



Institute of Actuaries of Australia

# 4th Financial Services Forum

*Innovation in Financial Markets*

19 and 20 May 2008 – Melbourne

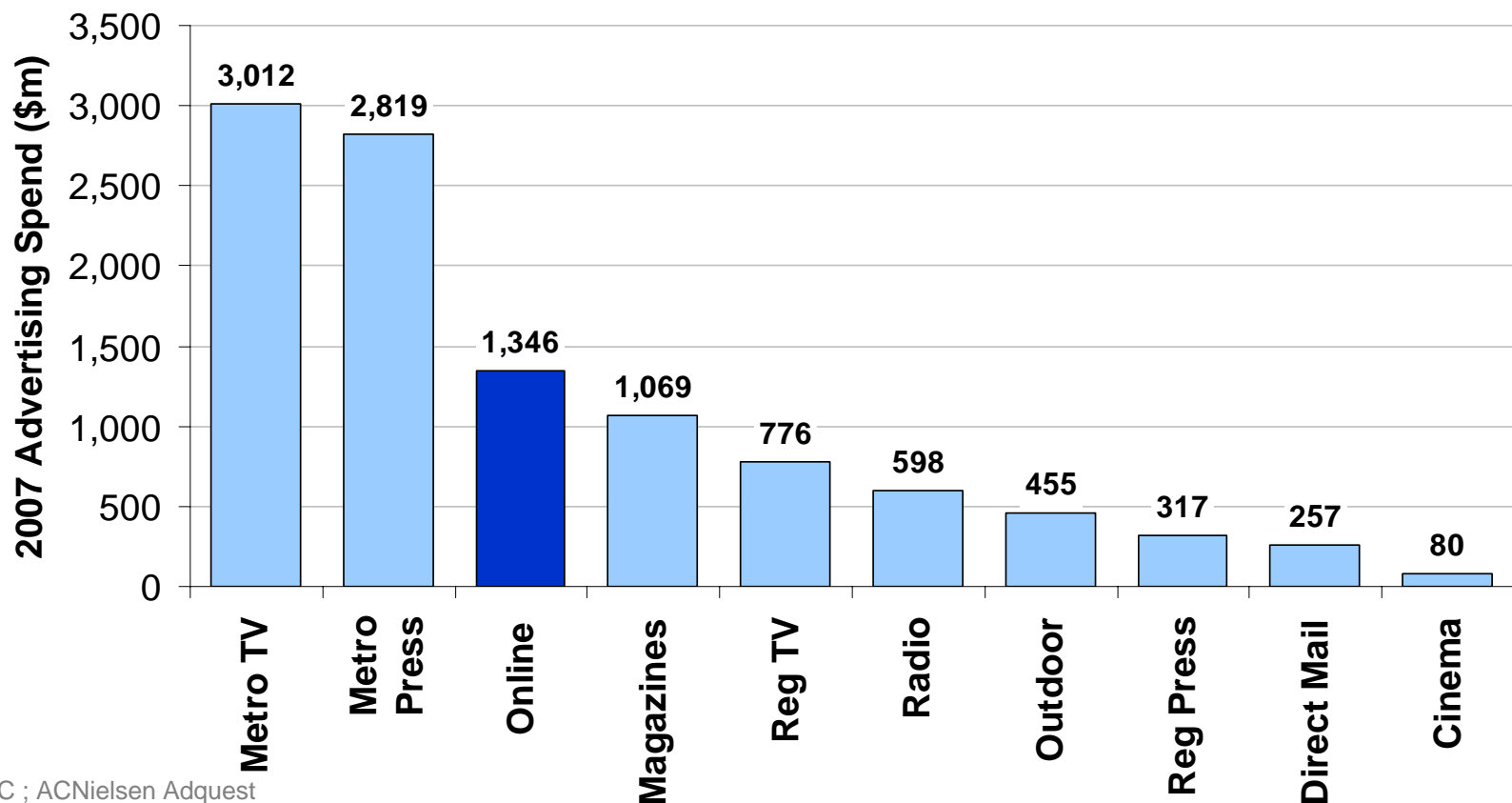
## An Actuarial Approach to Internet Search Optimisation

**Victor Bajanov**



# Online accounts for 12% of total advertising spend in Australia

Estimated Advertising Spend by Channel 2007



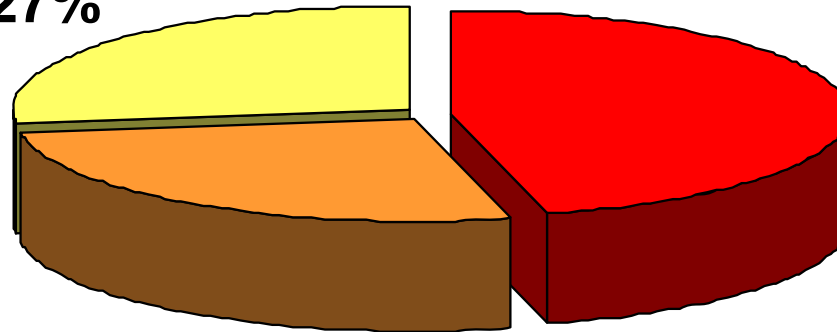


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# Search is the biggest category within online

**General  
Display,  
\$367m, 27%**



**Search and  
Directories,  
\$622m, 46%**

**Classifieds,  
\$357m, 27%**





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## Banner / Inset advertisement

**FairfaxDigital**

NEWS | MYCAREER | DOMAIN | DRIVE | FINANCE | MOBILE | RSVP | TRAVEL  
network map | member centre

Now: 20°C Min: 12°C  
Clearing shower  
Full details

**smh.com.au**  
The Sydney Morning Herald

**Bruce Wolpe**  
Hillary, West Virginia  
and history's cruel ironies [Read more](#)

National | World | Opinion | Business | Technology | Sport | Entertainment | Life & Style | Travel | Auto | Jobs | Real Estate | Dating

**4:32PM** Thursday May 15, 2008 [Make the SMH my home page](#) [Show site sections +](#)  [GO](#)

### I'M SO GOOD

**Amy Winehouse and drugs: some good news**  
Troubled singer won't face charges over video footage that allegedly shows her taking drugs.

### 'Go burn in hell'

**BELLINDA KONTOMINAS 3:58pm** | Family's relief as man who beat and doused Lauren Huxley in petrol and left her for dead is found guilty.

### Deadly dawn breaks in Berowra home

**DANIEL EMERSON 12:44pm** | Mother found stabbed to death and two of her children wounded, one critically.

### MPs pledged vote on power sale

**3:44pm** | NSW Premier pushes legislation for power industry sale through cabinet.

### Moonlight uncovers Blair Athol's secret

**ARJUN RAMACHANDRAN 10:01am** | Operation Moonlight busts fourth house in Sydney's cannabis hotspot.

### Grisly re-enactment at The Gap

**KATE MCCLYMONT 11:54am** | Lawyers in Caroline Byrne murder trial watch mannequin re-enactment. [Video](#)

### Breaking News

4:21PM Myanmar says constitution approved by ...  
4:17PM Blast kills 18 Afghan police, civilians

### Shop smarts

**Beauty Beat** Do hard-sell tactics at the cosmetics counter intimidate you into buying more than intended? [Prev](#) [Next](#)

### Video news

**Exclusive - drama at the Gap**

- Shocking quake video surfaces
- Axe massacre shocks Austria
- China's grief grows by the day

Advertisement

**Exclusivity is...**

▶ a credit limit up to \$100,000\*

[Apply now ▶](#)




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## Classifieds





Where Australians buy and sell online™

[Home](#) [Buy](#) [Results](#) [Sell](#) [My Trading Post](#) [Community](#) [Help](#) [Hello, Log in or Register for free.](#)




**Search:**  All Sections All States GO [Search Tips](#)

**Refine Your Search**  
Search by:  
☒ Make / Model  
☐ Body Style  
Make  
☒ BMW (2090)  
☐ Cadillac (2)  
☐ Chevrolet (95)  
☐ Chrysler (418)  
Model  
☒ 318i(568)  
☐ 318is(93)  
☐ 318ti(18)  
☐ 320i(2)  
☐ 4WD Only  
☐ 2 Doors Only  
Year  to Year   
[More Search Options](#)  
Keyword  
  
Price  
Min \$   
Max \$



**569 Results** for: [Automotive](#) > Used Cars BMW (318i)  
[All States]

Sort by: Priority Ads Page 1 of 26

	<a href="#">Compare</a>	<a href="#">Item</a>	<a href="#">Kms</a>	<a href="#">Year</a>	<a href="#">Location</a>	<a href="#">Seller</a>	<a href="#">Price</a>
<input type="checkbox"/>		<a href="#">BMW 318i</a> automatic	293,000	1993	NSW	Private	\$6,500
Fresh							
<input type="checkbox"/>		<a href="#">BMW 318i</a> manual sedan	134,000	2000	SA	Private	\$17,800
Fresh							
<input type="checkbox"/>		<a href="#">BMW 318i</a>			NSW	Private	\$19,500





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# Advertising in online search

Web Images Maps News Video Gmail more ▼

[Sign in](#)





[Advanced Search](#)  
[Preferences](#)

Search: ☒ the web ☐ pages from Australia

Web

Results 1 - 10 of about 55,900,000 for [car insurance](#). (0.06 seconds)

## [Car Insurance](#)

[www.budgetdirect.com.au](http://www.budgetdirect.com.au) You Could Save \$100's with our Multi Award Winning **Car Insurance**

## [Real Car Insurance](#)

[realinsurance.com.au](http://realinsurance.com.au) Save extra 5%! 10% cash back after 3 yrs claim-free. Learn more.

## [Bingle Car Insurance](#)

[Bingle.com.au/Car-Insurance](http://Bingle.com.au/Car-Insurance) Bingle rewards good drivers with big premium discounts. Get a quote.

Sponsored Links

Sponsored Links

## [Allianz Car Insurance](#)

Up to 20% discount - **car insurance**  
2 minute quote online.  
[www.allianz.com.au](http://www.allianz.com.au)

## [NRMA Car Insurance](#)

Surprise yourself today!  
Get a competitive estimate online.  
[www.nrma.com.au/car-insurance](http://www.nrma.com.au/car-insurance)

## [GIO Car Insurance](#)

For Comprehensive **Car Insurance** At  
A Competitive Price Visit GIO Today  
[www.gio.com.au](http://www.gio.com.au)  
New South Wales

## [eCar Insurance](#)

Fast and easy **car insurance**.  
Managed by you online 24/7!  
[www.ecarinsurance.com.au](http://www.ecarinsurance.com.au)

## [Just Car Insurance](#)

Specialist **car insurance** for young  
drivers and high performance cars!

## [Compare Car Insurance QUOTES : Insure Cheap cover - Captain ...](#)

Compare the cheapest **car insurance** in Australia for NRMA, RACQ, ING, RACV, FAI.  
Australias stop for cheap **car insurance**.  
[www.captaincompare.com/](http://www.captaincompare.com/) - 34k - [Cached](#) - [Similar pages](#)

## [Car Insurance - 1Cover Australian Cheap Online Auto Car Insurance ...](#)

1Cover **Car Insurance** Australia offer cheap comprehensive & 3rd party quotes & cover.  
1Cover's tailored auto **insurance** policies mean cheaper **car insurance** ...  
[www.1cover.com.au/car/](http://www.1cover.com.au/car/) - 24k - [Cached](#) - [Similar pages](#)

## [Car Insurance Australia - Young Drivers and Womens Car Insurance ...](#)

Just **Car** offers **car insurance** for young drivers, womens **car insurance** and owners of high  
performance and modified cars. Get your online **insurance** quote now!  
[www.justcarinsurance.com.au/](http://www.justcarinsurance.com.au/) - 20k - [Cached](#) - [Similar pages](#)

## [Car Insurance, Life, Business & Home Insurance](#)



## Remuneration for search providers

- Positions sold by Vickrey auction at a price *per click*
- Provider aims to maximise revenue, i.e.  
$$(\text{Bid Value}) \times (\# \text{ Clicks})$$



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# Measuring effectiveness

- Manual judgement





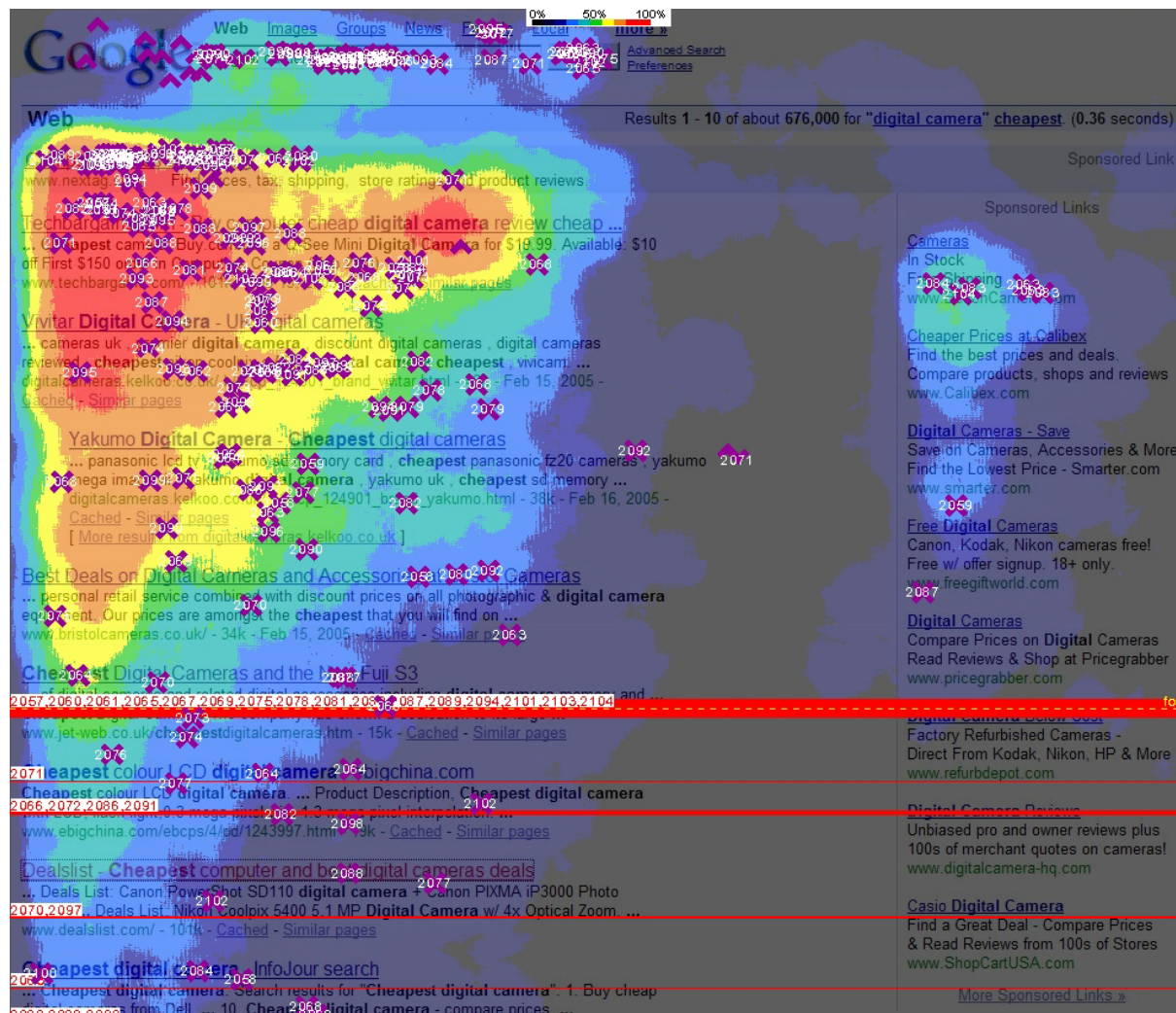
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## Measuring effectiveness - Eyescan





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# Measuring effectiveness

- Average cost per
  - click
  - application
  - sale



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# Measuring effectiveness - shortfalls

- No visibility of what customer sees
- Slow reaction to competitor movements





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## SearchScan

☒ Organic ☒ Sponsored

Start Date

06/08/2007

End Date

07/08/2007

Update

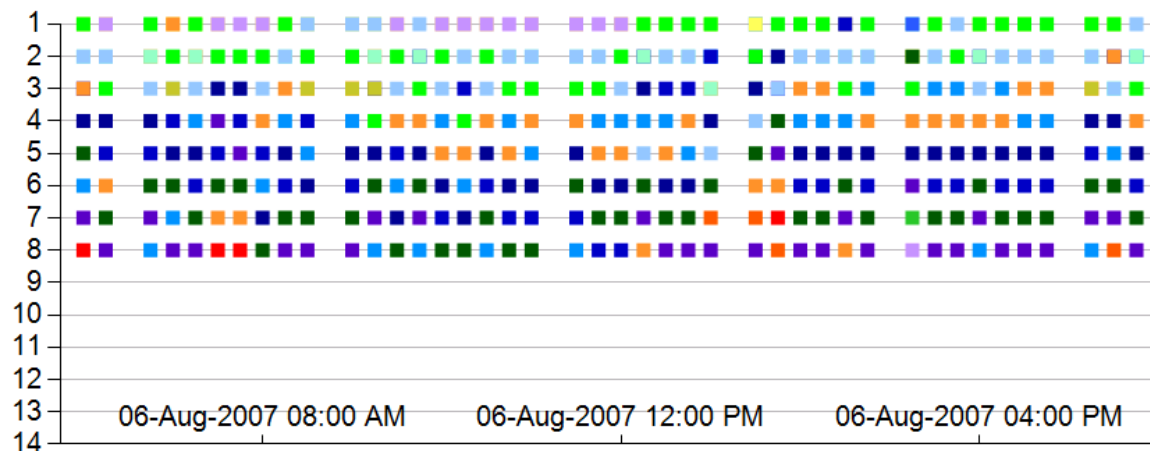
Share Of Voice Keyword Rank Creative

Credit card

Organic

Sponsored

### Rank By Time



Get Keyword





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☒ Organic ☒ Sponsored

Start Date

06/08/2007

End Date

07/08/2007

Update

Share Of Voice

Keyword Rank

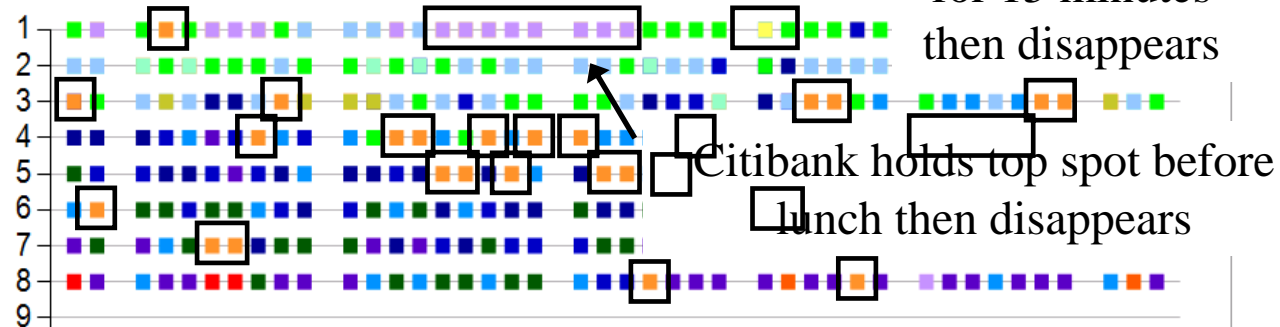
Creative

Credit card

Organic

Sponsored

Rank By Time



- |                            |                  |                  |
|----------------------------|------------------|------------------|
| ■ 180 Business Loans       | ■ Bluestone      | ■ HSBC           |
| ■ American Express         | ■ CBA            | ■ My Rate        |
| ■ ANZ                      | ■ Citibank       | ■ NAB            |
| ■ Aussie Best Loans Centre | ■ Credit Card 4u | ■ Other          |
| ■ Bank Account 4u          | ■ Credit Mart    | ■ Personal Loans |
| ■ Bankwest                 |                  |                  |

Get Keyword



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☒ Organic ☒ Sponsored

Start Date

06/08/2007

End Date

07/08/2007

Update

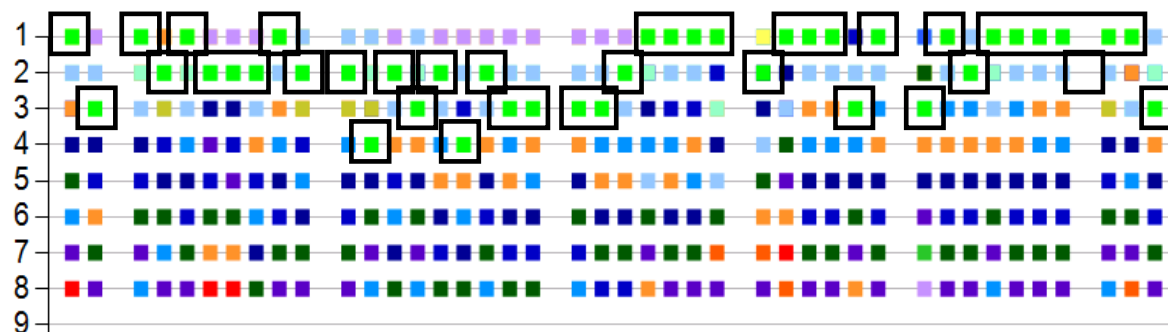
Share Of Voice Keyword Rank Creative

Credit card

Organic

Sponsored

Rank By Time



NAB appears to be consistently holding a top three ranking

- |                            |                  |                  |
|----------------------------|------------------|------------------|
| ■ 180 Business Loans       | ■ Bluestone      | ■ HSBC           |
| ■ American Express         | ■ CBA            | ■ My Rate        |
| ■ ANZ                      | ■ Citibank       | ■ NAB            |
| ■ Aussie Best Loans Centre | ■ Credit Card 4u | ■ Other          |
| ■ Bank Account 4u          | ■ Credit Mart    | ■ Personal Loans |
| ■ Bankwest                 |                  |                  |

Get Keyword



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## More sophisticated analysis

- Data from SearchScan combined with Actuarial modelling techniques measures the effect of
  - different advertisement text
  - different times of day/days of week
  - bid amounts vs. competitors



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## Overall strategy

- Search is just one of many channels, but it is important to consider the entire advertising strategy
  - TV
  - Radio
  - Press



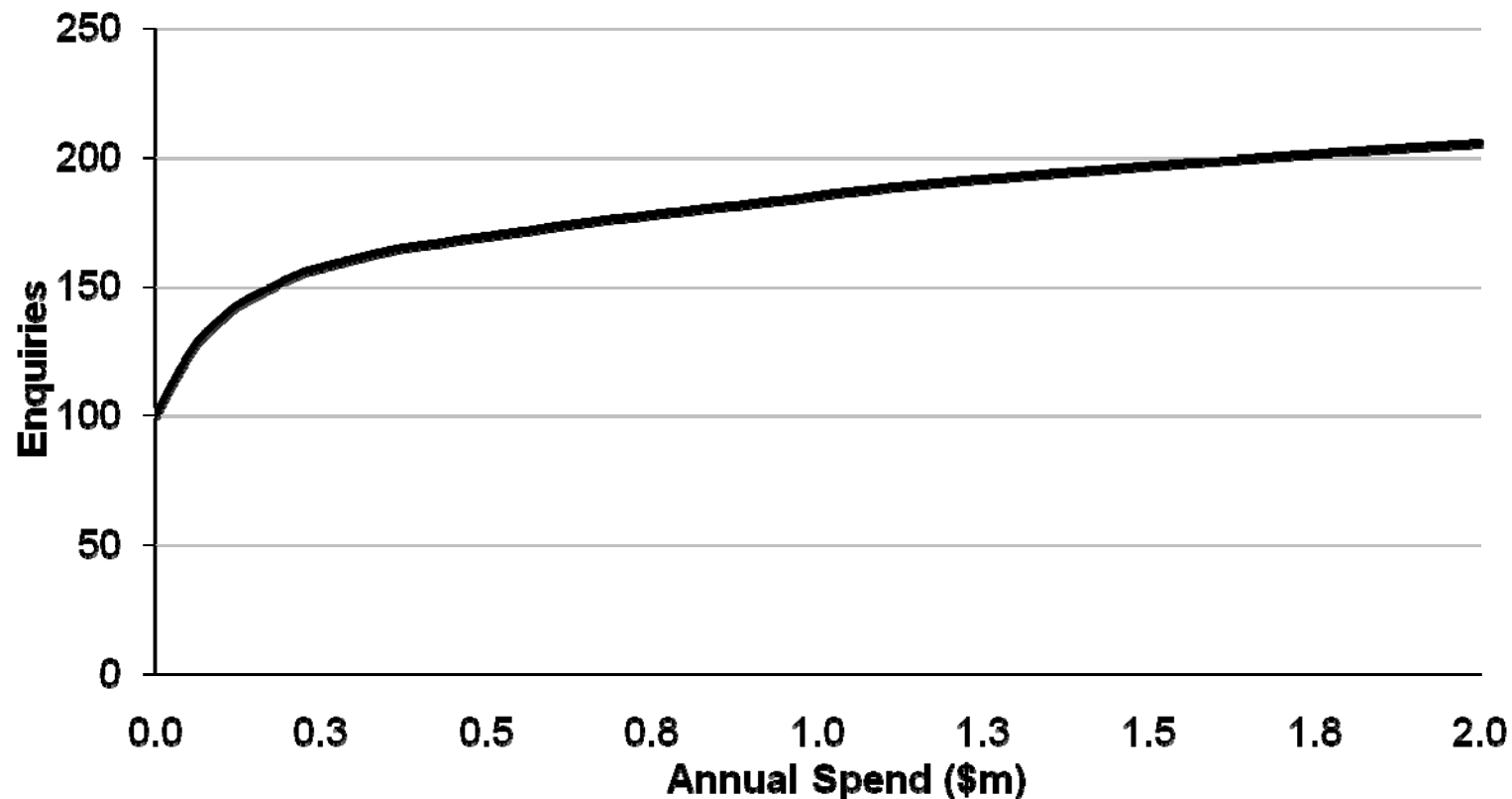


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# Overall strategy

## Optimal channel mix at different spend





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# Overall strategy

## Optimal channel mix at different spend

