THE WEB ANALYTICS MATURITY MODEL

A strategic approach based on business maturity and critical success factors

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About the author

Stéphane Hamel is a leading voice for web analytics, helping businesses understand the value of analytics and process optimization. With over twenty years of experience, he has been on both sides of the fence, including client and agency, small projects to complete multi-site, multi-cultural ecosystems overhaul. Recipient of the « *Web Analytics Association Leadership and Technical Excellence Recognition* »[1] and frequent speaker at the « *eMetrics Marketing Optimization Summit* »[2] (San Jose, Washington, Toronto), and other conferences, he is also lecturing the « *Award of Achievement in Web Analytics* »[3] and « *Introduction du Business Analysis* »[4] classes at the University of British Columbia. Stéphane is completing a Master in Business Administration specializing in eBusiness at Laval University[5] (Québec City) and is involved in various research & development activities with the prime focus of making web analytics easier through the popular « *Web Analytics Solution Profiler* »[6] tool and concepts such as « *Just-In-Time Tagging* »[7]. Involved in various professional and educational activities, he is also a member of the « *International Institute of Business Analysis* »[8] and on the board of directors and treasurer of the « *Web Analytics Association* »[9].

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[1]   "Web Analytics Association Announces First Annual WAALTER Award Winners", May 14th, 2009, Web Analytics Association, http://webanalyticsassociation.org/en/rel/456/

[2]   "eMetrics Marketing Optimization Summit", http://emetrics.org

[3]"UBC Award of Achievement in Web Analytics", University of British Columbia, http://www.tech.ubc.ca/webanalytics/

[4]"UBC Certificate in Business System Analysis", University of British Columbia, http://www.tech.ubc.ca/businessanalysis/

[5]   "Université Laval", http://ulaval.ca

[6]   "Web Analytics Solution Profiler", Stéphane Hamel, http://WebAnalyticsSolutionProfiler.com

[7]   "Just-In-Time Tagging", Stéphane Hamel, http://immeria.net

[8]   "International Institute of Business Analysis", http://theiiba.org

[9]   "Results Are In: Web Analytics Association Announces 2009 - 2010 Board of Directors", 29 avril 2009, Web Analytics Association, http://webanalyticsassociation.org/en/rel/454/

Introduction

Jim Sterne, dubbed the "godfather of web analytics", was pushing for online marketing as early as 1994. In "E-Metrics: Business metrics for the new economy" paper published in 2000 he mentioned "while all e-business managers clearly recognize the tremendous value of e-customer analytics, most lack the staff, technical resources, and expertise to harness and put to effective use the flood of raw data produced by their Web systems" (Sterne and Cuttler 2000). A decade later, we can only admit this statement remains true.

At the same time, some prominent voices in the web analytics industry claim "web analytics is hard". We'd rather be of the school of thought that web analytics can be easier when approached in the right.

Complex projects can only be achieved pending goals and expectations are realistic, resources are allocated and execution is sound. Web analytics, albeit its own challenges, isn't so different or any harder than other challenges faced by organizations competing in today's environment.

This paper provides an overview and a proposition for the Web Analytics Maturity Model (WAMM). Specifically, it defines the concepts necessary to understand the model and the motivation and purpose behind it. It describes the structural components, consisting of six key process areas (or pillars) within the six maturity levels of the model, and the principles that underline each of the maturity levels. The overarching goal is to help you "use analytics to make better decisions and extract maximum value

from business processes" (Davenport and Harris 2007).

What is Web Analytics?

For the purpose of defining the Web Analytics Maturity Model, the definition of web analytics is:

"The extensive use of quantitative and qualitative data (primarily, but not limited to online data), statistical analysis, explanatory (e.g. multivariate testing) and predictive models (e.g. behavioral targeting), business process analysis and fact-based management to drive a continuous improvement of online activities; resulting in higher ROI."

This definition is broader than the official definition of the Web Analytics Association definition (Web Analytics Association n.d.) and is largely inspired from Thomas Davenport's definition of analytics in "Competing on Analytics" (Davenport and Harris 2007)

Why a Model?

Web analytics is a science involving statistics, information technology as well as economic, management, marketing principles and several other field of expertise. Although web analytics is quite new, its underlying concepts are not.

A model is a schematic and simplified representation of a more complex reality. What is included or abstracted stems from hypothesis about what's essential or not. A model is a generalization of what we think we understand about a concept. It is elaborated and evolves through a process of theory development and validation. However, developing the model is subject to three common obstacles:

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- Making the distinction between cause and effect,
- The composition error, which takes a single or a small number of observations and generalize them.
- The "after this, therefore because" clause, from the Latin *post hoc, ergo propter hoc*, which assume because an event happens after another, the later is necessarily caused by the former.

Although there are consensus on several aspects, thought leaders in the web analytics industry sometimes disagree or are simply expressing the same concept in different ways.

What is a Maturity Model?

A maturity model contains the essential elements of effective processes for one or more disciplines. It also describes an evolutionary improvement path from *ad hoc*, immature processes to disciplined, mature processes with improved quality and effectiveness (Tutorials Point n.d.).

Adapted and derived from models in fields such as business intelligence and process optimization, as well as models (see Appendix I) proposed by industry analysts and leaders, the proposed model focus on the field of "web analytics" from a managerial and strategic perspective.

All reviewed models share some similarities in their attempt to define a "framework and objective criteria to determine the sophistication of an organization's measurement and analysis skills" (Webtrends 2009).

However, maturity models aren't perfect and often lack formal theoretical basis; have vague empirical support; encourages displacement of goals from the true mission of improving process to the artificial mission of achieving a higher maturity level.

Despite those concerns, a maturity model brings value where there are no better or reasonable alternatives. It offers a mean to assess the current and desired state, ease communication and change management.

Attributes of a Maturity Model

Maturity models are not strict paradigms and they often prompt criticism whenever a specific item doesn't match one's own view of the world. While it is acknowledged maturity levels and their features contains gray areas and are subject to interpretation, the important elements are not so much the specifics of each level but the structure of the maturity model (Paulk, et al. 1993).

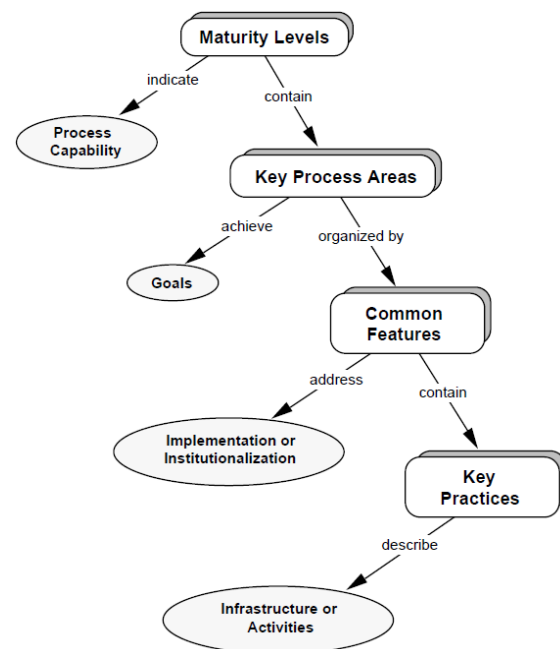Attributes of a maturity model (Curtis, Hefley and Miller 1995) are summarized below:

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FIGURE 1 : ATTRIBUTES OF A MATURITY MODEL

The Web Analytics Maturity Model

Please refer to Appendix III for a Web Analytics Maturity Model worksheet.

Maturity Levels

For the proposed model, each Key Process Area (or pillar) can be graded on a scale from "0 – Analytically impaired" through "5 – Analytically addicted", as summarized below:

0. Impaired:
Characterized by the use of out of the box tools & reports, limited resources lacking formal training (hands on skills) and education (knowledge). Web Analytics is used on an ad-hoc basis and is of limited value and scope. Some tactical objectives are defined but results are not well communicated and there are multiple versions of the truth.

1. **Initiated**:
Working with metrics to optimize specific areas of the business (such as marketing or the ecommerce catalogue). Resources are still limited but the process is getting streamlined. Results are communicated to various business stakeholders (often director level). However, web analytic might be supporting obsolete business processes and thus, be limited in its ability to push for optimization beyond the online channel. Success is mostly anecdotal.

2. **Operational**:
Key Performance Indicators and dashboards are defined and aligned with strategic business objectives. A multidisciplinary team is in place and use various sources of information such as competitive data, voice of customer and social media or mobile analysis. Metrics are exploited and

explored through segmentation and multivariate testing. The Internet channel is being optimized; personas are being defined. Results start to appear and be considered at the executive level. Results are centrally driven, but broadly distributed.

3. **Integrated**:
Analysts can now correlate online and offline data from various sources to provide a near 360° view of the whole value chain (see "Limits of web analytics" note). Optimization encompasses complete processes, including back-end and front-end. Online activities are defined from the user perspective and persuasion scenarios are defined. A continuous improvement process and problem solving methodologies are prevalent. Insight and recommendations reach the CXO level.

4. **Competitor**:
This level is characterised by several attributes of companies with a strong analytical culture (Davenport and Harris 2007):

   a) One or more senior executives strongly advocate fact based decision making and analytics
   b) Widespread use of not just descriptive statistics, but predictive modeling and complex optimization techniques
   c) Substantial use of analytics across multiple business functions or processes
   d) Movement toward an enterprise level approach to managing analytical tools, data, and organizational skills and capabilities.

5. **Addicted**: this level matches Davenport's "Analytical Competitor" characteristics: deep

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strategic insight, continuous improvement, integrated, skilled resources, top management commitment, fact-based culture, continuous testing & learning and most important: far beyond the boundaries of the online channel.

Starting at level three, we are gradually leaving the realm of "web analytics" to enter that of "business analytics". The last level matches Davenport's "Analytical Competitor" level, where web analytics is so prevalent and critical that it's impossible to go without it.

Key Process Areas

Key Process Areas are similar to "critical success factors" (CSF), a term initially used in the world of data and business analysis. It identifies the elements that are vital for a strategy to be successful (Wikipedia n.d., Critical success factor). Most organizations have perceived Web Analytics as a technological tool for solve problems in individual areas such as online marketing. But those initiatives are largely characterized by a lack of coordination and structured methodology. Unsurprisingly, Web Analytics Critical Success Factors are not that different from those of any other strategy involving strong commitment and cultural business changes.

Changing the corporate culture, employee behaviour and business processes, is certainly the most difficult and risky part of any major organizational change. By its nature, developing an analytical culture is an iterative and continuous learning process. While data analysis can contribute to business improvement by answering pending questions and validating hypothesis, they also lead to

further questioning and new hypothesis to explore.

Because web analytics touches on aspects of marketing, business intelligence and process optimization, among others, it is easy to recoup some commonly identified CSFs and reveal the following items (Mendoz, et al. August 2007) (Revere, Kadipasaoglu and Zalila 2006) (Davenport and Harris 2007, 34):

1. **Management, Governance and Adoption**

2. **Objectives Definition**

3. **Scoping**

4. **The Analytics Team and Expertise**

5. **The Continuous Improvement Process and Analysis Methodology**

6. **Tools, Technology and Data Integration**

The first element is unambiguously and unanimously the most critical factor. To be successful, executives must recognize web analytics is more than a reporting system and represents an effective way to identify weak points and improvement opportunities. They must perceive analytics (not just web analytics) as a mission critical and competitive resource that can empower each department. Sophisticated use of analytics can contribute to three key elements of a successful organization (Davenport and Harris 2007):

- Efficient and effective execution.
- Smart decision-making.
- Optimized business processes.

Common Features

Common features are attributes that indicate whether the implementation and institutionalization of Key Process Areas

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is effective, repeatable and lasting (Curtis, Hefley and Miller 1995). The following common features were identified:

Commitment:

Is the level of commitment from the organization appropriate and defined by organizational policies, structure and management sponsorship?

Resources:

Are resources to accomplish the task readily available: tools, training & education, organizational structure and people?

Process:

Are the roles and procedures to perform each activity defined, tracked and adapted if necessary? Are recommendations implemented and reviewed to contribute to the overall learning process?

Reporting and Analysis:

Are out-of-the-box reports used or complex multiple-data-source regression analysis conducted to provide customized Key Performance Indicators and dashboards?

Tools:

What are the tools, their features and capabilities, is their use optimal and effective?

Quality:

Are mechanisms in place to insure the data being collected is adequate and of good quality? Are reports, insights and recommendations audited to insure their quality over time?

Key Practices

Each Key Process Area is described in terms of key practices that contribute to satisfying the goals. The key practices describe the means and activities that contribute most to the effective implementation and institutionalization of the key process area. They describe "what" is to be done (Curtis, Hefley and Miller 1995).

Some of the key process areas of the Web Analytics Maturity Model includes:

- Business process analysis and modeling
- Problem resolution techniques
- Communicating results and insight
- Statistics and data modeling
- Web (and online) application development
- Data collection methodologies (log files, tags, network probes, etc.) and data modelization
- Reporting & Analysis
- Defining Key Performance Indicators and Dashboards
- Exploration and visualization tools and methods
- A/B and Multivariate testing
- Search Engine Optimization
- Campaign & Landing page optimization
- Personalization and behavioral targeting
- Predictive analytics
- Interface design and usability
- Content architecture

Management, Governance and Adoption

Metrics are just numbers and indicators without meaning and significance. The analyst responsibility is to understand the correlations, the context and the business environment to turn them into insight and recommendations. Since they can convey negative and sometimes threatening messages, the analyst must develop essential communication and political skills. Should negative results be presented to a management board if

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the responsibility clearly puts colleagues or managers work at risk? Professional ethics is also an important responsibility of any analyst job.

The Management, Governance and Adoption dimension address the following important aspects:

- The role of a web analytics champion
- The web analytics program roadmap
- Change management

Champion

The Web Analytics Champion is typically someone in a management or strong influence role who will promote the web analytics program to higher management, stakeholders and the team at large. He or she is a strong change agent within the organization and will provide formal or implicit approval of

web analytics initiatives. He or she will defend the strategy, goals and objectives when faced with difficulties (because they will arise).

Roadmap

But where should a web analytics program start to lower the risks of change resistance and offer the best possible outcomes in the shortest amount of time? Aiming to change the overall business strategy is too risky and will likely lead to resistance and political nightmares. On the other end, jumping straight into a multitude of data and metrics will likely result in analysts becoming "report junkies" overwhelmed with uncoordinated and questionable requests for data rather than insight.

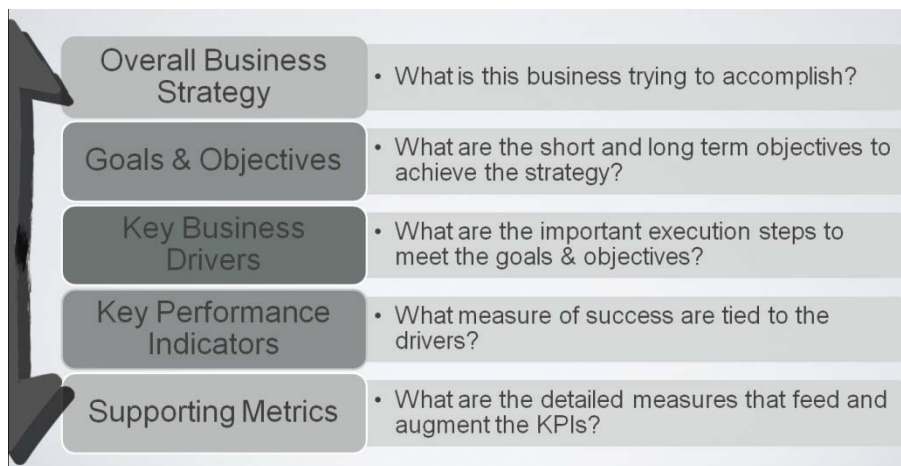The following graph shows a high-level roadmap to web analytics.

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FIGURE 2: THE WEB ANALYTICS ROADMAP

Starting with Key Business Drivers is the easiest. How do you find Key Business Drivers? By identifying stakeholders and their short term goals. You don't need to know their strategic and long term goals for now. Then you can identify the Key Performance Indicators that will tell these stakeholders if they are improving

toward their goals. This approach will lead to fast, albeit sometimes small successes for web analytics. However, this will increase awareness and interest for web analytics. Posting a single or a couple of metrics on the cubicle wall, along with a comment or recommendation no longer than a phrase is also a great change management trick.

Change Management

Wikipedia defines "change management" as a "structured approach to transitioning individuals, teams, and organizations from a current state to a desired future state. It includes both processes and individual change management models, which together are used to manage the people side of change." (Wikipedia n.d., Change management (people))

In "Who moved my cheese", Spencer Johnson identifies some realities of change (Johnson, Who moved my cheese 1998):

- Business environment keeps evolving
- Plan for change
- Learn to identify change opportunities

- The faster you let go old, inefficient tools and processes, the better and faster you can benefit from opportunities
- Move with the flow, or in fact, surf at the top of the wave
- Get out of your comfort zone, this can be the best motivation

A web analytics programs requires careful attention to active and passive resistance. Most organization trying to implement a web analytics program fail in the Zone of Disruption, where data accuracy is challenged and results are mitigated by a lack of management commitment, resulting in a disbelief in the value of analytics. The next graph highlights the four stages of change management (Johnson, The Red Tree Change Model n.d.).
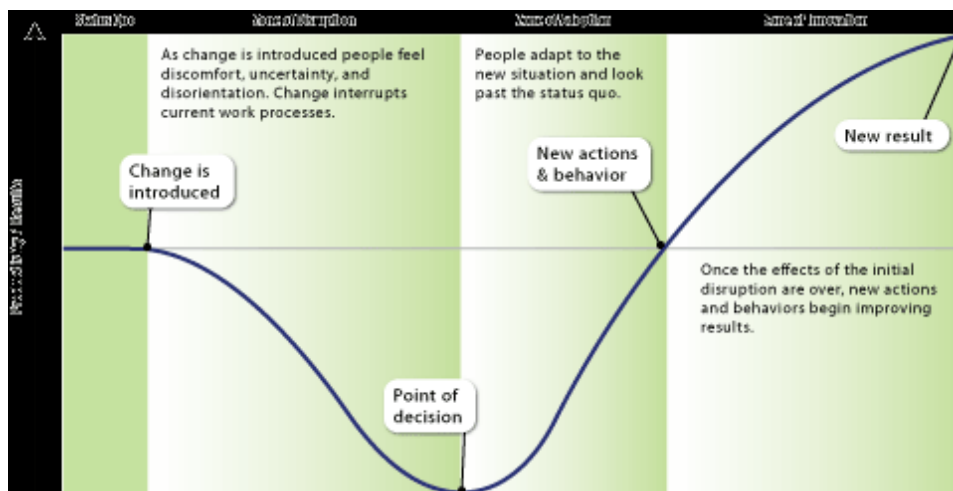
FIGURE 3: RED TREE CHANGE MODEL

WAMM Rating

Evaluation of this criterion is based on the organizational commitment toward analytics and can be easily graded as follow:

0. **Impaired**:
   No champion or commitment from a manager.

1. **Initiated:**
   Web Analytics is managed by a project manager.

2. **Operational:**
   Web Analytics is a director-level responsibility.

3. **Integrated:**
   Web Analytics is managed at the CXO level (often CMO).

4. **Competitive:**
   Web Analytics is managed at a senior CXO level and receives strong support from the CEO.

5. **Addicted:**
   Leaving the realm of "web analytics" and entering that of Davenport's "Competing On Analytics" at the "Analytical Company" or "Analytical Competitor" level.

Defining Objectives

Being "objective" refers to the notion of being "mind-independent", that is, "undistorted by emotion or personal bias; based on observable phenomena" (Princeton University n.d.).

Web analyst objectivity is important, and takes root in how "business objectives" are defined and managed.

Defining SMART objectives

Many credit Peter Drucker as being the originator of the SMART objectives definition. In management by objectives theory and project management, a SMART objective is one that is (Porter and Tanner 2004, 401):

Specific:
   Clearly specify what needs to be achieved and is sufficiently well defined to be understood by all stakeholders.

Measurable:
   It is possible to measure progress toward the objective.

Achievable:
   Is achievable and attainable considering the available resources: human skills, tools and technologies, financial investment, specified timeframe, etc.

Relevant:
   Add useful value within the context where it is being set. It is aligned with strategies and business goals.

Time-based:
   It is bound in time so that is a finite activity and can be controlled.

There are numerous variations on the SMART acronym. Recently, several other attributes have been suggested, making them SMARTER objectives (Morrison 2009):

Ethical/Exciting/Engaging:
   The objective meets both the organization and personal values of its stakeholders, is not unlawful and stands the test of "how would it look in the news?" It is also exciting and engaging: attracting and motivating enough to get the attention and energy it deserve.

Reviewed/ Resourced/Rewarding:
   Especially for complex or long lasting objectives, they should be reviewed from time to time to asses if they still bring the expected outcomes and are still relevant. Sufficient resources should be allocated to the task (this recoup the Achievable attribute) and it should be rewarding to those working on it.

The HiPPO influence

One of the consequences of being a new field of expertise is anyone and his dog can be an expert. HiPPOs, or Highest-Paid-Person-Opinion, is a term made popular by web analytics evangelist

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Avinash Kaushik. When defining the scope and objectives, risks are high that the most influential business people, be it because of their hierarchical or political position, will push the web analytics program toward directions that might be conflicting, too ambitious or illogic.

Along the way, HiPPOs might also overrule the fact-based analysis you have done with arbitrary decisions.

Kaushik (Kaushik 2007, 416) recommends a couple of counter measures:

- Get information and advice from outside consultant and independent benchmarks.
- Get competitive data. Again, this might be difficult to find and you need to be careful bringing just anecdotal information.
- Be customer focused and bring their voice to the table.
- Be transparent, ethical and rigorous in your metrics definitions and communicating results.

As Kaushik puts it, "the goal is to remove yourself or other entrenched opinions from the table, and let the data do the talking – not just any data, but data that is transparent, independent, has external context and, most of all, represents the customer's voice and actions".

WAMM Rating

This rating is based on objectives specifications, as follow:

0. Impaired:
Objectives are undefined

1. Initiated:
A Request or Task List is used

2. Operational:
The objective is to optimize the online marketing channel

3. Integrated:
The objective is to optimize the whole online channel, including multiple functions of the business

4. Competitive:
Online processes are optimized, and if needs be, offline processes are revised.

5. Addicted:
Leaving the realm of "web analytics" and entering that of Davenport's "Competing On Analytics" at the "Analytical Company" or "Analytical Competitor" level. The business strategy might be reviewed based on analytics.

Defining the Scope

In the movie "The Graduate" Dustin Hoffman is told the future is in plastics (YouTube 2007). The new plastic is data. Analytically competitive companies get it. As with plastics, what you do with data can be as simple or as sophisticated as needed.

Defining & Understanding the Online Ecosystem

An ecosystem is "formed by the interaction of a community of organisms with their physical environment" (Princeton University n.d.). A website is not a totally independent entity standing all by itself in the online universe.

Nowadays, websites are becoming even more complex; leveraging Web 2.0 concepts such as content reuse through RSS feed integration, video embedding, voice of customer and other tools. Software As a Service (SAS) are often used to handle shopping cart checkouts,

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highly interactive websites are developed for specific marketing campaigns, companies are developing a portfolio of websites to fulfill different product offering, markets and clientele. Be it news, partners, or competing web sites, they are watched and monitored.

All of these, depending on the sophistication level of your web analytics, can be measured, analyzed and acted upon. They might be tactical metrics, or they might be so important they have a presence on corporate dashboards and are identified as Key Performance Indicators.

Defining the scope is basically setting the boundaries of your playground. Will you focus on a single website, or even a specific area of a website, or are you trying to assess the position and performance of your corporation within the online universe?
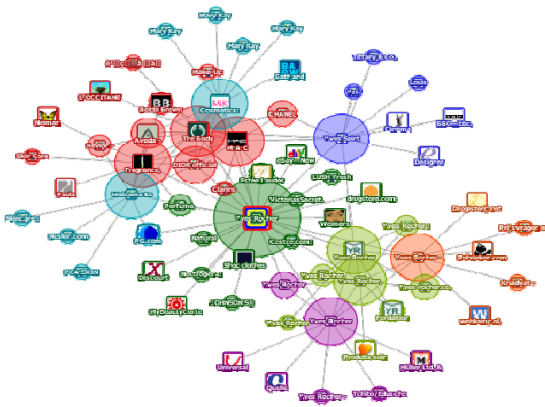

FIGURE 4: ONLINE ECOSYSTEM

The above graph, generated with the TouchGraph Google Browser[10], shows the numerous direct and indirect influences of websites surrounding the larger circle in the middle. Some of those sites are sister-sites managed by the company, while some others are

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[10] http://touchgraph.com

vendors, retailers, competing or government/regulatory organizations.

Basically, looking at the ecosystem helps identify and reveal some of the forces part of the marketing environment (Kotler and Cunningham 2004):

- Demographics
- Economic conditions
- Governmental environment
- Influential stakeholders
- Cultural and societal change
- Innovation
- Competitors

WAMM Rating

The Scope represents the size of the playground:

0. Impaired:
The field is undefined and scope changes as we go.

1. Initiated:
The boss, the person or manager with the most experience, strongest opinion or political control decides what needs to be done (HiPPO)

2. Operational:
The scope is limited to a specific online activity or sector, such as SEO or marketing campaign management.

3. Integrated:
All aspects of a single website.

4. Competitive:
The whole online ecosystem, possibly including multiple websites and other online activities such as social media and mobile, as well as intra/extranets.

5. Addicted:
Leaving the realm of "web analytics" and entering that of Davenport's "Competing On Analytics" at the "Analytical Company" or "Analytical Competitor" level. Online and offline

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processes are addressed, including several functions of the business.

The Analytics Team & Expertise

It is often tempting to dig for more data and find the ultimate argument. Analysis paralysis is a term that describes the result of an analyst over-analysing (University of British Columbia 2009). Analysis paralysis happens when the opportunity cost of decision analysis exceeds the benefits that could be gained by enacting some decision (Wikipedia n.d., Analysis paralysis). Basically, once you have gathered sufficient data to eliminate the impossible, you should be able to provide valuable insight and act upon it.

Web Analytics Competency Center

A Web Analytics Competency Center (WACC) essentially relies on three skill set dimensions:

Business

The ability to define & communicate the business strategy and goals as they apply to the online channel. It also implies a certain degree of "political acceptance" of web analytics value and benefits.

Technology

Technological competencies. Understanding the capabilities and constraints of the online medium, the information architecture and data models, the underlying concepts of instrumentation (tags, logs, probes, etc.) and business intelligence technologies.

Analysis

Applying an analytical mindset, a statistical approach, problem solving & synthesis skills to look into various type of qualitative or quantitative data provided by the supporting technology, back as insight & recommendations to the business. This is the "analytical acuity".
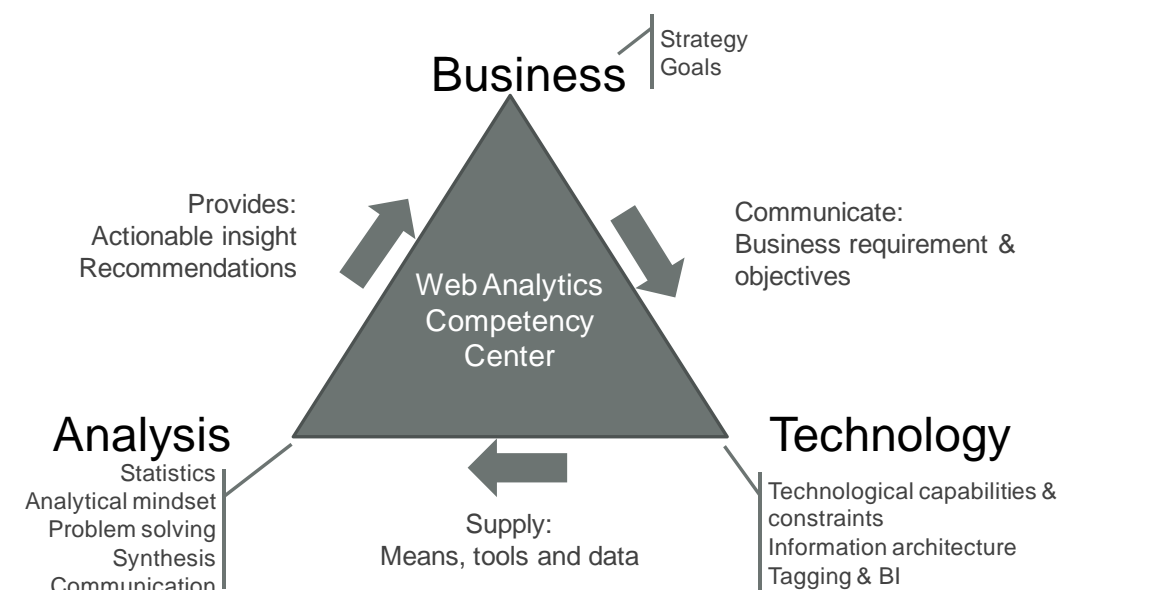
This can be summarized in the figure below:

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FIGURE 5: WEB ANALYTICS COMPETENCY CENTER

Borrowing from the SAS definition of a Business Intelligence Competency Center (BICC), we can define a WACC as being "a cross-functional team with a permanent, formal organization structure. It is owned and staged by the company and has defined tasks, roles, responsibilities and processes for supporting and promoting the effective use of (web analytics) across the organization." (SAS n.d.)

Those enterprises that have defined a WA competency center to leverage scarce skills, exploit the experience gained in analysis and align users with business objectives are much more likely to successfully deliver a web analytics strategy than those that deploy ad hoc teams for each project. (Rayner 2001)

Learn from Agile Product Management

To supervise the Competency Center, the product manager will be a member of either the marketing organization or the development organization who is responsible for ensuring that a product gets created, tested, and delivered on schedule and meets specifications. (S. Johnson 2009) It is a highly internally focused job, bridging the three dimensions together with a cohesive and sound management approach.

The role of the Web Analytics Product Manager is to (Olsen 2009):

- Be the expert on web analytics and business needs
- Translate business objectives into web analytics requirements
- Be the clearinghouse for all measurement and tests ideas
- Work with team to design, build & improve the web analytics implementations & practices

- Help define and track key metrics
- Identify, plan & prioritize activities to maximize ROI

WAMM Rating

The Team Expertise & Expertise rating reflects the relative size and ubiquity of analytical skills:

0. Impaired:
There are no dedicated resources.

1. Initiated:
Project team members are looking into analytics.

2. Operational:
There is at least one full time analyst with a "major" in two areas of competency and over three years of experience.

3. Integrated:
The team encompasses people from multiple backgrounds and experience levels but still have to develop specific competencies.

4. Competitive:
A centralized or distributed team is working as a Competency Center.

5. Addicted:
Leaving the realm of "web analytics" and entering that of Davenport's "Competing On Analytics" at the "Analytical Company" or "Analytical Competitor" level. Business users are trained and experienced and are mostly self-sufficient, relying on the Competency Center for specific inquiries.

The Continuous Improvement Process and Analysis Methodology

Einstein is credited to say "The whole of science is nothing more than a refinement of everyday thinking... To

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raise new questions, new possibilities, to regard old problems from a new angle, requires creative imagination and marks real advance in science" (BrainyQuotes n.d.).

Data and analysis brings knowledge and insight, and in turn, they initiate new questioning and possibilities. This continuous learning process should be structured and managed.

Six Sigma Methodology

Six Sigma is a set of practices aiming at systematically improving processes by eliminating defects. Six Sigma uses a handful of proven methods applied within a simple performance improvement model known as DMAIC:

Define:
Define the goal of the improvement or activity or opportunity. Those objectives should be SMART and KPIs are defined to measure progress toward the goal.

Measure:
Measure the existing system or process, and collect relevant data.

Analyze:
Analyze the data to eliminate the gap between the current performance of the process and desired goal. Cause and effect analysis, segmentation, slicing & dicing of data can be extensively used at this step.

Improve:
Implement or optimize the process, possibly using techniques such as multivariate-testing.

Control:
Control the new system to ensure that any deviation from the initial target are identified and fixed appropriately, and that no undesired side-effects results from those changes.

Some of the benefits of the Six Sigma approach are its simple yet rigorous approach, it's wide acceptance in several business types, and maybe most important of all, it is well suited as a continuous improvement process for the fast paced, constantly changing environment that are online initiatives.

Agile Approach

Coupled with Six Sigma, an agile methodology is by far preferable to the traditional waterfall approach. Commonly used for web development, resistance to agile methodologies are frequent when online processes are tied to back-end core business systems.

Basically, an agile methodology promotes a disciplined and structured approach that facilitates frequent inspection and adaptation, encourage teamwork and accountability, leading to quicker delivery and more reliable solutions. One of the most important benefits is also to deliver solutions that are closer to user and company expectations because process details are gradually and constantly improved until reaching the desired performance and quality objectives.

If a culture of continuous improvement, testing and performance accountability is to be developed, combining the concepts of Six Sigma and an agile approach are unavoidable.

One can hardly imagine identifying an improvement opportunity through quantifiable, fact-based metrics and wait until the next release cycle, sometimes several months under traditional conditions, to see some of the expected benefits. To make things worse, the additional knowledge and experience gained by a faster turnaround is rarely accounted for in project evaluation.

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Delivering sooner can also bring proportional benefits, even if not delivering 100% of the optimal solution.

Making the complex easier

"How do you eat an elephant? One bite at a time" and "It is not the strongest of the species that survives, nor the most intelligent, but the one most responsive to change".

The first quote speaks to the topic of achieving goals that from the onset may seem unattainable. Taking things one step at a time can help reduce the load and burden.

As in project management theory, one should identify milestones and deliverables, delineate steps and follow the progress, identify risks to eliminate (or reduce) negative impacts by using mitigation and contingency strategies.

Kaizen, the Japanese concept of "continuous improvement" which yields quality control, favor taking small steps to achieve a seemingly impossible goal.

The second quote easily applies to all aspects of web analytics, including marketing, economics and technology.

Time, Cost and Scope (the Triple Constraint Model[11]) are constraints on any project of any size. These are not static and usually change over the course of a project, a reality agile approach and a "functional" or "matrix" organizational structure can make significantly easier to manage.

Therefore, chunking up objectives and projects into smaller phases can help provide better control. Setting SMART objectives is also easier at a smaller scale. It provides the team and the stakeholders with a sense of

accomplishment and fulfillment as results are routinely delivered. Continuously triaging and effectively diagnosing problems with effective solutions and rework is all part of following a process where time, costs and scope may often change.

WAMM Rating

This dimension is graded according to the processes and methodologies in place to do web analytics:

0. Impaired:
There is no methodology defined.

1. Initiated:
The analyst is using a methodology of his own.

2. Operational:
Department/team methodology.

3. Integrated:
A continuous improvement process is in place and the methodology is defined from industry best practices, such as SixSigma.

4. Competitive:
An agile methodology is flexible enough to allow for multivariate-testing and faster ROI.

5. Addicted:
Leaving the realm of "web analytics" and entering that of Davenport's "Competing On Analytics" at the "Analytical Company" or "Analytical Competitor" level. The whole organization is taking fact-based decisions and can adapt rapidly to the evolving competing environment.

Tools, Technology and Data Integration

Web analytics tools are just that: tools. They provide no information about context and business strategy. It is the

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[11] See http://en.wikipedia.org/wiki/Project_management

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analyst's responsibility to turn metrics into actionable insight.

Tools Maturity

The web analytics industry is out of its infancy and entering adolescence. Tools vendors at the lower end are striving to innovate and offer added value in the face of Google's giant analytics offering. At the other end of the spectrum, traditional tools vendors are fiercely competing against each other and alliance and consolidation are still going on.

Web analytics often suffers from a multiplicity of siloed islands of data. Web analytics provides clickstream data, ad networks provide clickthroughs, polls and surveys provide voice of customer data, etc. Like a scientist observing phenomena using different methods and instruments, web analytics shouldn't be limited to quantitative data collected from user clickstream. Kaushik popularized the concept of "multiplicity", promoting cross pollination of sources leading to insight (Kaushik and Waisberg, Web Analytics 2.0: Empowering Customer Centricity 2009). Analytics relies on a vast number of tools and services including advanced analysis such as session recorders, heat and click maps, experimentation and testing, voice of customer, competitive intelligence, and of course, call center and core systems data.

While most analytics going on today aims to analyze past behavior in order to identify patterns and correlations to optimize marketing activities, the higher end of the maturity ladder makes extensive use of the tools in order to optimize business processes and even influence strategic orientation of the business.

At the topmost level, the development of predictive models to exploit patterns found in historical data also helps identify risks and opportunities. Predictive analytics drives decision making (automated or not) in order to improve outcomes.

WAMM Rating

The last of the key success factors are the Tools, Technologies and Data Integration. To grade this dimension we borrow heavily from the work of Bill Gassman at Gartner:

0. Impaired:
Characterized by a severe lack of data gathering tools, incomplete or improperly configured implementation and/or a lack of standardization.

1. Initiated:
Web Metrics, no specific customization of the tool, often IT driven, "feel good" information like Visits and Top 10s.

2. Operational:
Online behavior optimization, Key Performance Indicators and Dashboards are being defined and some experimentation is going on (A/B testing). Analysis might include some level of multi-source information but they are not integrated (for example, looking at social media stats without correlating them with business outcomes).

3. Integrated:
eMarketing optimization. For ecommerce, merchandising is being optimized, segmentation is the norm, personas and persuasion architecture are defined, and KPI alerts are set.

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4. **Competitive:**
Customer Relationship Management. Mutli-channel aggregation is going on in order to give a 330° view of the customer (with 30° retained for privacy), tools for behavioral targeting are in place. Processes are mapped out and analyzed for potential optimization.

5. **Addicted:**
Leaving the realm of "web analytics" and entering that of Davenport's "Competing On Analytics" at the "Analytical Company" or "Analytical Competitor" level. This level matches the Corporate Performance Management level and implies multi-channel integration, activity-based costing and predictive analytics that can contribute to strategic orientations.

Applying the WAMM

Good judgment should always prevail. The WAMM is primarily an assessment and change management tool revealing the "footprint" of your analytics maturity. Overly looking at the small details can blur the larger picture, the complex interactions between all elements of a successful analytics program.

Judge and Jury

Like any other model, professional judgment is critical when using the Web Analytics Maturity Model. Avoid being both judge and jury; that is, doing a self-assessment of your web analytics maturity is fair, but an independent, external and neutral voice is much better.

Although the model defines the attributes and behavior typically exhibited by organizations, all practices must be interpreted using an in-depth knowledge of the WAMM, the organization, the business environment, and the circumstances involved.

Getting to the next level

The following guidelines will help gradually move forward in the maturity model:

Executive level support:

Find somebody upstairs that understand what you, the analyst, can offer. While companies at the highest level say "if we can't measure it, we don't do it", this is rarely the case at the earlier stages. This relates back to the "Champion" role and the ability to communicate effectively.

Grass roots/bottom-up support:

Show people who are actually doing the work how analytics can help them. This relates to the "Roadmap" and a sense of empathy.

Culture of experimentation:

Some people might feel threatened by the fact metrics reveal a lot. You are not there to assess their work, but to offer alternatives. This relates to the concept that "Metrics are ridiculously political" and how important change management is.

Low hanging fruit:

Find the success stories, share them and discuss them. There is no silver bullet and success comes from small, continuous small successes.

Salesmanship:

Evangelize, explain, help, support.

Regardless of the maturity level, the web analyst's role is not about having all the answers; it's about asking the right

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questions and bringing insight. Constantly ask the following:

- What's the goal?
- What's the problem?
- What's the root cause?
- How might we measure that?
- What can we learn from the results?
- How can we act on the results?

A pitfall of the web analyst role is to become a reporting junkie merely serving data. Analysts must take ownership and control the problem definition in order to avoid stakeholders' questions lacking substance such as "I want to know the number of visits to our site".

Essentially, the analyst needs to speak the language of its stakeholders; the business dimension in the competency center viewed previously.

Conclusion & Request for Feedback

Jim Sterne, founder of the Web Analytics Association and producer of the eMetrics Summit recently revealed that "it was a mistake to call it web analytics, it is business analysis".

Let's not forget analytics is the science of analysis, which aims to "arrive at an optimal or realistic decision based on existing data" (Wikipedia n.d., analytics). In turn, analysis is "the process of breaking a complex topic or substance into smaller parts to gain a better understanding of it" (Wikipedia n.d., analysis). We have the essence of the web analyst role: make the complex easier to understand and drive decision making based on data.

The Web Analytics Maturity Model serves the purpose of demystifying web analytics, making it easier to understand and execute by highlighting the most important critical success factors. While the actual state of the industry mostly aims to optimize online marketing activities, the future will certainly value the benefits of business analysis and process optimization that are outside the realm of online marketing.

The proposed model is the result of a thorough and extensive literature review, conference speaking, and peer discussions. Feedback is positive and clearly highlights the interest and need for further research.

In the meantime, the Web Analytics Maturity Model can contribute to the advancement of the field by providing a an easy communication and change management framework, which in turn, will facilitate a managerial and strategic approach to web analytics.

Request for feedback

This paper is a summary of an eighteen months eBusiness MBA project (Laval University, Québec, Canada). It is the result of years of experience, countless hours of studying, reading and exchanging with fellow web analytics practitioners, managers, consultants and vendors.

Web analytics is still a small, fast-paced industry with a relatively small community of practitioners; collaborating and reaching out is easy. Any feedback you have is welcomed and much appreciated.

For further information regarding the WAMM, feedback & comments, future research, including speaking, consulting and training, contact:

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Appendix I: Reviewed models

Capability Maturity Model Integration (CMMI) from the Software Engineering Institute at Carnegie-Mellon University, initially developed in 1989. http://www.sei.cmu.edu/cmmi/

The Data Warehousing Institute Business Intelligence Maturity Model, 2005. http://www.tdwi.org/

Jupiter Research (now Forrester) "Framework for using data to drive business success", 2005. http://forrester.com

Stratigent Marketing Analytics Model, 2007. http://www.stratigent.com/

Gartner's Maturity Model for Web Analytics, published in 2008. http://www.gartner.com/

Thomas Davenport's maturity by stages in "Competing on Analytics: the new science of winning", 2008.

WebTrends Digital Marketing Maturity Model (DM3), published as a draft in 2009. http://www.webtrends.com/

Complete Web Monitoring, by Croll & Power, published in 2009. http://oreilly.com/catalog/9780596155131/

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Appendix III: Web Analytics Maturity Model Worksheet

Management Governance Adoption
5. Competing on analytics
4. Culture
3. Senior management
2. Director
1. A project
0. No champion

Objectives
5. Competing on analytics
4. Business Optimization
3. eBusiness Optimization
2. eMarketing Optimization
1. Request list
0. Undefined

Tools, technology & data integration
Strategic .5
CRM .4
eMarketing .3
Behaviour Optimization .2
Web metrics .1
No web analytics .0

Scope
5. Competing on analytics
4. Online ecosystem
3. Single website
2. Specific online activity/sector
1. HiPPO
0. Improvisation

Continuous Improvement Process & Methodology
Agile approach .5
Agile methodology (online) .4
Continuous improvement process .3
Department/team metho .2
Analyst's own .1
No methodology .0

Team & Expertise
Experienced & empowered .5
Multidisciplinary .4
Distributed team .3
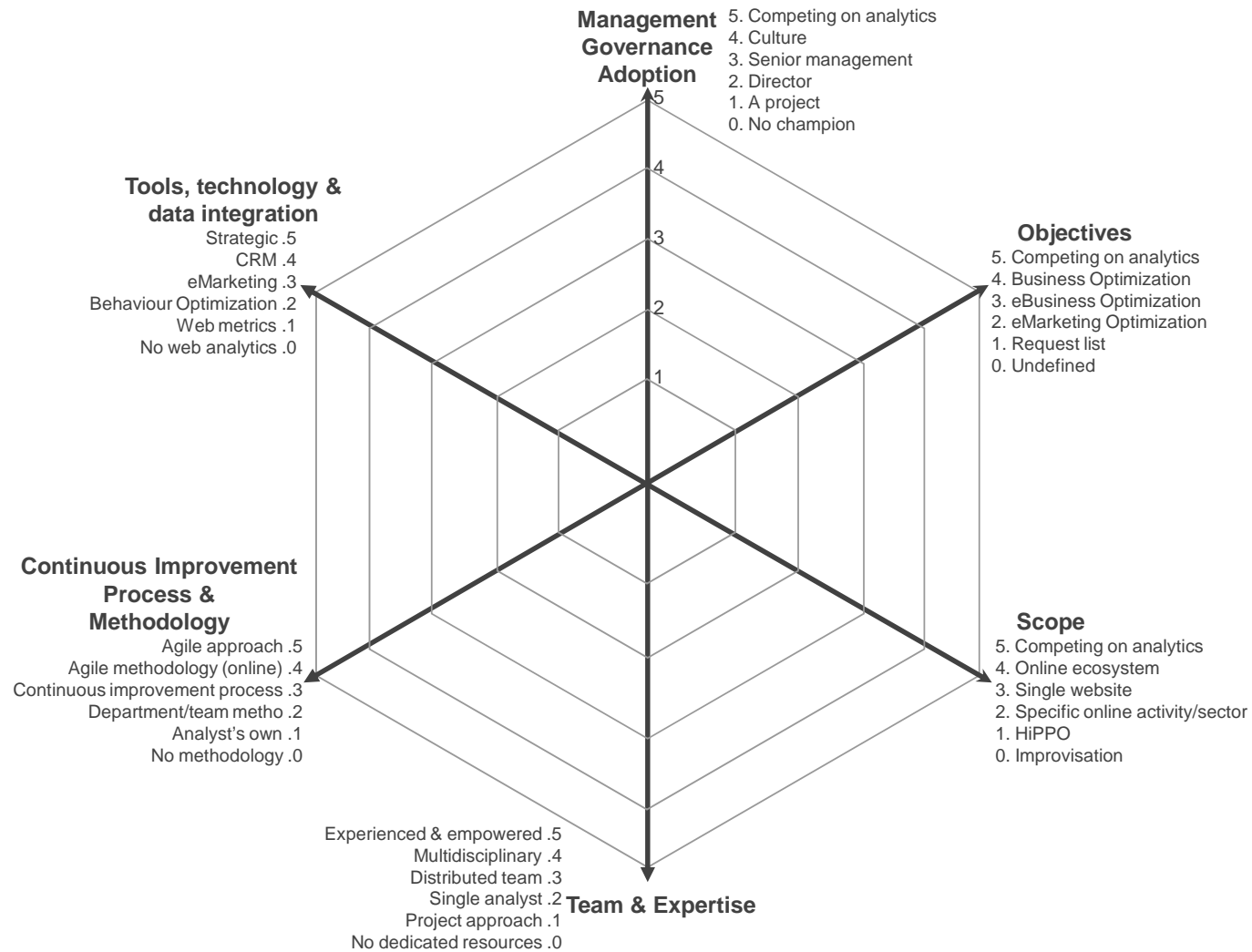Single analyst .2
Project approach .1
No dedicated resources .0

FIGURE 6: WEB ANALYTICS MATURITY MODEL WORKSHEET

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