BACK TO THE FUTURE FOR PERFORMANCE MARKETING

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LOOKING INTO THE FUTURE

When Doctor Emmet Brown's DeLorean automobile flux capacitor took him back in time enabling him to predict the future he probably didn't realise what an impact he could have on digital marketing. He was onto something big, but just ahead of his time.

So let's imagine you knew how much money you could make tomorrow; that you could identify how much you needed to spend on advertising to maximise your return and where to spend the marketing budget to ensure the biggest gains. This would be an advantage, right?

Typically, digital marketers can effectively measure today what happened yesterday and through robust and rigorous analysis understand what interventions drove changes in performance. In a sense we're reliable historians. However, accurately predicting what will happen in the future, both tomorrow and longer term, largely remains the holy grail of the marketing puzzle required to plan and optimise performance based marketing campaigns effectively. Why is this important?

THE OPPORTUNITY FOR BUSINESS

With approximately £7 billion spent in 2014 on digital advertising in the UK alone, smart businesses want more return from their growing digital marketing budgets as the costs increase and the competition online gets tougher. Businesses also struggle to know accurately how much budget to apportion to digital channels to maximise profits.

Digital marketing has clearly brought a new expectation in terms of measurable return. Tracking and analytics reveals where sales are lost and won. They are the digital 'scoreboard' of today's ecommerce operations.

So how can businesses improve their score line? Quite simply, the opportunity is to predict how customers are likely to behave and take advantage of this insight when planning marketing and deciding where and when to invest budget. More and more digital 'fingerprints' are available to digital marketers indicating customer behaviour but the opportunity is to identify patterns and relationships in this data that allow the reliable prediction of what's likely to happen tomorrow, next week, next month and beyond.

IDEA IN BRIEF

The challenge

The growing importance of digital channels for customer acquisition and the rising costs of digital mean that it's a more competitive landscape online that ever before. Businesses can respond by working more smartly with the data they collect and embrace new techniques for optimizing their performance marketing activity. The biggest killer of profit is bad budgeting – either spending too little or too much.

The opportunity

Accurately predicting the future performance of marketing activity is now possible thanks to the use of advanced statistical techniques called predictive analytics. Statistical modeling and the understanding of customer buying triggers can lead to highly accurate predictions of where and when to spend marketing budget for the greatest return.

The solution

One tool available to business and marketers is called Forecaster. This is a ground breaking performance marketing platform that uses advanced statistical models and real time inputs such as weather, TV, stock and seasonality to provide highly accurate forecasts and optimization for digital marketing channels such as PPC, PLA and display.

EXTRACTING DIAMONDS FROM THE DATA

So how can we extract real value from this data? Living in an age of big data, we currently generate more data every two days than existed in total up to 2003. This data is rich and, when used properly, can provide vast insight into customer behaviour and purchase paths. However, the nature of big data is that it quickly becomes impractical to analyse using traditional tools; therefore, we need to develop systems to efficiently handle these datasets and provide actionable insight in order to make informed decisions. Using big data and statistics to identify trends and patterns is the first step in an approach called predictive analytics, and building decision-making technology to automatically manage, model and identify opportunities will become a core tool for marketers over the next 12 months.

Predictive analytics tools are a series of statistical models that can identify and exploit trends within historic data to make predictions about the future. Statistical modelling techniques capture relationships among multiple metrics and enable the risk associated with set conditions to be assessed. Knowing that the risk is minimised allows for greater confidence in decision making.

Developing tools to deal with big data also has another advantage; analysis of marketing activity that has been slow and labour intensive in the past becomes much quicker and easier. Marketing tools of the future will identify key trends, issues and deeper insight, allowing opportunities to be exploited automatically providing greater accuracy in marketing decision making.

"One man and a horse can plough a field in one day beautifully, but ploughing 400,000 fields in one day would be a little more daunting. So, part of the answer is that the scale of digital marketing is so large and the market conditions so variable from day to day, that efficient automations of the process is a requirement", says Professor David Wooff of Durham University.

Managing data requires the ability to amalgamate multiple sources of data, e.g. third-party tracking, search engine data and internal systems, and store the data in a useful format for use in modelling. It is also necessary to consider that data is measured appropriately, by ensuring that de-duplication occurs and attribution models are applied effectively.

Many tools currently exist to analyse historic data including the much loved spread sheet; however, while it is useful and necessary to understand what happened in the past, these tools provide no indication of what will happen in the future and therefore provide little value in making decisions about tomorrow. Current optimisation techniques have significant limitations argues Professor Wooff, *"Rule-based optimization can work quite well for single keywords in search marketing, where the operator has the time and attention and understanding to focus on all the details, and to do so every day. But for large portfolios of keywords, that simply isn't possible. But more importantly, those techniques can't deliver even a fraction of the information that managers need to make informed decisions."*

This is where predictive analytics can be utilised to maximum effect.

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Professor Wooff
Durham University

PLACE SAFER BETS

Using predictive analytics in marketing gives the advantage of knowing what is likely to happen with a level of confidence. This is a vast improvement on current forecasting techniques amongst digital marketers and businesses which are generally at best a basic 'bottom up' model with an anecdotal view on expected growth – effectively 'betting' with poor odds. Unfortunately, they do not utilise or have access to statistical modelling.

Accurate forecasting by having a reliable view of future performance, provides a significant advantage over competitors and facilitates smarter decision making. It offers the opportunity to identify where to spend budget to gain the best return; that is, investing where potential gains are greatest.

In order to fully utilise the power of predictive analytics, a tool must not only forecast what can realistically be expected but also provide a helpful output to allow marketers to make decisions in a more informed way. Any tool needs to provide KPIs and actionable reports, highlighting the parts of a campaign that are not working efficiently to best focus management time on maximising performance. Outputs also need to identify the options available for spending a budget; e.g. where to spend extra budget or identifying how much more opportunity there is to spend whilst still making profit.

FORECASTER FOR DIGITAL MARKETERS

The hopes and theory of accurate prediction and certainty in digital marketing is now a reality following five years of research and product development by a team at online retailing specialist Summit.

Forecaster is Summit's proprietary predictive analytics and decision making tool for performance marketing. Forecaster has been built by a world class team of PhD level statisticians fully utilising the 15 years of digital marketing expertise at Summit led by Professor David Wooff at Durham University.

The trigger for Summit to develop Forecaster came from the regular requests from clients who wanted to know how much additional revenue they would make, if they provided additional marketing budget for pay per click marketing. Traditional forecasting methods, using click through rate and conversion always proved wildly inaccurate in the long run and were of little commercial value to businesses which operate on slender margins and depend on 'certainty' from their investment.

Forecaster processes various data such as search engine data, efficiency targets, transactional and external data influencing buying behaviour, e.g. weather, seasonality and promotional calendars. Along with knowledge of customer trends and budget information, Forecaster combines all the inputs via a comprehensive data management system. Cloud computing methodologies are utilised to process the data in vast quantities, performing millions of calculations and simulations quickly and on a daily basis. Forecaster uses a series of statistical and mathematical models which have been developed to provide recommendations of account performance, both at a channel level (PPC, PLA and display) and keyword level.

Forecaster's approach can be summarised in three stages: Prediction, Performance and Profit. Each stage supports the other and is in a constant cycle of evaluation and refinement.

FOREC/\STER
PREDICT. PERFORM. PROFIT.

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PREDICT
- Analyse historic performance
- Understand external factors
- Model behaviour
- Simulate expected performance
- Create forecasts & optimisation

PERFORM
- Automate optimisation
- Analyse performance vs prediction
- Dynamic budget setting
- Regular 'position fixes' vs prediction
- Harness buying triggers e.g. Weather and TV
- Evaluation of hourly / daily market factors

PROFIT
- Understand profitability
- Optimise against net margin
- Explore other KPI's e.g. Life Time Value
- Optimise using real time margin data
- Attribute media spend across key channels

RIGHT PLACE, RIGHT TIME – IT'S NOT LUCK

These recommendations provide forecasts of expected performance, bid allocations for each keyword and diagnostic reports, which form the basis of decision making on a daily basis. In addition, Forecaster can also provide the answers to 'what if' questions; for example, what if I had an extra £10,000 – can I spend the extra budget efficiently (i.e. within COS targets) and where should the money be spent to provide the greatest returns? Or, how much do I need to spend to maximise the amount of profit I can generate to achieve the best return on investment? Forecaster can answer these questions, and more. Knowing which parts of the campaign are working well, which categories provide the best return month on month, and being able to plan the best strategy for aligning spend over the year enables marketers and businesses to make the wisest decisions. Forecaster's imperative to spend money in the right place at the right time is fundamental to the technology's competitive advantage for business. *"It's almost like cheating"*, says Professor Wooff.

There is also a big gain to be had in using people's time effectively. Daily diagnostic reports focus account management on areas in need of investigation; teams no longer spend hours manually optimising each campaign; instead, teams can quickly identify areas of the account that did not perform to expectations and address limiting performance issues. Conversely, areas which exceeded expectations are quickly identified; by re-forecasting at least daily, marketers are able to get an up to date accurate 'position fix' of performance against target ensuring that the campaign is never left to wander off course. Daily forecasting also ensures that recent behaviour from the campaigns is taken into account and new opportunities or positive gains are capitalised on fast.

HARNESSING CUSTOMER BUYING TRIGGERS

Accurate forecasting relies on being able to make predictions about performance with certainty. During the development of Forecaster, the team explored the relationships between important factors that affect the way we buy. External factors such as seasonality and weather have been found to impact demand in a profound way. No surprise there, you may say. However, it's more complex to understand the changing level of impact at a given time and dynamically adjusting your decision making accordingly.

Forecaster's design team have cracked the opportunity that understanding seasonality presents by creating an entire library of seasonal models across retail products and categories. These models predict how products are likely to behave at a particular time of year or on an event such as bank holidays or the build up to Christmas. Every event in a retailer's calendar can be modelled providing a bespoke and highly accurate view of expected demand and performance. These dynamic seasonal libraries also become the basis for longer term forecasting and setting accurate annual budgets and forecasts.

Forecaster also imports a ten day rolling weather forecast each morning split across key regions of the country. This enables accurate prediction of how the variance in weather against the expected norm for the time of year is likely to affect sales and demand. From Summit's research, the absolute purchase trigger for certain products is temperature and Forecaster is able to automatically exploit this behaviour by mapping daily weather forecasts against products that are correlated to changes in weather.

> "It's almost like cheating."

Professor Wooff
Durham University

WHO'S WATCHING TV?

The Forecaster team has also conducted research into the impact of TV on search. Analysis has shown that in many cases there is a significant 'spike' in search queries and click through rates in a short period after the airing of an advert. In order to capitalise on this buying behaviour, Forecaster takes inputs from across all major television channels in real time looking for opportunities to launch and modify search marketing campaigns in synchronisation with television events. Forecaster predicts the likely uplift from a TV advert slot and automatically responds to this event in seconds, uploading changes to Google in almost real time. New or modified search of display adverts are live before the advert has even finished. This gives businesses the chance to hijack the uplift available from competitor TV advertising as well as brand advertising. In trials, Forecaster has delivered a 15-20% revenue uplift from keywords triggered against TV advertising. Of course this opens up a huge range of possibilities to synchronise a wider range of digital marketing channels with TV.

> "If you can't understand the uncertainties in your marketplace, you will lose out to those who do"

**Professor Wooff**
Durham University

AND THE RESULTS?

Forecaster was launched by Summit in March 2013, across a range of different retailers. The technology has delivered consistent uplift in revenue (up to 900%) with the average increase at over 35%; results have shown that the greater the daily spend, the higher the opportunity for greater uplift. Unlike the daily volatile Cost of Sale achieved via manual or rule based optimisation, Forecaster results in greater consistency in efficiency measures on a daily basis, giving greater confidence in performance estimates. Clients using Forecaster have seen increases in CTR, CR and AOV across all categories that have been tested; traffic increases of up to 30%+ are not uncommon. Forecaster has also driven a significantly lower COS whilst achieving the expected spend.

Forecaster has been very effective in delivering increased market share across competitive categories, such as electrical and domestic appliances.

Forecaster's approach to optimisation empowers greater campaign analysis, more quickly and easily; therefore analysis becomes more frequent and more insight is gained on a daily basis to aid decision making. Better, more informed decision making improves the quality of the data, which in turn, improves the accuracy and precision of the statistical models and the forecasts, leading to improved overall performance.

SEASONALITY OF A KEYWORD

Accurate forecasts and budget recommendations are possible by understanding the behaviour and demand for a keyword across a twelve month period and mapping this against key retail events such as bank holidays and Christmas.
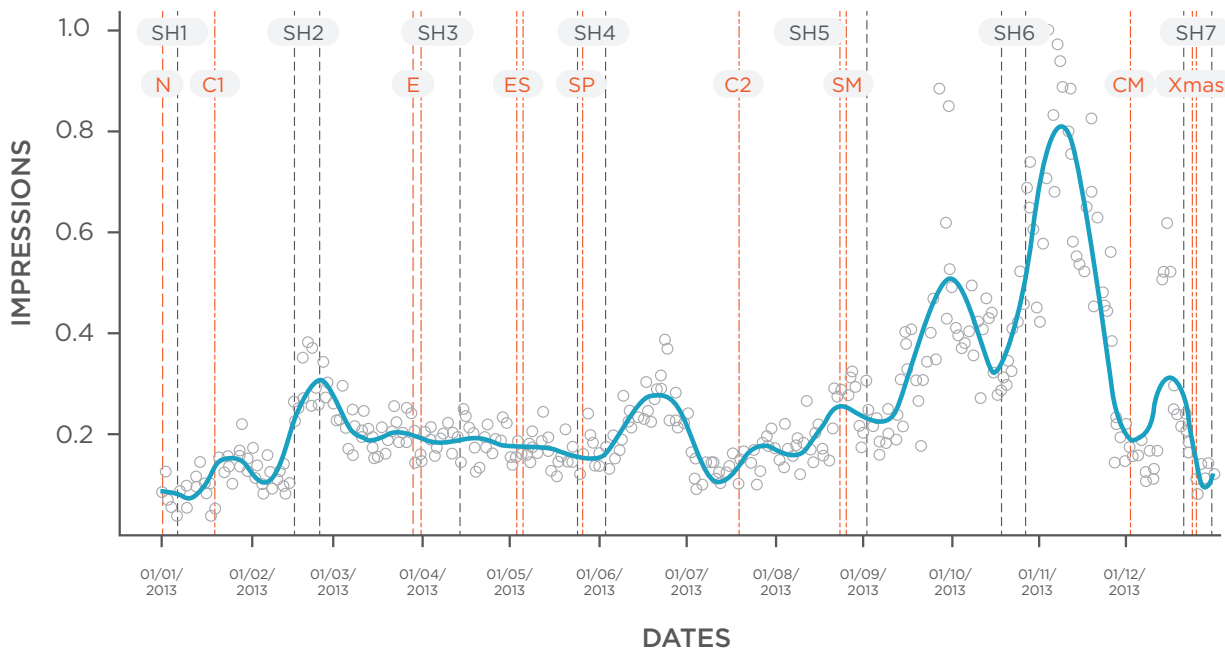
## PREDICTING THE BEHAVIOUR OF PRODUCTS

In order to predict the behaviour of different products, Forecaster creates 'clusters' of data that match products and keywords into similar groups.
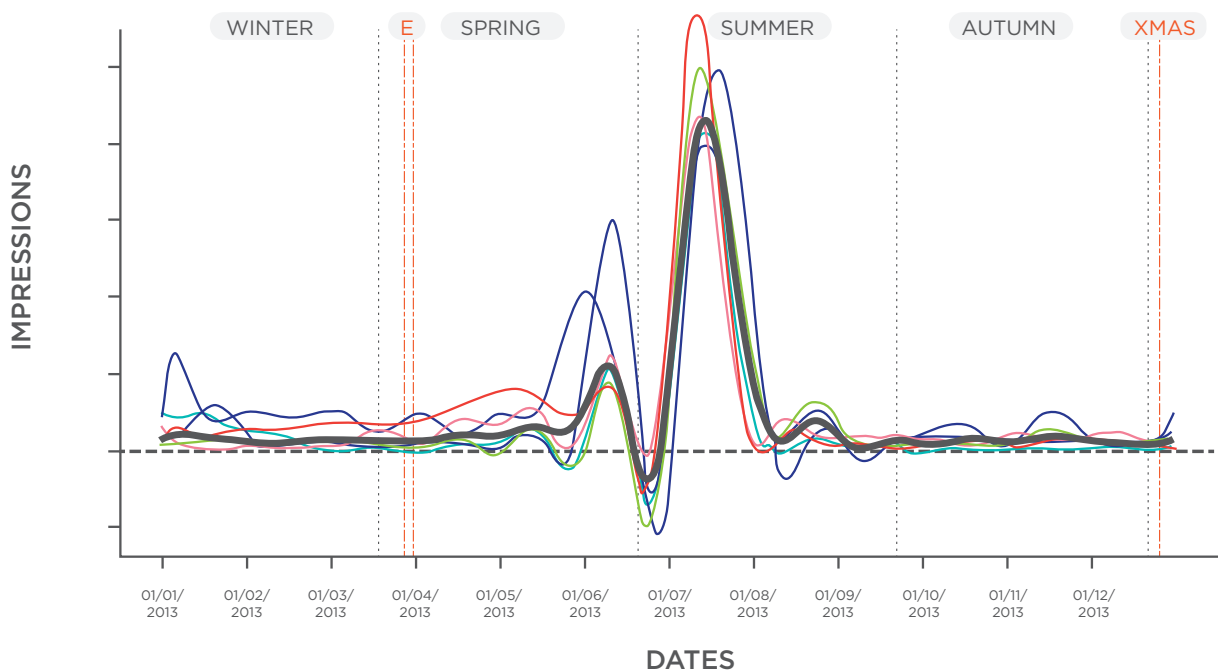
REVENUE AND COST OF SALE PERFORMANCE

The following graph shows the change in performance once Forecaster is switched on. Following a period of 'learning', Forecaster improves revenue performance for the same spend whilst reducing and smoothing the cost of sale.
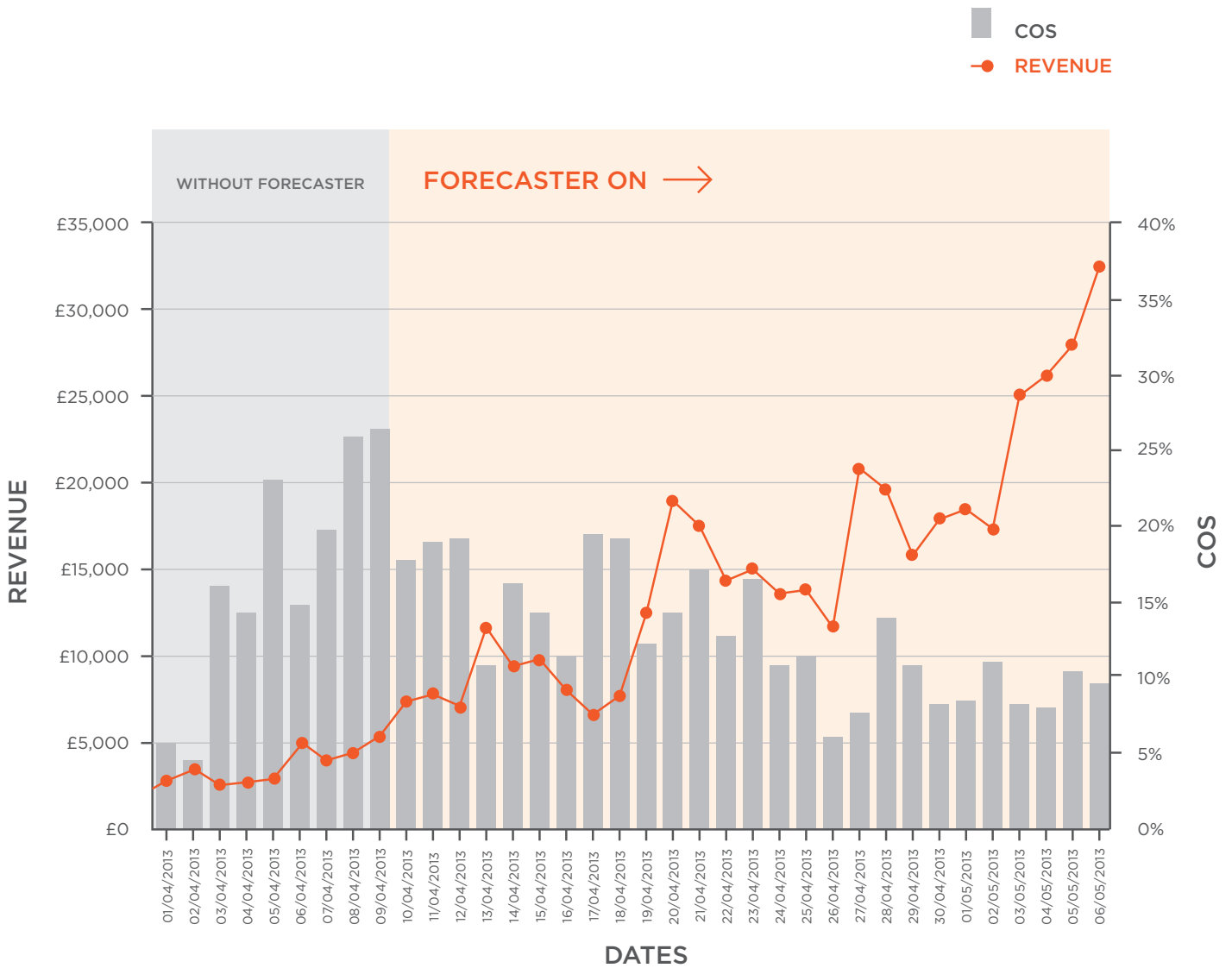
ARGOS CASE STUDY

Argos is the UK's largest high street retailer online with over 50,000 products for sale and 750 stores throughout the country. In 2014 it delivered 128 million customer transactions and over 738 million visits to it's website.

Argos works with Summit to deliver search marketing and has been using Forecaster for the last 18 months. The results have been transformational with revenues from search up by over 50% and improvement in margins by up to 900%.

Argos use Forecaster to forecast, plan and optimise their digital activity across PPC, PLA and display, linked in real time to buying triggers such as weather, TV and seasonality.

> "Forecaster's had a great impact on our business. It's allowed us to be even more competitive in a challenging market particularly when it's come to understanding where to place our investments."

Mark Steel
Head of Digital Operations, Argos

WHAT'S NEXT FOR FORECASTER?

Professor Wooff, of Durham University who has led the design and creation of Forecaster at Summit has a clear vision of the future. *"Within our grasp is the ability to map out, over an entire year, an optimisation of a client's full portfolio of keywords and performance marketing, taking into account ad campaigns, weather, day of week, seasonality, and buying triggers. We can do this over multiple channels, so allowing for channel cannibalisation. We will include optimising the timing of ad campaigns, so that we will be telling the client the best period in which to launch that campaign, taking into account other seasonal factors.*

For all this we can report forecasts to very fine levels of detail: expected sales and revenue every day for every keyword, the best way to spend budget on a daily, or weekly, or monthly, or annual basis; where extra budget should be spent, and so forth."

Predictive analytics and the methods employed by Forecaster clearly offer businesses a significant competitive advantage over current methods used by the majority of digital marketers and agencies.

"Roads? Where we're going we won't need roads!" claimed Dr. Emmet Brown at the end of Back to the Future. Perhaps he knew something about the future of digital marketing in 2015.

AUTHORS OF THIS PAPER

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Hedley co-founded Summit 14 years ago and has been the driving force behind the concept and development of Forecaster. Hedley was named in the Digerati's top 100 people in UK digital in 2014.

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Jillian gained her PhD from the University of Southampton before joining Summit to develop Forecaster 5 years ago. She is now Head of Insight and leads the statistical team at Summit, working on the roadmap for Forecaster.

Ben Latham
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Ben has worked at Summit over 8 years and is responsible for the digital strategy across Summit's retail clients as well as owning the product development of Forecaster.

SUMMIT: CHANGEMAKERS IN RETAIL

Retail is in our blood. It influences who we hire, who we work with, and what we measure. We've been working with some of Europe's biggest retailers for 14 years; many of our team come from them, too. We know that everything we recommend works, because we've learned it in the real world of retailing and we do it every day.

At Summit, we've always done things differently. We challenge the norms, ask 'what if' and keep setting the bar higher. We've learned what works and what doesn't through our own business development. And honesty, trust and straight talking are fundamental to our ideals.

Our changemaking approach has worked for us, with our business growing to £40 million in just 14 years. And it works for our clients – last year we helped to make them an extra £300 million online. So the financial rewards are great. But we're just as proud of the fact that our clients like us. We're friendly and supportive and we aim to be a joy to work with – in fact, a true partner.

For us, 'good enough' could never be good enough. We're here to make our clients' lives and businesses better.