

# Practical tricks of the Disaster Management trade: Managing disasters with standard business tools and software

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Paper presented at the 2009 DMISA Conference, Elangeni Hotel, Durban

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## Introduction

I would like to start off with a statement that I will try to substantiate later on:

*“You can solve more problems with the software you already own than you think. There is a wealth of useful functionality available in standard off-the-shelf business tools and software that you are already using. In fact, very few users use more than 30% of the functionality available to them in their existing business software. “*

This presentation will explore and showcase under-utilised tools that could increase the efficiency of professionals working in the disaster management field without the need for additional spend on software or systems. Practical every-day problems that are faced by disaster management professionals will be discussed and possible solutions will be explained and demonstrated. Useful free web services and software will also be highlighted.

The overall purpose of this paper is to highlight a few tasks related to Disaster Management that can be done with standard off-the-shelf business tools and software – business tools and software that you, as disaster management officials, quite likely already have access to.

One could wonder why someone like myself who works for a company that sells software and hardware solutions to the Disaster Management industry would want to tell you how you can do Disaster Management with software and systems you already own.

I have two sound business reasons:

The first reason is that we believe that Disaster Management officials should be capacitated to take confident steps into the world of information technology. The possible benefits of confidence in the use of information technology are vast, and we in Disaster Management should stop playing with information technology and start making information technology work for us. So we at Aurecon want to encourage Disaster Management officials to become power-users of hardware and software and information technology in general and this presentation is intended to whet the appetite to learn more about what you already have loaded on the computer in your office.

The second reason is that we want to address this generally held misconception, sometimes fostered by ICT workers, that a system can do disaster management – at “the press of a button”. We have encountered unrealistic high expectations of ICT, expectations built through the brave new digital age we live in where everything must be possible – like we see in the movies. The truth is that, at best, a system can only support decision-making and record risk assessments, plans and interventions in excruciating detail. We have not yet arrived at the state of technological development where a system will drive the response vehicle out to the scene, do the impact assessment, interview affected individuals, liaise with political leadership and manage response and relief operations. No personal computer has yet chaired a joint operations meeting and no software has been written that can argue and negotiate with line function departments about their disaster risk reduction responsibilities. And do we really want systems to perform these functions? With this presentation we highlight what humans can do to better use technology available to them, but we also emphasise that any system is 10% technology, 20% process and 70% people. A system without users – “power” users – is dead in the water.

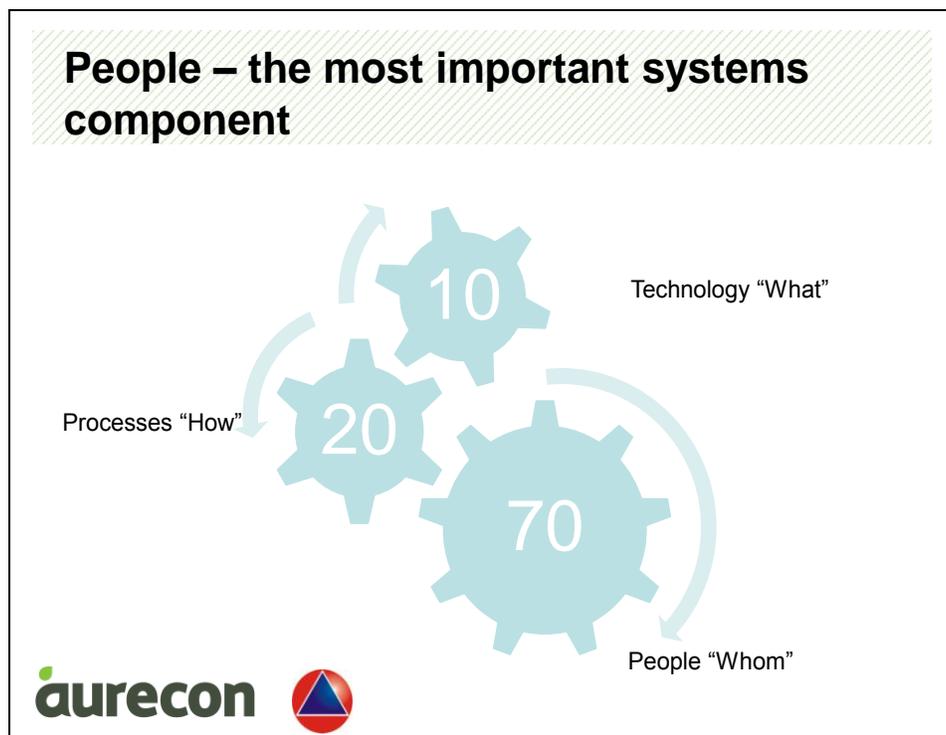


Figure 1: The relative importance of different components of systems

So let us take a look at the disaster management business processes and how your standard business tools can be used to reduce disaster risk and ensure fast and efficient response to disasters.

## Standard Business Tools

Just what are these standard business tools I am on about? Well they are the tools you are already using on a daily basis. Your desktop or laptop computer loaded with programmes you use to send and receive e-mail, write letters, produce and present presentations, manage your budget, and look for information on the internet. It might also be the tools someone else uses on your behalf - someone like a secretary or personal assistant. But these tools are not only computer-based tools: your ballpoint pen and writing pad are business tools, your diary and your cellphone and that copy machine or fax machine in the corner are business tools, along with the telephone sitting on your desk and that fancy digital stills and video camera and GPS you bought at the end of the previous financial year. If you are fortunate enough to have access to a two-way radio system, that is a business tool.

That battered clipboard you have with the elastic band to keep your papers from blowing around while you make notes in gale-force winds – is a business tool. The watch on your wrist is a business tool.

(Interaction with audience #1)

## The Disaster Management Business Process

If you ask someone in South Africa what the Disaster Management Business Process would be, the answer will most likely be based on the key performance areas in the SA National Disaster Management Framework:

- Establishing institutional capacity
- Risk assessment
- Risk reduction
- Recovery and rehabilitation

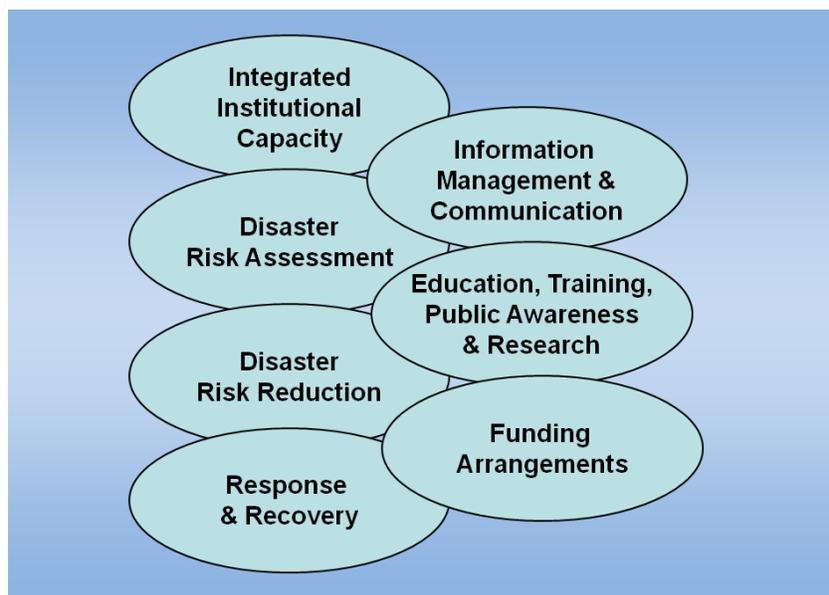


Figure 2: The Key Performance Areas and Enablers of the SA National Disaster Management Framework, 2005

People might also see the Disaster Management Business Process in the elements identified in the definition of Disaster Management in the Disaster Management Act:

- Prevention
- Mitigation
- Preparedness
- Response / Relief
- Recovery / Reconstruction

The elements mentioned above is represented, with slight differences in wording, by the expand-contract model of Disaster Management below which was published in the Green Paper on Disaster Management in 1998.

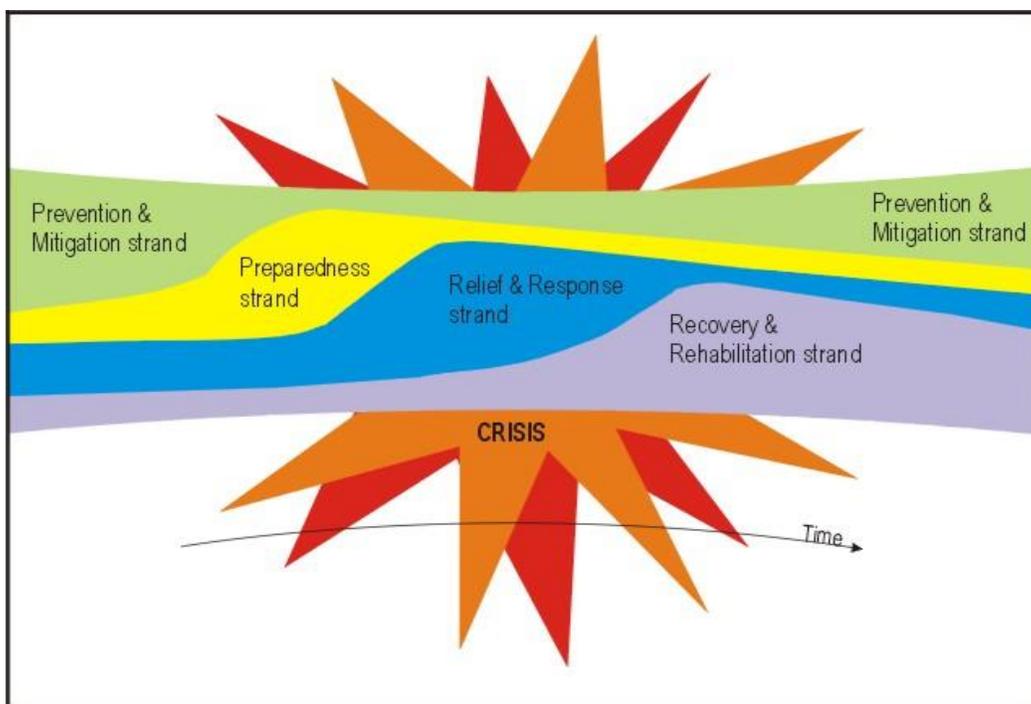


Figure 3: Elements of Disaster Management identified in the SA Green Paper on Disaster Management, 1998

There are also other views on Disaster Management business processes, such as the Disaster Management Continuum on the next page.

Outside of South Africa and Southern Africa, there are of course different views on what would be involved in a Disaster Management Business Process. From an American perspective, recent years have underscored the need for preparation to protect against loss of life and damage to property in the event of natural disasters and terrorist attacks. From the Indian Ocean tsunami to hurricanes along the Gulf Coast of the United States, and from the 9/11 attack in New York City to the Madrid train bombings and London subway attacks, US commentators believe that they have seen over and over again that

preparations should be made in advance in order to coordinate responses across a spectrum of jurisdictions, disciplines, and agencies.

The United States Department of Homeland Security formalized the need for coordinated event planning by working with professionals from all facets of emergency response to create the National Incident Management System (NIMS). While NIMS provides a framework for incident management, it doesn't prescribe how to plan, train for, or execute emergency responses, or how to handle post-incident recovery and reviews. In short, the US approach to Disaster Management seems a bit limited to responsive issues and does not add much to the search for Disaster Management business processes. Such a limiting focus is also seen in Europe where a large amount of energy is spent on critical infrastructure protection.

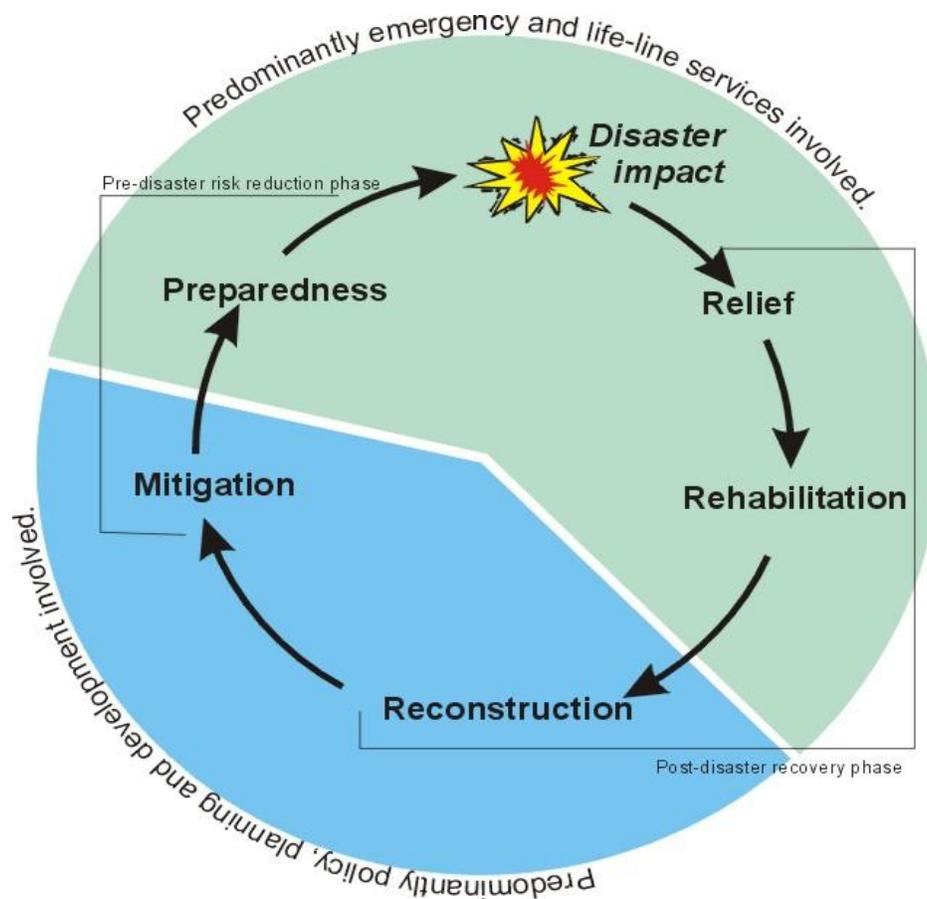


Figure 4: The Disaster Management Continuum presents one understanding of Disaster Management business processes

Elsewhere in the developing world and supported by the Hyogo Framework, we can see more comprehensive understandings of the Disaster Management business process which is more useful for the purpose of this paper, which is to look at Disaster

Management business processes and how these can be supported by existing business tools.

This view is unpacked in the SA National Disaster Management Framework, where an information management and communication system for Disaster Risk Management is described and different business processes are linked together into an integrated systems model.

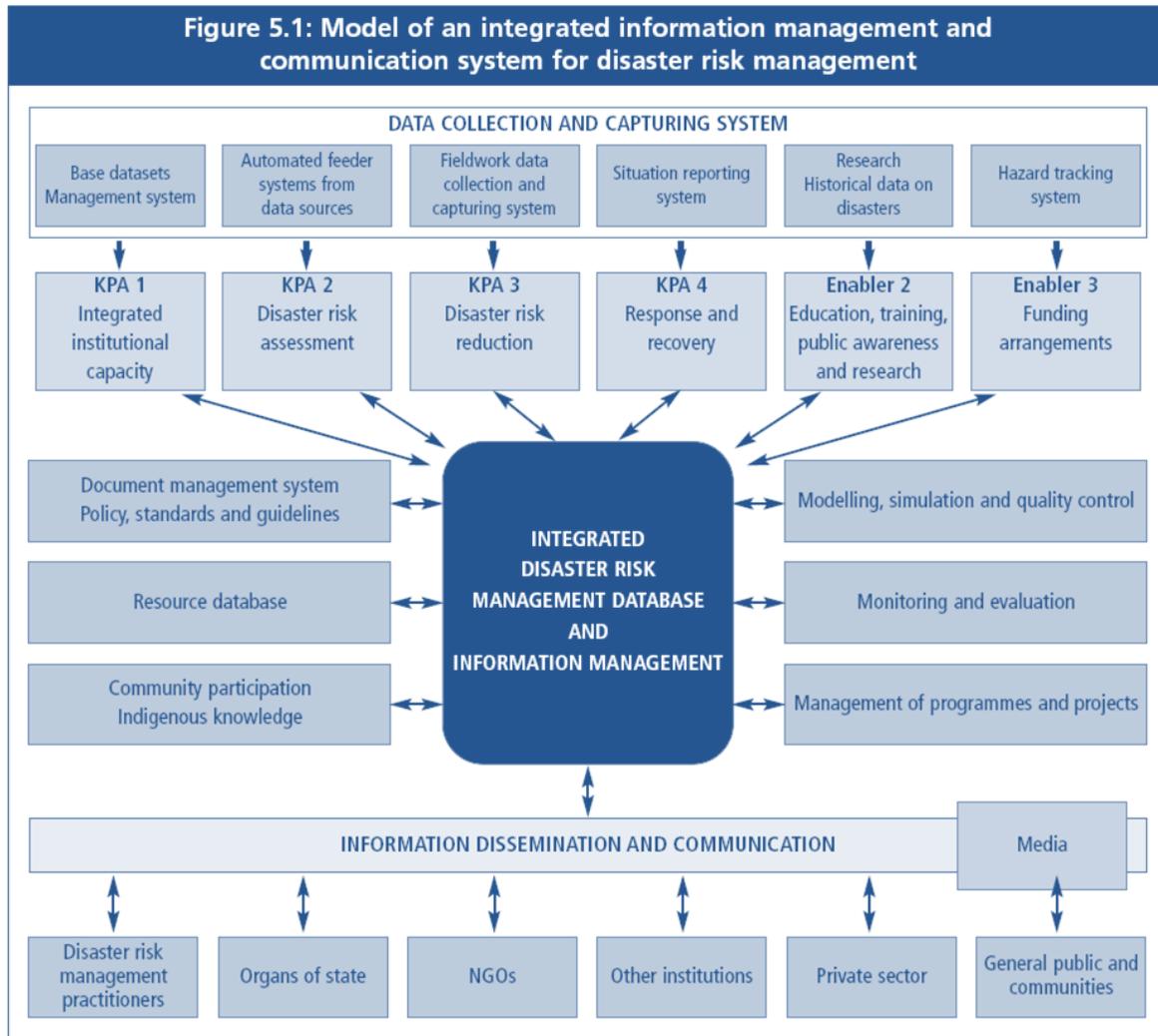


Figure 5: The SA National Disaster Management Framework's view on information management and business processes

Additional views on Disaster Management business processes could of course be identified through additional research. One strong candidate area for exploration would be the Public and Development Management field, as well as Strategic- and Operational Management and Risk Management. Such additional research, although interesting, falls outside the scope of this paper. The above integrated model will be

used as a basis for analyzing supportive business tools for the business processes falling within the responsibility of Disaster Management Officers.

The Integrated Information Management and Communication System (IIM&CS) described in the SA Disaster Management Framework contains references to the following Disaster Management business processes:

- Data collection and capturing
- Information dissemination and communication
- Document management
- Resource database management
- Community participation and indigenous knowledge management
- Modelling, simulation and quality control
- Monitoring and evaluation
- Management of programmes and projects

In the next section these business processes will be linked with possible business tools – business tools that most Disaster Management officials already have access to. Suggestions will be made on which tools can be used to support which business processes.

### **Business tools for Disaster Management**

Data collection and capturing, the first business process, supports all the key performance areas and enablers of Disaster Management as identified in the SA National Disaster Management Framework. The table below lists the business requirements for this business process and suggests basic business tools that could be used to execute these business processes.

**Table 1: Business tools for data collection and capturing**

<b>Business Requirements</b>	<b>Basic business tools</b>
<b>Base datasets management system</b>	File structure on PC, Register of datasets on spreadsheet
<b>Automated feeder system from data sources</b>	Internet Explorer, RSS feed subscription
<b>Fieldwork data collection and capturing system</b>	Hard-copy forms, Mobile devices
<b>Situation reporting system</b>	Word and E-mail, SMS
<b>Research historical data on disasters</b>	Internet search engines
<b>Hazard tracking system</b>	Spreadsheet

Information dissemination and communication is the second major Disaster Management business process. The Framework mentions several target audiences for such communication. When considering business tools for use in this business

process, target audiences may have a bearing on the type of tool used. In the table the various available options for tools are mentioned as a collective.

**Table 2: Business tools for information dissemination and communication**

Target audiences	Basic business tools
<b>Disaster risk management practitioners</b>	E-mail
<b>Organs of state</b>	Websites
<b>NGO's</b>	SMS
<b>Other institutions</b>	Fax
<b>Private sector</b>	Instant messaging / Skype
<b>Media – General public and communities</b>	Powerpoint
	Contacts databases

The remainder of the business processes identified in the SA National Disaster Management Framework will now be discussed. Once again the business requirements are listed on the left (referencing identified business processes) and basic business tools that can be used for these business processes are listed in the right-hand column.

**Table 3: Business tools for general information management**

Business Requirements	Basic business tools
<b>Document management system</b>	File structure on PC
<b>Resource database</b>	Word Spreadsheet Contacts database in e-mail packages
<b>Community participation and indigenous knowledge</b>	E-mail Word Maps (Participative GIS) Forms
<b>Modelling, simulation and quality control</b>	Spreadsheet
<b>Monitoring and evaluation</b>	Spreadsheet
<b>Management of programmes and projects</b>	Word Spreadsheet

While space does not allow detailed examples of each of these tools being used for the business processes concerned, some examples will be shown in the presentation of this paper.

It should be noted that the suggestions made here for basic business tools and the practical applications that will be shown should be considered the bare minimum, and that it is in no way suggested that Disaster Management officials can only use these basic tools indefinitely. There are considerable advantages in terms of efficiency, effort and time required as well as accuracy in moving to more enhanced business tools.

The principle that needs to be adhered to is that personnel should first understand the business process and be able to use basic tools in executing the business processes

before moving on to more sophisticated tools. As suggested earlier, the human element is 70% of any system. No technology will survive an operator which is not sufficiently capacitated and motivated to use it. And the problem is that In order to get 10 years of experience, you need 10 years.

In the next section of this paper some practical suggestions will be made on more efficiently using existing business tools for Disaster Management.

Many of these basic tools and solutions will seem very “manual” and simplistic, but are in fact elegant ways to get the job done with a minimum of extra investment in systems. If a variety of roleplayers invest in expensive but disparate systems the resulting duplication and lack of interoperability will be significantly less elegant. By using basic technology and doing things once and right, a situation is created where information can easily and quickly be shared with a minimum of effort. It is vital to record information in a place and format from where it can easily be transferred.

There is power in simplicity. The more familiar individuals are with the tools they use, the more effective they will be when they use them. Any disaster management business tool must be integrated into everyday activities, so that use of the technology during an emergency event does not require a steep learning curve. Ease of use is critical to any incident and disaster management system. There is no time to learn a new user interface when an emergency strikes.

### **Practical tricks of the trade**

In this section short problem-solution narratives are supplied which will be illustrated more graphically during the presentation of the paper.

Problem: Needing to get local information from local officials on vulnerable areas, but cannot visit them.

Solution: Google Earth, Outlook and Paint. Drawing geographic features on a map backdrop with Powerpoint or even Paint.

Problem: Maintaining an Occurrence Book / Incident Log.

Solution: Word and Excel

Problem: Navigating quickly in multi-page documents.

Solution: They say we are better at looking things up from an overview and then zooming in - instead of working in a series. Try Ctrl+turn wheel on a Word Document. Use styles and generate tables of contents. Use hyperlinks inside the document. Use cross-referencing inside documents.

Problem: Communication

Solution: Skype, Instant Messaging, MS Groove. MS Sharepoint, MXIT, Fax machines and fax servers

Problem: Modelling and simulation of evacuation from mass event venues

Solution: Excel – stadium evacuation calculation

Problem: Researching hazards, vulnerability and capacity

Solution: The internet: Google Scholar, Google Books, Wikipedia

Problem: Comparative risk assessment and risk prioritization

Solution: In order to do a risk assessment, you need to do a risk assessment. Software can only support you. A spreadsheet can be used with a risk assessment matrix.

Problem: Recording and representing institutional capacity

Solution: The trusted organigram – drawn in Word or Powerpoint.

Problem: Impact assessment:

Solution: The trusted hard-copy form. Word and Excel forms. online forms.

Problem: Monitoring. Can you smell when hazards change? If not, why should an IT system? If nobody tells it things are changing, it won't know. This "telling" can happen through human interaction or from automated instruments.

Solution: SCADA Systems, E-mail and SMS, Graphs and charts from Excel,

Problem: Quick and efficient early warning via the media

Solution: Predefined message templates to which a minimum of information needs to be added, e-mailed and faxed to the media.

Problem: Finding something in a document.

Solution: Search function

Problem: Sharing big documents or documents containing intellectual property.

Solution: Portable Document Format (PDF).

Problem: Accurately recording large numbers of telephone numbers and being able to search and sort contacts and their numbers.

Solution: Data input format standardization – noting that 10 comes before 5.

Problem: Getting to know GIS

Solution: ArcExplorer for Education

AS said already, the above problems and solutions will be dealt with in more detail and with illustrations and examples in the presentation of this paper. In the next section some productivity tricks for Microsoft products are mentioned.

## **Microsoft tricks**

If one wants to work more efficiently in Microsoft Word, Excel, or Internet Explorer, the key is using programmed shortcuts. On the following pages a few of these programmed shortcuts are highlighted.

Driving around your desktop

To...	Use this shortcut
Select a file/folder/icon	Type the first letter of the file. If you have several files starting with the same letter, continue hitting the letter key until your cursor lands on the file or folder you want.
Search for a file/folder	F3
Rename a file/folder	Select the file/folder, click F2, and then re-type the name
Find out when the file or folder was created, by whom, and how big it is	Select the file, right-click, and then click <b>Properties</b>
Display the Start menu	Ctrl + Esc
Create a shortcut on your desktop to your favorite file/folder	Drag the file/folder icon to your desktop
Scroll between open items	Alt + Tab, then hold down Alt while clicking Tab to reach the desired file or program

Working with Word

To...	Use this shortcut
Select text	Shift + Right Arrow, Left Arrow, Up Arrow, or Down Arrow to highlight text
Copy selected text	Ctrl + C
Cut selected text	Ctrl + X
Paste selected text	Ctrl + V

To...	Use this shortcut
Undo your last action	Ctrl + Z
Select all the text within your document	Ctrl + A
Bold text	Ctrl + B
Italicize text	Ctrl + I
Underline	Ctrl + U
Decrease font size	Ctrl + Shift + <
Increase font size	Ctrl + Shift + >
Change font	Ctrl + Shift + F, then use the arrow keys to reach the new font
Change font size	Ctrl + Shift + P, then use the arrow keys to reach the new font size
Create page break	Ctrl + Enter
Create new document	Ctrl + N
Open My Documents window	Ctrl + O
Close a document	Ctrl + W
Save a document	Ctrl + S
Print a document	Ctrl + P
Preview what you're about to print	Alt + Ctrl + I

### Accelerating Excel

To...	Use this shortcut
Move right to left, cell by cell	Tab
Move up and down, cell by cell	Enter

To...	Use this shortcut
Erase data in current cell	Backspace
Return to the beginning of the row	Home
Enter the date	Ctrl + ; (semicolon)
Enter the time	Ctrl + Shift + : (colon)
Start a formula	= (equal sign)
Check the spelling of titles or words within the cells	F7
Find out about the style within the cell	ALT + ' (apostrophe)
Display the Format Cells dialog box	Ctrl + 1
Apply the general number format	Ctrl + Shift + ~
Turn numbers into dollars	Ctrl + Shift + \$
Make numbers a percentage	Ctrl + Shift + %
Apply a border	Ctrl + Shift + &

### Expediting Internet Explorer

To...	Use this shortcut
Add sites to your Favorites	<ul style="list-style-type: none"> <li>• Go to the site.</li> <li>• Hit Ctrl + D to add to your Favorites.</li> <li>• Select <b>Favorites</b> and then <b>Add to Favorites</b> to create a separate folder for the site or to add it to a list already formed.</li> </ul>
Select a home page	<ul style="list-style-type: none"> <li>• Go to the Web page that you would like to make your home page.</li> </ul>

To...	Use this shortcut
	<ul style="list-style-type: none"><li>• Open the <b>Tools</b> menu and select <b>Internet Options</b>.</li><li>• Under <b>Home page</b>, click <b>Use Current</b>.</li></ul>
Use the History function if you visit a few select sites constantly	<ul style="list-style-type: none"><li>• Select the <b>History</b> button on your top navigation (a green arrow on a clock face).</li><li>• Select the site that you would like and double-click.</li><li>• If the <b>History</b> button is not visible, go to the <b>View</b> menu, select <b>Explorer Bar</b>, and then click <b>History</b> to access.</li></ul>
Customize your toolbar to the tools you use most frequently	<ul style="list-style-type: none"><li>• Right-click your top navigation.</li><li>• Select the icons that you use or go to the <b>View</b> menu, select <b>Toolbars</b>, and then click <b>Customize</b>.</li></ul>

## Summary and Conclusion

In this paper some practical tricks of the Disaster Management trade, specifically aimed at the business tools used to execute the Disaster Management business process, was highlighted.

The success of systems are largely dependent on the human element, which represents a 70% stake in systems. It is important for Disaster Management staff to understand their business processes and to be able to execute these business processes with simple, almost manual systems, before moving on to more sophisticated systems.

Disaster Management workers should endeavour to become “power users” of standard business tools as this will enable them to unlock more of the potential of these tools.

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