and will let you know if it needs to change.

Fig. 4b and 4c: The front and back of the new bill. (Design: Simon Letherland and Richard Bland, Enterprise IG, for E.on UK.)

Good affordance is critical at the point where information architecture – the desired relationship between the elements in a document – needs to be made real. Information designers must master a set of tools that can help make information understandable and usable: language tools, such as rhetoric, grammar, cohesion, and vocabulary; pictorial tools, such as line, texture, and composition; and design tools, such as typography, colour, proportion, space, and grids. And of course, they also need a corresponding understanding of how users will interpret the text, pictures, and pages they create with these tools. This means a basic insight into such concepts as the reading process, cognition, perception, and memory.

Information design solutions, then, are generally based on both cultural and functional sources, which, in this (over-)simplified account, I have represented by genres and affordances.



Summary of your account

Payments

		Total £
10 November 2005	Payment received – thank you	35.00 CR
8 December 2005	Payment received – thank you	35.00 CR
9 January 2006	Payment received – thank you	35.00 CR
Total payments	=	**105.00 CR**

TESCO
105 Clubcard Points earned on this bill

Summary

		Total £
Total electricity charges *28 October 2005 to 29 January 2006*		41.23
Total gas charges *28 October 2005 to 29 January 2006*		46.87
Discount		2.64 CR
Sub total of charges before VAT	=	85.46
VAT @ 5% on £85.46		4.27
Total charges including VAT	=	89.73
Credit account balance from your last bill *on 27 October 2005*		0.69 CR
Total payments		105.00 CR
Credit balance	=	**15.76 CR**

Key
CR = credit amount

Contacting us

Any questions? Call us on
0800 000 000
Calls are free and you can call anytime

Go to powergen.co.uk to email us or find answers to frequently asked questions

Write to Powergen, Customer Services, PO Box 7750, Nottingham, NG1 6WR

Minicom 0800 000 000 textphone suitable for deaf customers

Moving home? Call us on 0800 000 000

Our commitment to you

We train our customer advisors to provide an excellent service. If they cannot resolve your problem, or if you are unhappy with the service they provide, please contact our Complaints Team on 0800 096 11 56. They will do everything they can to help.

If you are still not happy, you can ask for a full review by writing to our Customer Service Director at Powergen, PO Box 403, Warrington, WA55 1EE, or by emailing DirectorofCustomerService@Powergen.co.uk We will carry out the review within ten working days.

If you remain unhappy following the response from our Customer Service Director, you can contact energywatch on 0845 906 0708.

To get a large print, talking or Braille bill call 0800 000 000.

Emergencies

Power cut? 0800 000 000
24 hours a day, 7 days a week
Your electricity distributor is Central Networks, 1 Sample street, Examplecity, AB12 3CD

Smell gas? 0800 000 000
24 hours a day, 7 days a week
Your gas transporter is Transco, 31 Homer Rd, Solihull B91 3LT

Powergen Retail Ltd Registered Office: Westwood Way Westwood Business Park Coventry CV5 8LE. Registered in England & Wales No. 3407430
For training purposes, we may record calls from time to time.

Fig. 4 shows an electricity bill, in its original and redesigned versions. The old bill is complicated and full of numbers (phone numbers, the account number, meter readings, prices, and totals). But it does actually conform to many of the conventions of the electricity bill genre in the UK. The problem is that the bill genre has not evolved very far. The new design ignores the genre completely; it is based on a functional approach that reflects the typical user journey as reported by customers. The front page summarizes the key facts customers look for (messages are selected from a bank of possible texts, using data-driven rules). The more complex billing details are provided on the back, so customers can check them if they want.

Within the studio, this arrangement was known as the “news headlines”; it’s a simple technique that can be applied across other kinds of complex documents. Most designers have a repertoire of solutions they draw from when

faced with problems they have met before. In certain other fields, such solutions have been formalized as *pattern libraries*. When organized hierarchically (with higher-order patterns for whole documents and lower-order patterns for smaller components), they are sometimes called *pattern languages*.

Pattern languages originated with the architect Christopher Alexander, who wanted a way to record successful architectural solutions that may have simply evolved in an unplanned way in order to make them available for more purposeful planning.[11] A design pattern includes common problems along with recommended solutions and examples. Most importantly, it is a naming exercise that allows us to describe and discuss ideas that were previously grasped only tacitly. Although the notion of pattern language was not widely adopted within architecture, it has been taken up within software engineering and interaction design to ensure consistency and save effort.

Design patterns may originate within particular genres as functional solutions that have proved successful. Their use in other genres has the effect of "quoting" the pattern's home genre and, therefore, importing its functionality and signalling an appropriate reading strategy to the user.

Let me give an example. A recipe book conventionally lists the ingredients you will need in a table at the beginning. A cook can check if they have these items at hand before they start cooking. If you treat this as a "shopping list" design pattern, it becomes more easily available when designing a completely different document. For example, a shopping list at the start of a form can tell the form-filler that they are going to need their social security number, their last three payslips and their bank details. So the pattern language approach allows us to raid different genres and describe their successful design patterns in a way that makes them sharable not only across other genres but also other channels.[12]

Fig. 5 provides another example – a complicated table of options for mobile phone price plans is made simpler by applying the "123" design pattern we usually associate with the user manual genre.

11 See Christopher Alexander, Sara Ishikawa, and Murray Silverstein, *A Pattern Language: Towns, Buildings, Construction* (New York: Oxford University Press, 1977).

12 For more about applying pattern language to information design, see Robert Waller and Judy Delin, "Towards a Pattern Language Approach to Document Description", a paper presented at the conference Multidisciplinary Approaches to Discourse, Moissac, France, 2010 (proceedings in press); available for downloading from my website, http://www.robwaller.org/writing.html.

We'll help you find your perfect fit.

step 1

How much do you talk each month?

	Tick one		Additional minutes: Fixed line/ Vodafone	Other networks
Anytime Anytime plans allow you to call anyone on any UK network anytime, day or night.	☐ 30 minutes for	£15	15p	35p
	☐ 100 minutes for	£22	15p	35p
	☐ 200 minutes for	£30	12p	30p
	☐ 400 minutes for	£50	12p	30p
	☐ 1000 minutes for	£75	12p	30p
...in the **Daytime** Daytime plans allow you to call anyone on any UK network, 8am – 7pm Monday to Friday	☐ 100 minutes for	£20	12p	25p
	☐ 200 minutes for	£25	12p	25p
	☐ 400 minutes for	£45	12p	25p
	☐ 1000 minutes for	£60	12p	25p
...at **Evenings & weekends**	☐ 300 minutes for	£20	29/5p	35p

step 2

Which half-price extras pack suits you?

Tick one

- ☐ £6 of text or picture messages for £3 — 50 Texts or 16 picture messages
- ☐ £18 of text or picture messages for £9 — 150 Texts or 48 picture messages
- ☐ £36 of text or picture messages for £18 — 300 Texts or 96 picture messages

Additional charges after using your extras-pack

- Text messages 12p each.
- Picture messages 36p each.
- Internet usage on Anytime 200, 400, 1000 and the Daytime price plans £2.35/MB
- Internet usage on Anytime 30, 100 and the Eve & Wknd 300 price plans £7.50/MB

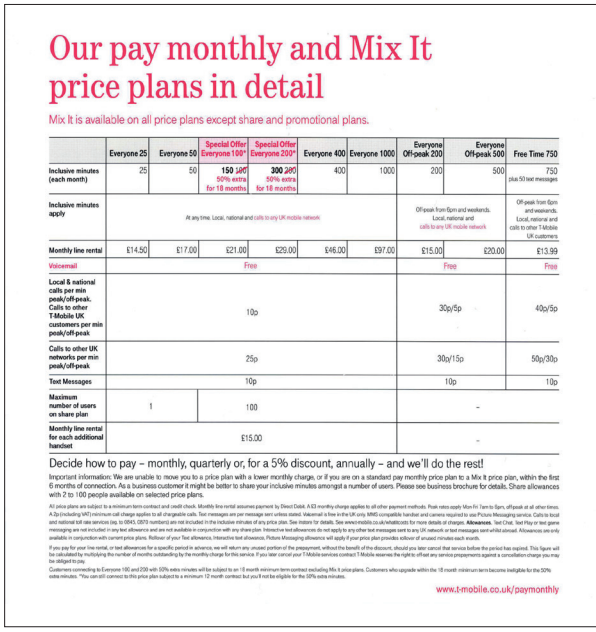
step 3

Tell us your choices and start enjoying free extras!

- **£2 of Free Try me services** every month to send free picture messages or use the mobile internet
- **Carry over unused minutes** on Anytime and Daytime plans to the next month
- **Change your price plan** for FREE when your needs change

You can call us any time on **0000 000 000**
Or visit our website **www.vodafone.com**

Fig. 5. What had previously been a complex table is transformed into a decision support tool, with the 123 structure found in user manuals. (Design: Iain Roe, Enterprise IG, for Vodafone UK.)



Our pay monthly and Mix It price plans in detail

Mix It is available on all price plans except share and promotional plans.

	Everyone 25	Everyone 50	Special Offer Everyone 100*	Special Offer Everyone 200*	Everyone 400	Everyone 1000	Everyone Off-peak 200	Everyone Off-peak 500	Free Time 750
Inclusive minutes (each month)	25	50	150 (of which 50% extra for 18 months)	300 (of which 50% extra for 18 months)	400	1000	200	500	750 plus 50 text messages
Inclusive minutes apply	At any time. Local, national and calls to any UK mobile network						Off-peak from 6pm and weekends. Local, national and calls to any UK mobile network		Off-peak from 6pm and weekends. Local, national and calls to other T-Mobile UK customers
Monthly line rental	£14.50	£17.00	£21.00	£29.00	£46.00	£97.00	£15.00	£20.00	£13.99
Voicemail	Free						Free		Free
Local & national calls per min peak/off-peak. Calls to other T-Mobile UK customers per min peak/off-peak	10p						30p/5p		40p/5p
Calls to other UK networks per min peak/off-peak	25p						30p/15p		50p/30p
Text Messages	10p						10p		10p
Maximum number of users on share plan	1		100				-		
Monthly line rental for each additional handset	£15.00						-		

Decide how to pay – monthly, quarterly or, for a 5% discount, annually – and we'll do the rest!

Important information: We are unable to move you to a price plan with a lower monthly charge, or if you are on a standard pay monthly price plan to a Mix It price plan, within the first 6 months of connection. As a business customer it might be better to share your inclusive minutes amongst a number of users. Please see business brochure for details. Share allowances with 2 to 100 people available on selected price plans.

All price plans are subject to a minimum term contract and credit check. Monthly line rental assumed payment by Direct Debit. A £3 monthly charge applies to all other payment methods. Peak rates apply Mon-Fri 7am to 6pm, off-peak at all other times. A 2p (including VAT) minimum call charge applies to all chargeable calls. Text messages are per message sent unless stated. Vodafone® is free in the UK only. MMS compatible handset and camera required to use Picture Messaging service. Calls to local and national toll rate services (eg. to 0845, 0870 numbers) are not included in the inclusive minutes of any price plan. See instore for details. See www.t-mobile.co.uk/whatitcosts for more details or charges. **Allowances.** Text Chat, Text Play or text game messaging are not included in any text allowance and are not available in conjunction with any share plan. Interactive text allowances do not apply to any other text messages sent to any UK network or text messages sent whilst abroad. Allowances are only available in conjunction with current price plans. Rollover of your Text allowance, Interactive text allowance, Picture Messaging allowance will apply if your price plan provides rollover of unused minutes each month.

If you pay for your line rental, or text allowances for a specific period in advance, we will return any unused portion of the prepayment, without the benefit of the discount, should you later cancel that service before the period has expired. This figure will be calculated by multiplying the number of months outstanding by the monthly charge for this service. If you later cancel your T-Mobile services contract T-Mobile reserves the right to offset any service prepayments against a cancellation charge you may be obliged to pay.

Customers connecting to Everyone 100 and 200 with 50% extra minutes will be subject to an 18 month minimum term contract excluding Mix It price plans. Customers who upgrade within the 18 month minimum term become ineligible for the 50% extra minutes. *You can still connect to this price plan subject to a minimum 12 month contract but you'll not be eligible for the 50% extra minutes.

www.t-mobile.co.uk/paymonthly

Transforming

The example in Figure 5 is transformative – that is, the designer has not simply taken the original content and arranged it more elegantly; rather, he has taken it completely apart, reconsidered its purpose, and even its content, and built a new, best-practice solution to the problem of helping customers choose a mobile phone price plan.

The information designer is an intermediary between content owners and information users. In some organizations, the roles of editor and graphic designer are limited to the simple optimization of the material provided by the author. But successful information design often requires a much more radical transformation in which content is completely reframed and reshaped.[13] There is little point in applying a band-aid if major surgery is required. And there is little point in plain English text and legible type if the wrong information is provided in the wrong order to the wrong people.

In this particular case, the client was keen to simplify their price plans, and a process of real transformation was possible. But this is rare. For one thing, there are risks in transformation – the content is not exactly the same as it was, so something important may be missed. Complex documents usually have a history, which may be poorly recorded, and it can later emerge that there was actually a valid purpose for something the designer has left out.

This means that information designers, if they are to be information transformers, need a degree of confidence, control, and respect within the organization they work for. Apple has become one of the world's largest companies not because it has different technology but because it has understood and prioritized the user experience. The technology only exists to deliver that experience.

The *information transformer*, as a defined role, actually predates the term *information designer*. It originated with the Isotype Institute, the pioneers of information graphics, when founder Otto Neurath realized the need for a specialist communicator who could mediate between the data experts and the graphic artists who developed their charts. His wife Marie Neurath was

13 In a recent conference paper, I list a range of different transformation strategies; see Robert Waller, "Simplification: What Is Gained and What Is Lost", in Thomas Porathe, ed., *Applications of Information Design* 2008 (Eskilstuna, Sweden: Malardalen University Press, 2008), pp. 219–230; available for downloading from my website, http://www.robwaller.org/writing.html.

the first *transformer*, and she perfected the role.[14] She was able to represent the user in discussions with scientists and sketched clear explanations that a skilled designer then developed into diagrams. The role is perhaps similar to that of a film director, who must understand each specialist role well enough to give instructions and yet retains an overall vision of the narrative that audiences will see.

The Challenge for Information Design Education

Although information design addresses a very fundamental human need, there is remarkably little education or training that prepares people to be information designers. In Europe, many thousands graduate as graphic designers, at technical, degree, or postgraduate levels, but only a handful attend specialist classes in information design.

The history of information design is about the convergence of different traditions – in particular, graphic design, plain language, and usability research. Karen Schriver provides a useful timeline in her seminal book *Dynamics in Document Design*.[15] These disciplines, in turn, draw on a wide range of theoretical approaches, including cognitive psychology, linguistics, semiology, cultural studies, behavioural economics, design methods, and design history. Their research methods may be experimental, ethno-methodological, historical, or analytic. And to be effective, designers also need to understand organizational change, branding, marketing, and other business concepts that will enable them to manage their role in organizations.

Obviously this is a potentially massive syllabus. The reality is that, rather than try to master it all, information designers use a set of methods, heuristics, and design patterns that, while traceable to the academic traditions just listed, do not depend on a mastery of them.

So, in conclusion, we can say that information design has a broad scope and a transformative ambition.

14 See Marie Neurath and Robin Kinross, *The Transformer: Principles of Making Isotype Charts* (London: Hyphen Press, 2009).

15 Karen A. Schriver, *Dynamics in Document Design* (New York: Wiley Computer Publishing, 1997).

Otto Neurath described the transformer as the "trustee of the public", and this is something that motivates the information designer. Information design is not about creativity, personal expression, or awards; it is about solving problems and simplifying life in the information age. Nearly forty years ago, in an analysis of the transformer's role, Michael Macdonald-Ross wrote:

> Our message is humanistic: break down the barriers in the interests of the reader. Take responsibility for the success or failure of the communication. Do not accept a label or a slot on a production line. Be a complete human being with moral and intellectual integrity and thoroughgoing technical competence. Be a transformer![16]

16 Robert Waller and Michael Macdonald-Ross, "The Transformer Revisited", *Information Design Journal* 9 (2000): 188; the essay, which was written in 1974, was originally published in the Penrose Annual in 1976.