

Final Report on
**RUN and GROW E-Learning Toolbox – Understanding
Internet usage in Australian business**
for the Department of State and Regional Development (DSRD)

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Introduction

University of Western Sydney was commissioned by the Department of State and Regional Development (DSRD) to undertake a research on Internet usage amongst small businesses in Australia, develop, deploy and manage a series of online interactive training modules targeting small business '**RUN**' and '**GROW**' stages of business. The modules form a toolbox that enables business owners to improve their skills and knowledge to enhance their business performance. The e-learning toolbox gives business owners practical and relevant information that can be immediately applied to their businesses. In addition, the toolbox provides a business portal to assist owners in` searching and interfacing with relevant online and offline resources.

Objectives: This project was undertaken based on four objectives:

1. Research small business **RUN** and **GROW** requirements and map to complementary online service providers.
2. Develop interactive 12 training modules subject to your approval, to fulfil small business requirements in the **RUN** and **GROW** stages of business. Module development and deployment to be staged based upon priority areas of most need.
3. Host the online system with monitoring and management of the training modules.
4. Evaluate and report the outcomes from the program and **RUN** and **GROW** e-learning modules.

Project scope: The project was broken into several phases. The first phases explored the RUN and GROW requirements of small business and map their needs to the existing services available (such as ASIC, AusIndustry, NSW Fair Trading and ATO) and industry resources (such as BECs and industry associations).

Understanding available services will enable the training modules to leverage existing services by complementing available online resources. Currently, the internet offers small business an extensive array of information that is often confusing and difficult for the small business owner to navigate and synthesise. In addition, much of the information is state and country specific. The modules will feature content that is targeted to the needs of NSW small business.

Based upon the research, the second phase established the online training modules using proven andragogy and incorporating the following features:

- Defined learning outcomes in terms of skills, knowledge and application.
- Design modules using proven andragogical processes by engaging adult learners in an online interactive problem-based learning experience. Where appropriate, content will reflect the Australian Quality National Training Framework guidelines.
- Integrated content delivery system combining text with visual stimuli and prompts
- Government service navigation map with 'deep' links to interface with appropriate government and industry service providers.
- Targeted images to balance 'look and feel' of the site.
- Downloadable audio commentary of all modules
- Video featuring small business owners to support all modules
- Knowledgebase of user comments and feedback
- Three levels of assessment to evaluate learner skills, knowledge and application

The scheduled online modules are outlined in Table 1.

Table 1

Online module development and deployment schedule

RUN	Module	Additional interactive items	Released date	
1	Surviving the crisis	Survival plan builder Survival plan checklist	30	September 2009
2	E-business	E-business plan builder Survival plan checklist	30	September 2009
3	Customer relationship management (CRM)	CRM checklist	30	September 2009
4	Operations management	Operational plan builder	30	December 2009
5	Supply chain management	Supply chain management checklist	30	December 2009
6	Quality management	Quality management plan builder	30	December 2009
GROW	Module	Additional interactive items	Release date	
7	Strategic management	Strategic management plan builder Strategic plan checklist	30 March 2010	
8	Innovation management	New product, service or process development checklist New product, service or process development plan builder	30 March 2010	
9	Managing growing organisations	Managing organisation checklist	30 March 2010	

10	International marketing	International marketing plan builder International marketing plan checklist	30 June 2010
11	Risk management	Risk management plan builder Risk management checklist	30 June 2010
12	Succession planning	Succession plan builder Succession plan checklist	30 June 2010

The RUN and GROW modules

Each interactive tutorial module has the following structure:

- Five chapters per tutorial, with learners taking approximately 15 minutes to complete each chapter.
- Chapters to cover identified learning outcomes for the tutorial using a 'build-block' approach to develop the learner's knowledge and skills through 'chucking' of key concepts
- Hypertext links will be used to direct learners to relevant complementary websites for greater detail as applicable
- Learner test their knowledge through online testing at the completion of each chapter
- Chapters to feature text, images, audio, and video and text case studies.
- Video to highlight small business managers and/or owners discussing their own experiences on the relevant topic area

As this is a schematic outline of a typical tutorial module, developments may occur and as a result, changes may be required. The Steering Committee's approval required prior to changing the structure and/or content.

Phase 2 of the research is to host, monitor and maintain the Small Business E-Learning Toolbox for the 2009-2010 calendar years. Monitoring and maintaining the site include:

- Hosting on a dedicated fully managed server
- Using web metrics to enhance search engine marketing (SEM)
- Quarterly reporting on user activity and satisfaction
- Surveying users to identify user satisfaction and unmet needs

Phase 3 evaluated and reported the outcomes from the pilot program **RUN** and **GROW** modules through research into user demographics, behaviour, and attitudes to guide future online training and policy development.

Milestones: The following milestones are listed to guide the project's development

- 1 July 2009 Commence project
- 30 July 2009 Completion research
- 30 September 2009 Completion first 3 modules
- 30 December, 2009 Completion of 6 modules
- 30 March, 2010 Completion of 9 modules
- 30 June, 2010 Completion of 12 modules
- 20 July, 2010 Final research report

Intellectual property arising from research activity: NSW Department of State and Regional Development and University of Western will jointly own the intellectual property (IP) that arises from this project. Each party may use the IP for their own purposes without consultation with the other party. UWS holds the right to publish, in peer review media, the research arising from this project, mindful of the commercialisation or confidentiality constraints of this research. All research conducted for this project will be subject to ethical standards as approved by the University of Western Sydney's ethical standards committee. Small business is a

research area of significant interest to UWS and therefore we would welcome the opportunity to continue to work together and share IP.

Phase 3 evaluation findings

The outcomes from the pilot program ***RUN*** and ***GROW*** modules are evaluated and reported here.

1. Introduction

The use of Internet by businesses has grown rapidly in recent years. Most enterprises use the Internet to seek valuable information resources that can be used to enhance business performance. The primary aim of this study was to investigate the extent small and medium sized enterprises (SMEs) in New South Wales (NSW) utilize the Internet to seek business related information. In order to achieve this objective, the following questions were explored:

1. What are the primary issues that hinder SMEs in NSW from using the Internet?
2. How does business environment influence Internet usage in SMEs?
3. What form of attitude is prevalent toward Internet usage amongst SMEs?
4. To what extent do SMEs in NSW use the Internet for work purpose?
5. What business related benefits do SMEs gain by using the Internet?

2. Research approach

The Technology Acceptance Model (TAM) (Davis, 1989) has been used as the theoretical foundation of this study. A modified TAM based research model initially proposed in the study is given in Figure 1.

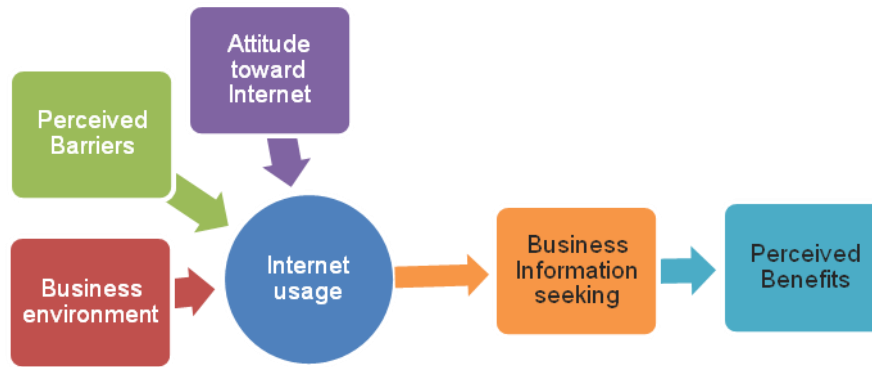


Figure 1: Initial research model

2.1 Data collection

A two page survey questionnaire was deployed to a sample of 3,000 SMEs in New South Wales in July 2009. A total of 266 respondents took part in the first phase of the survey. The second phase of the survey involved an online survey, which was deployed in early September 2009. About 55 SMEs took part in this round, which adds up to a total of **321 respondents**. This represents a rate of return of 10.7%.

2.2 Analysis approach

Three types of statistical analysis have been undertaken in this study.

- a) The first analysis explores the demographic profiles of the responding firms.
- b) This is followed by a discriminant analysis. The primary motive here is to examine the significance of each question within each construct. The questions with a mean score value of 3.00 and above are statistically significant.

- Construct 1 - Attitude toward Internet (14 questions)
- Construct 2 – Business environment (12 questions)
- Construct 3 – Perceived barriers in using the Internet (12 questions)

- Construct 4 – Business information (17 questions)
- Construct 5 – Perceived benefits (15 questions)

c) The third analysis involves validating the proposed research model using the Partial Least Square (PLS) modeling technique. This was done to ascertain whether Constructs 1 – 3 have individual influence on the Internet usage or if they are complementing each other (combined influence).

3. Key findings

3.1 Demographic profiles of participants

Table 2 shows the summary of frequency analysis for demographic profiles

Demographics	Items	Frequency	Percentage
Gender	Female	186	56
	Male	131	41
Year born	Before 1964	156	48
	1965 – 1980	128	40
Education qualification	1981 – 1994	20	6
	1995 & above	1	0.3
	Certificate/Diploma	102	31
	Bachelor's degree	94	29
Current role in business	High school	69	22
	Post-graduate degree	46	14
	Owner-operator	255	79
	Executive employees	37	12
Years in current role	Non-executive employees	18	6
	Less than 3 years	162	51

	More than 5 years	77	24
	Between 3 – 5 years	46	14
Description of customers	Both consumers and businesses	137	42
	Consumers	107	33

	Businesses	64	20
Description of business			
	Sole trader	168	52
	Company	89	27
Description of business type			
	Partnership	39	12
	Other	16	5
Age of business			
	Service	206	71
	Culture & leisure	15	5
Number of full-time employees			
	Retail	15	5
	Agriculture	13	4
Annual turnover			
	Manufacturing	12	4
	Construction & Mining	11	3
Usage of Internet for work purpose			
	Less than 3 years	141	43
	More than 5 years	105	32
	Between 3 – 5 years	38	12
	Less than 5 employees	177	55
	Between 5 – 20 employees	13	4
	More than 21 employees	12	3.7
	Less than 100k	198	62
	Between 100 – 500k	60	18
	Between 500k – 1 m	20	6
	More than 1m	28	8
	Between 3 – 10 hours per week	99	30
	Between 11 – 20 hours per week	65	20
	More than 21 hours per week	56	17
	Less than 3 hours per week	49	15

The analysis on respondents' demographics can be segmented into three areas: the responding person's personal profile, the firm's profile and Internet usage in work trend.

3.1.1 Personal profile

Analysis on the personal profile of the person who took part in the survey (representative of the firm) is vital to determine the quality of the responses being provided.

More female (56%) has taken part in the survey as opposed to male (41%), with majority of them being born before the year 1964 (48%) and between the years 1965 to 1980 (40%). Most of the participants possess certificate or diploma qualifications (31%) while another 29% of them possess bachelor's degree qualification.

Most of the respondents are owner-operator of the firm (79%) while 12% of the responding persons are executive employees. A small percentage of the respondents (6%) are working in non-executive positions. Most of the respondents seem to be in their present role for less than 3 years (51%), indicating strong presence of new SME start-ups, as it was seen earlier that majority of them are owners of their business. On the other hand, almost half of the respondents (24%) have more than 5 years of experience.

3.1.2 Firm profile

A large proportion of the responding firms (42%) are doing business with consumers and businesses, an interesting scenario as majority of them (52%) are sole traders as opposed to 27% firms with 'company' status. Firms involved in service based

business (71%) are the majority from a sample size of 321 SMEs, with vast number of them again indicating being in business for less than 3 years (43%). Clearly most of the firms are small in size (55%) as they have less than 5 employees, with less than \$100,000 in annual sales turnover (62%).

3.1.3 Internet usage in workplace

Greater part of the responding firms is using the Internet between 3 to 10 hours per week (30%). About 20% of them are using the web between 11 to 20 hours per week, while 17% are using it for more than 21 hours per week. This is followed closely by firms using the Internet for less than 3 hours per week (15%).

3.2 Discriminant Analysis

The analysis for the significance of the questions posed to the SMEs was carried out for the five constructs as per earlier discussion. Table 2 – 6 presents the findings of the discriminant analysis.

3.2.1 Attitude toward Internet

The analysis for *Construct 1: attitude toward Internet* indicate that all 14 questions are statistically significant as their mean score values are greater than 3.00. Three questions have received the highest mean scores: Q19 “*I can use the Internet in a manner that I can get information I need*” (Mean = 4.18, SD = 0.79), Q25 “*I like to use the Internet*” (Mean = 4.16, SD = 0.87) and Q21 “*In general, I find the Internet easy to use*” (Mean = 4.11, SD = 0.90). These three questions could possibly indicate that the Internet is viewed as a valuable and user-friendly information seeking channel by the sample SMEs.

Table 2: Attitude toward Internet

No.	Question	Mean score	Std Deviation
19	I can use the Internet in a manner that I can get the information I need	4.18	0.79
25	I like to use the Internet	4.16	0.87
21	In general, I find the Internet easy to use	4.11	0.90
14	Using the Internet enables me to accomplish my tasks more quickly	4.09	1.02
18	Learning to use the Internet is easy for me	4.08	2.48
26	It is pleasure for me to use the Internet	4.02	3.08
27	It is desirable for me to learn how to use the Internet	4.01	0.96
23	I obtain helpful online information to support my tasks	4.00	0.86
20	My interaction with the Internet is clear and understandable	3.94	0.93
24	I have available online information in doing my tasks	3.91	2.53
22	I collect timely online information to meet my tasks requirements	3.83	0.96
15	Using the Internet improves my performance when doing my job	3.81	1.07
17	Using the Internet increase my effectiveness when doing my work	3.80	1.06
16	Using the Internet increase my productivity when doing my work	3.71	1.11

3.2.2 Business environment

The analysis for business environment construct led to the elimination of four questions (Q29, Q39, Q32 and Q33) due to lower than 3.00 mean score values. Q28 “*Our average industry pre-tax profits is very low*” (Mean = 3.53, SD = 0.975) received significantly high mean score than the rest of the questions, which received mean score values ranging between 3.10 – 3.30.

Table 3: Business environment

No.	Question	Mean score	Std Deviation
28	Our average industry pre-tax profits is very low	3.53	0.975
36	Our production technology is well established	3.27	0.914
35	Demand and consumer tastes are fairly easy to predict	3.21	0.949
34	Actions of our competitors are easy to predict	3.16	0.859
30	Our market growth for the last 3 years is very slow	3.16	1.113
29	Our projected long term (5 years or more) industry profits is very low	3.13	0.998
38	Our environment offers rich investment and marketing opportunities	3.13	0.965
37	Our external environment is very safe for our survival and well-being	3.12	0.998

3.2.3 Perceived barriers

Six questions related to perceived barriers to use the Internet received lower than 3.00 threshold mean scores, thus eliminated from the discussion. The most prioritized barrier hindering Internet usage is Q51 “*There is a possibility for decreased productivity through frivolous use*” (Mean = 3.35, SD = 1.07). The other

barriers are related to Internet security related issues with mean scores ranging from a low of 3.04 to 3.13.

Table 4: Perceived barriers in using the Internet

No.	Question	Mean score	Std Deviation
51	There is a possibility for decreased productivity through frivolous use	3.35	1.07
47	There is a possibility for unauthorized access to internal networks	3.13	1.08
46	We are concerned about security hazards	3.12	1.27
48	There is a possibility for tampering with network messages	3.10	1.03
49	There is a possibility for interception of network messages	3.09	1.01
50	There is limited verification of authorship of messages	3.04	0.97

3.2.4 Type of Business information

A total of 17 questions were established under the type of business information construct. Five questions have mean score lower than the threshold value, thus eliminated from further discussion. Information on education and training, marketing, pricing, taxation and regulatory seem to be highly preferred by the sample SMEs. In particular, Q54 “*I seek education and training information from the Internet*” (Mean = 3.92, SD = 0.86), Q55 “*I seek marketing information from the Internet*” (Mean = 3.85, SD = 0.94) and Q67 “*I seek pricing of goods & services information from the Internet*” (Mean = 3.72, SD = 1.59) received very high mean scores.

Table 5: Type of business information sought from Internet

No.	Question	Mean score	Std Deviation
54	I seek education and training information from the Internet	3.92	0.86
55	I seek marketing information from the Internet	3.85	0.94
67	I seek pricing of goods & services information from the Internet	3.72	1.59
63	I seek taxation information from the Internet	3.71	1.01
60	I seek regulatory information from the Internet	3.70	0.99
58	I seek government policy updates from the Internet	3.63	1.04
57	I seek local business area updates from the Internet	3.51	1.05
56	I seek economic updates from the Internet	3.39	1.10
59	I seek benchmarking information from the Internet	3.36	1.03
53	I seek strategic management information from the Internet	3.26	1.07
61	I seek corporate governance information from the Internet	3.11	1.10
62	I seek corporate social responsibility information from the Internet	3.06	1.07

3.2.5 Perceived benefits

In the context of perceived benefits, all the questions have received mean score values of more than 3.00. Q71 “*Distance related barriers disappears*” is perceived as one of the most significant benefit gained from using the Internet (Mean = 4.20, SD = 0.77). Similarly, Q80 “*Availability of knowledge regardless of location*” (Mean = 4.13, SD = 0.74) and Q81 “*Better information to customers*” (Mean = 4.01, SD = 0.84) are also perceived very highly by the responding firms. All the other questions received mean score of more than 3.50.

Table 6: Perceived benefits of using the Internet

No.	Question	Mean score	Std Deviation
71	Distance related barriers disappear	4.20	0.77
80	Availability of knowledge regardless location	4.13	0.74
81	Better information to customers	4.01	0.84
75	Effective information collection	3.98	0.77
73	Continuous advertising all around the world	3.98	0.90
72	Improvement in company image	3.96	0.82
78	Possibility of reaching international markets	3.87	1.02
76	More customer service	3.72	0.94
74	Increase sales	3.68	0.89
79	Better consciousness business environment	3.65	0.88
83	Better support and service by suppliers	3.59	0.95
84	Faster and more flexible delivery suppliers	3.55	0.96
77	Increased customer satisfaction	3.54	0.93
85	Lower costs acquiring supplies	3.53	0.98
82	Increased productivity	3.53	0.92

3.3 Partial Least Square modeling

Completion of the previous two analyses enabled continuation of the PLS modeling analysis. This approach generally conducts simultaneous relationships between multiple predictors and one dependent factor. The key idea here is to determine the effect of independent factors (Construct 1 to 4) on the dependent factor (Construct 5). The analysis will also enable validation of the proposed model earlier, by providing a more clear and understandable relationship between different factors. Such identification can enable policy-makers to determine key areas of focus for remedial and/or improvement purpose.

In the context of this study, PLS modeling was carried out in multiple dynamics and iteration process. The result indicates that Construct 2 (Business Environment) has insignificant relationship with Internet usage. Thus this construct will not be helpful in future policy-making process as it is deemed as unimportant or little effect.

Another interesting result obtained via PLS is that the original model does not hold true. Although there exist a multi-tier relationship between the constructs, Construct 3 (Perceived barriers) however seems to have significant impact on Construct 1 (Attitude toward Internet) as opposed to Internet usage. Construct 1 in turn impacts Internet usage in workplace, which then relates to Construct 4 business information seeking. Construct 4 subsequently impacts Construct 5 (Perceived Barriers) (dependent factor). Also it needs to be highlighted here that the PLS analysis showed formation of two types of information being sought after by the sample SMEs using the Internet – (1) *Corporate and Regulatory* information and (2) *Training and Marketing* information.

Figure 2 depicts the new conceptual model that relates SMEs' usage of the Internet to seek business information.

In sum, the empirical finding suggests formation of the following new and improved research model for future research initiatives.

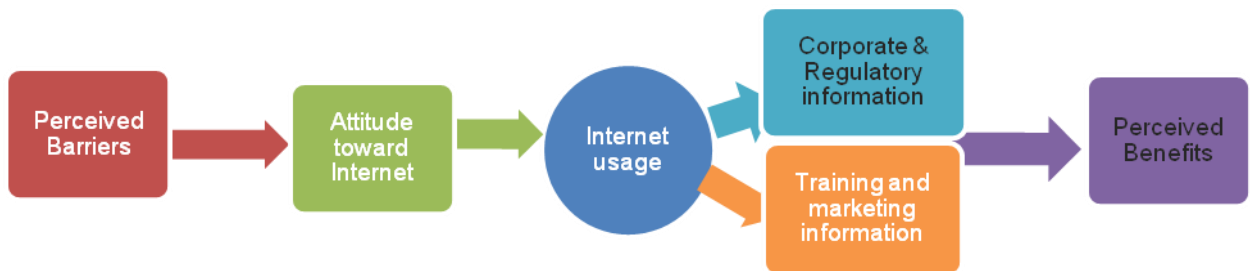


Figure 2: New conceptual model