



# 业界产品比较指南: Agilent InfiniiVision 示波器 与 Tektronix 4000 示波器

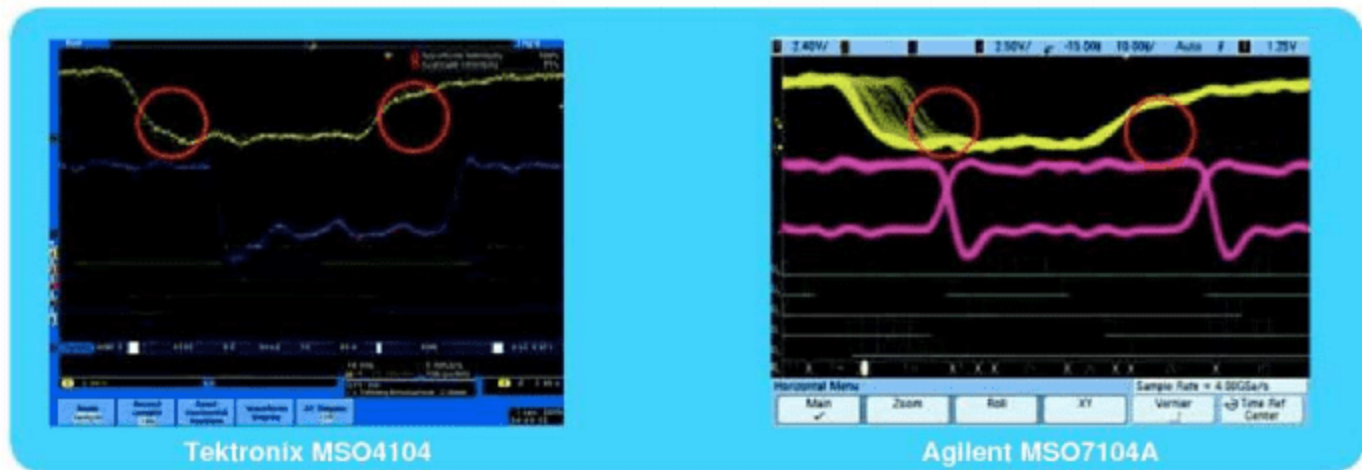
您是否正在挑选新一代示波器?

Agilent InfiniiVision系列示波器专为提供业界最佳的信号可视性而设计

- **外型优美:** 外形多样, 可满足您的需要和预算要求。
- **身手敏捷:** 定制的 MegaZoom III 技术可提供业界最快的波形更新速率。
- **智慧过人:** 11 款应用软件使您能够更快地深入分析常见问题。



关键考虑因素: 当探测信号时, 您对示波器捕获重要细节的能力有多大的信心? 分别使用以下两款示波器进行5秒钟的测试



测量条件: 通道1上的亚稳定状态毛刺信号每秒钟大约出现200次。每台MSO的其他模拟和数字通道用于探测其他信号。对通道1上的信号进行5秒钟的探测。您看到毛刺信号的几率是多少?

步骤	示波器设置	时基	Tektronix MSO4104		Agilent MSO7104A	
			波形更新速率	毛刺信号捕获几率	波形更新速率	毛刺信号捕获几率
#1	只显示模拟通道	20ns/div	55,000/ 秒	99.99%	95,000/ 秒	99.99%
#2	改变时基设置 <sup>1</sup>	10ns/div	2,300/ 秒	20.54%	60,000/ 秒	99.75%
#3	添加逻辑通道	10ns/div	125/ 秒	1.24%	60,000/ 秒	99.75%
#4	添加串行解码	10ns/div	30/ 秒	0.30%	60,000/ 秒	99.75%
#5	添加深存储器 <sup>2</sup>	10ns/div	18/ 秒	0.18%	60,000/ 秒	99.75%

1. 上面的屏幕图像是在该设置条件下捕获的  
2. Tektronix 只支持手动选择 10M 点。而安捷伦始终支持最大限度优化深存储器的利用率

安捷伦不折不扣的波形更新速率, 可提供:

- 最佳的捕获偶发事件的概率
- 最详细的信号信息
- 最快的示波器响应控制



Agilent Technologies

	考虑因素	Agilent InfiniiVision MSO (5000、6000 和 7000 系列)	Tektronix MSO4000
主要技术指标	带宽	100 MHz 至 1 GHz	350 MHz 至 1 GHz
	通道	2 或 4 个模拟通道 + 16 个数字通道	2 或 4 个模拟通道 + 16 个数字通道
	采样率	2 GSa/s 至 4 GSa/s	2.5 GSa/s 至 5 GSa/s
	最大存储器深度	8 Mpts	10 Mpts
外型优美	显示器尺寸	12.1 英寸 XGA (7000 系列)	10.4 英寸 XGA
	外形	便携式、台式、1U 机架安装	台式
	DSO 升级至 MSO	10 分钟用户安装	无
身手敏捷	更新速率 — 仅示波器通道	100,000 波形 / 秒	50,000 波形 / 秒
	更新速率 — MSO	100,000 波形 / 秒	130 波形 / 秒 (最大值)
	使用完整存储器时的数字采样率	高达 2 GSa/s	高达 500 MSa/s
智慧过人	串行触发和解码	I <sup>2</sup> C、SPI、CAN、LIN、FlexRay、RS-232/UART	I <sup>2</sup> C、SPI、CAN、RS-232/UART
	其他应用	FPGA 调试、分段存储器、功率测量、矢量信号分析、电池工作	FPGA 调试 (仅限第三方提供)
	硬件加速串行解码	是	无
	离线查看、分析和数据共享	是, 个人电脑便可实现	无
	波形搜索引擎 (WaveInspector) 软件	无	是, 仅限于本地查看和分析

Agilent InfiniiVision 系列示波器功能强大, 无可替代。

请访问 [www.agilent.com/find/7000comp](http://www.agilent.com/find/7000comp) 下载应用指南 5989-7885EN “Evaluating Oscilloscopes for Best Signal Visibility”。您也可以观看在线视频或申请测试工具。

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## CLIENT CASE

# Generating Incremental Revenue & Greater Profitability

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## Generating Incremental Revenue & Greater Profitability

### Background

As current economic conditions continue to re-enforce the need for improved marketing effectiveness, marketing decision makers are actively seeking better targeting approaches for identifying "incremental" revenue opportunities from their customer marketing programs.

The case below describes how a national retailer is using marketing analytics for incremental revenue and greater profitability.

### Client Objective

Our client, a well-known national retailer, had been observing a declining trend in the profitability of their direct marketing programs. These programs, targeted at existing customers, were designed to stimulate incremental demand for their products through the use of discount offers. While their customer targeting leveraged transaction history and an in-depth knowledge of identified "top customers," communication cost and thin product margins made it difficult to achieve ROI thresholds on these programs.

Our client was looking for a way to identify which customers would produce a positive ROI in response to this type of campaign. Being able to identify the profitable subset of customers within the campaign would allow the Retailer to improve program performance, and at the same time, redirect funds accordingly for optimal marketing effectiveness.

### Our Solution

iKnowtion determined that the best way for our client to identify pockets of profitable customers was to predict incremental activity, rather than total activity, and employed a Lift Modeling approach to do so.

Our client was already savvy in terms of utilizing customer data, using predictive models, and identifying "top customers." However, "top" customers in terms of revenue contribution are not the same customers who will produce additional revenue in response to a marketing stimulus. The lift modeling approach goes beyond the traditional method of measuring incremental results for different groups (test versus control) in that it pinpoints the individual customers who have the greatest potential (not just the groups). The ability to pinpoint individuals provides our client with the flexibility to take immediate action, thus improving targeting for better program performance.

Our process included the development of a "true lift" framework in order to identify customers with the greatest incremental potential, rather than overall sales potential. During this process we evaluated program treated and control groups to estimate base sales and the impact of the offer on sales, and created two distinct models accordingly.

The first model, which utilized both the treated and the control groups, predicted expected sales. Next, customers in the treated group were evaluated in order to determine the degree to which the offer would influence expected sales. This was achieved by creating a variable which represented the marketing action (offer).

## Generating Incremental Revenue & Greater Profitability

Through the modeling process, a weight was assigned to that offer variable, representing the importance of that offer in determining sales relative to other known customer characteristics. Finally, we created two regression equations: one including the offer variable and one excluding the offer variable. The difference between these two equations represents predicted incremental sales, providing a measure of lift at the individual customer level.

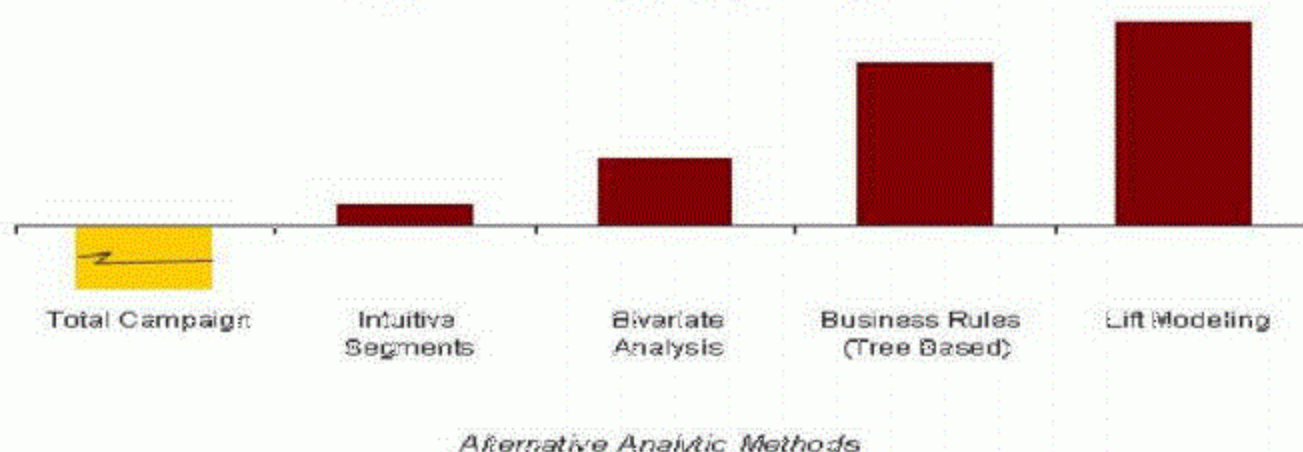
### Alternative Analytic Methods

During the course of this assignment, our client had specified that the analytic solution must be relatively easy to operationalize. In an environment with multiple campaigns executed simultaneously, the client was not interested in an overly complex algorithm that might be hard to code in the system or maintain over time.

Because of this requirement, iKnowtion presented several analytic alternatives, ranging from easy to implement/lower impact to harder to implement/biggest impact. Analytic alternatives ranged from business rules involving only two and then three variables, to a tree-based set of logic, and then finally the lift model algorithm.

For each of the alternative methods, campaign results were simulated by "back scoring" customers. That is, customers were scored based on their status at the start of the campaign, and the results were tracked during the campaign period. This allowed us to recalculate program results based on the different targeting scenarios. Estimated incremental impact and program ROI was presented for each solution, so that our client could assess the trade-offs. This validation process clearly demonstrated how an unprofitable campaign approach could be progressively improved by applying targeting methods at varying levels of sophistication. The lift modeling solution produced the best results.

Campaign Profitability (\$) by Analytic Method





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**Generating Incremental Revenue & Greater Profitability****The Bottom Line**

The lift modeling solution transformed a previously unprofitable campaign to a campaign with strong, double-digit ROI. In addition, iKnowtion had uncovered a number of insights about this retailer's top customers which led to several marketing opportunities including: a refined segmentation approach, an understanding of key activity that drives profitability, and a lifecycle-based approach to customer development which has helped to build, grow and retain our client's best customers.

**For More Information**

Lift modeling is one of many marketing analytics techniques that can be used to improve marketing performance. If you have any questions about this technique or other marketing analytics solutions, or you would like to discuss a marketing challenge you are currently facing, please contact Sandy Karcher at (781) 494-9989 or [skarcher@iknowtion.com](mailto:skarcher@iknowtion.com).