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**Show Me the Money: Improving our Understanding of How
Organizations Generate Return from Technology-Led-
Marketing Change**

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Review

CONFLICTED MARKETING SCHOLARSHIP

Almost 30 years ago, Berry presented a paper at the American Marketing Association (AMA) Service Marketing Conference merely entitled “Relationship Marketing” marking the first time that this term appeared in academic publication (Berry, 2002). It catalysed a rethinking of marketing, spawning a transformation (Parvatiyar & Sheth, 1997; Gronroos, 1994) from its roots in economics – explaining exchange (Bagozzi, 1975; Kotler, 1972) – to a social phenomenon whose ultimate goal is to co-ordinate resources with customers in the creation of use-value. Consequently, marketing practice is increasingly conceived as service and relationship based (Vargo & Lusch, 2004).

Advocates of this perspective argue that whilst firms have always wanted to engage with customers interactively, it is only with modern technology (e.g. internet, databases, call centres, email, workflow, mobile apps, analytics, search and social media) that large firms can replicate the personalised service traditionally the providence of small service firms and local retailers. Information technology¹ (IT), it is argued, particularly packaged customer relationship management (CRM) software, is a catalyst for change in how firms relate to their customers (Peelen *et al.*, 2009), allowing firms to create service-based offers that deliver greater use-value for customers whilst simultaneously increasing firms’ profit (Lusch *et al.*, 2007). More recently, social media technologies are transforming intimate buyer-seller relationships into a community phenomenon.

In addition to its impact upon relationships, managers assume that IT-enabled marketing provides more measurable and visible outcomes and thus improves marketing accountability. For example, CRM systems purport to allow marketers to calculate the return on investments in marketing initiatives (Sheth *et al.*, 2000) with greater precision than was the case with traditional mass marketing (Stewart, 2009). This is important, as for decades,

marketers have been trying to be more accountable yet marketing remains heavily criticised for its inability to present compelling evidence of the effectiveness of the huge sums it directs to promotion and brand building (Verhoef & Leeflang, 2009). Indeed, this perceived lack of accountability is linked to a reduction in marketing's influence in strategic decision-making (Verhoef *et al.*, 2011; Webster *et al.*, 2005; Webster 1992).

Despite the increasing spend on IT-enabled marketing initiatives, we have this conundrum where marketing scholarship continues to question the returns achieved from such investments. For example, studies of CRM are often prefaced with assertions expressing serious concerns about the value of these investments (Chang *et al.*, 2010; Krasnikov *et al.*, 2009; Homburg *et al.*, 2007; Ryals, 2005; Srinivasan & Moorman, 2005; Hagel & Singer, 1999). Marketing scholars acknowledge that extant research has produced "inconclusive findings" (Ernst *et al.*, 2010, p. 293) and comparing CRM with other enterprise-wide IT programmes, Hendricks *et al.* (2007) conclude that CRM alone impacts neither business performance nor share price. Yet CRM itself is grounded in a substantive relationship marketing literature and correlated to customer satisfaction (Mithas *et al.*, 2005), itself linked with performance improvement (Gruca & Rego, 2005), share price increase (Fornell *et al.*, 2006) and important intermediate marketing goals such as customer and brand equity development, purchase intent and retention (Gustafsson *et al.*, 2005; Seiders, Voss *et al.*, 2005; Lam *et al.*, 2004; Fornell *et al.*, 1996). If investment in CRM technology is so widespread, and the relationship marketing it facilitates such an important managerial goal, why then are marketing scholars unable to determine if it even "works"?

This question is particularly topical when so many companies are investing in the next waves of technologies for marketing, such as, social media, analytics and initiatives to address "big data"²: will marketing scholars be having a similar discussion in the future about the return on these initiatives too? Is IT-enabled marketing destined to be an expensive cost-

of-doing business to meet customers’ ever-rising expectations of service quality with no incremental return (Dowling, 2002)? Or, is there a differential impact upon business performance that we should be able to assess better and therefore improve how we generate positive outcomes from these investments? Research analyst Gartner predicts that by 2017, marketing departments will outspend Information Systems (IS) departments in the purchase of IT (Arthur, 2012) and therefore it is reasonable to expect that marketing departments should enhance their capabilities with respect to estimating and realising benefits from IT-led marketing investment. IS scholars have grappled with understanding the impact of technology investment upon performance for much longer, and with more urgency, than have their marketing colleagues. In this light, we ask if the marketing discipline might learn from IS scholarship in realising the benefits of IT investment in marketing initiatives?

This article is structured as follows. It first explores the inconclusive results from empirical evidence of CRM’s impact published in leading marketing journals. It then identifies conceptual and methodological limitations of extant research, which we suggest reflect an incomplete understanding of how IT-enabled marketing initiatives generate business value. Next, we contrast this with comparable research conducted by IS scholars because examining the payback from technology led change is core to their research. We identify the more varied methods and ontologies used and conclude by identifying what marketing researchers can learn from IS scholarship to improve the assessment of IT-led marketing initiatives and hence improve the advice that they can provide marketing practitioners.

MARKETING SCHOLARS' ASSESSMENT OF CRM'S IMPACT ON BUSINESS PERFORMANCE

It is our contention that the marketing literature models *what* generates CRM business benefits but lacks the understanding of *how* the expected benefits of IT investments are realised. Knowing both *what* and *how* will enable marketing leaders to set appropriate measures of success and design and manage investments to maximise their return. We develop our arguments in the context of Customer Relationship Management (CRM) programmes. Such investments are an appropriate lens for understanding and managing the benefits to an organization of IT enabled marketing innovation for the following reasons:

CRM forms a base upon which further customer marketing activities are built. Customer experience management and social media engagement, for example, rely on key elements of CRM such as customer contact management and cross-channel integration.

It is the most mature of the IT enabled marketing practices. CRM is well established across most large businesses and widely researched. Nearly a decade ago Payne and Frow (2005) estimated that the total investment in CRM, inclusive of management changes associated with it, had reached over \$200bn globally. Forbes (Columbus, 2012), citing Gartner figures, estimated that the 10 leading CRM vendors sold \$12 billion worth of software in 2011 alone.

For most firms, the volume of data that must be stored and analysed makes it imperative to implement customer strategies in conjunction with technology (Rigby *et al.*, 2002). This is only getting more challenging as organizations look to combine internal structured data with externally sourced sentiment, social data and other unstructured datasets.

CRM is thus the technology based element of a broader relationship marketing concept (Payne & Frow, 2005).

Method for Reviewing Marketing Scholars’ Assessment of CRM’s Impact

To build the foundations of our arguments, we followed a systematic review protocol (Tranfield *et al.*, 2003) to analyse the literature that examines empirically the impact of CRM investment on business performance from both IS and marketing domains to contrast them. To select articles from marketing scholars for inclusion in this study, we searched EBSCO and ProQuest electronic databases using terms: “CRM” or “Relationship Marketing” or “Customer Relationship Management” and “ROI” or “ROA” or “business performance” or “financial return” or “cost” or “profit” or “firm performance” or “organ* performance” or “company performance” or “market performance”. Whilst there is considerable breadth of definition of CRM, the field is sufficiently established that researchers use the designation by its name or its initials. To be thorough, we also search by the term “Relationship Marketing” which preceded the development of widely accessible CRM technologies.³

We restricted our study to papers published in very highly ranked marketing journals: *Journal of Marketing*, *Marketing Science*, *Journal of the Academy of Marketing Sciences*, *Journal of Service Research*, *International Journal of Research in Marketing*, *Journal of Product Innovation Management* and *Journal of Business Research*. We also included selected reports from the *Marketing Science Institute (MSI)* due to the Institute’s long-standing focus on marketing measurement and accountability. We made this choice for practical reasons; the focus of the article is upon contrasting scholarship traditions and these are, on judgement, the most relevant high impact marketing journals in the area. Using the

same search terms against all peer-reviewed articles generates over 11,000 hits on ProQuest; this is not manageable.

We define performance as either financial or market related. For financial performance we include studies of ROI, ROA or profit: absolute levels thereof, changes due to the investment or comparisons against competitors or industry averages. For market performance we include market share and incremental sales attributable to CRM investment. We exclude studies that define performance by intermediate marketing objectives alone such as loyalty, recommendation, engagement, commitment or satisfaction. Whilst these constructs have been demonstrated, often with moderators and limitations, to improve financial performance, we restrict our study to direct measures of CRM performance: marketing is continually asked to “speak the language of the Board” and it is consistent with our intended contribution to address this limitation. Studies reporting performance as defined above sometimes include intermediate measures of performance and this did not disqualify such studies from being included in our analysis. We excluded conceptual articles that do not provide empirical analysis of the link between CRM and performance. We also exclude studies that define performance with respect to individual customer profit or growth, seeking to relate CRM investment to a firm’s overall performance. We do not include studies of not-for-profits as the definitions of performance would not be commensurate with those used in the vast majority of studies, which look at commercial firms. The search was limited to articles published from the year 2000.

We first search the abstracts of EBSCO and ProQuest databases for the time period 2000 to April 2014, generating 26 and 29 hits respectively. There was considerable overlap, EBSCO added only five titles to the ProQuest list. The search of the abstracts resulted in a full review of 15 articles of which nine were included in the final study. We ran the same

search strings against any text in both databases generating 473 and 407 hits against EBSCO and ProQuest respectively. We looked at the titles and summary of each article in that search to ensure that we had not missed any relevant publications. This generated only three further articles for full assessment, none of which were included in the final study. There are two MSI articles identified separately and four articles identified by the authors added on the basis of judgement. Such judgements on inclusion and assessment of impact are necessary even from the perspective of advocates of systematic forms of literature review in order to avoid the process becoming overly mechanistic (Dixon-Woods *et al.*, 2006). Table 1 lists the marketing studies included in our analysis.

Typically, systematic reviews generate more articles and cover a more substantive and broadly-based literature. We chose, purposefully, strict criteria and that limits the number of studies. The marketing journals chosen may have a preference for generalisable findings generated through quantitative research; although their editors would almost certainly maintain that they review all rigorous work irrespective of method. These factors may exaggerate the extent to which marketing scholars rely on limited methods.

Insert Table 1 about here

Discussion of the Marketing Literature

Table 2 reveals that of the 15 marketing studies analysed, only one makes a strong claim that CRM improves performance in most cases (Krasnikov *et al.*, 2009), one suggests that its impact is sometimes positive (Palmatier & Gopalakrishna, 2005) and two find no systematic link between CRM and performance. Eleven papers find that CRM’s impact is mediated by either the development of dynamic capabilities for managing customers (seven),

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3 firm strategy (two) or impacts performance in conjunction with complementary marketing
4 capabilities such as brand management or market sensing (two).
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10 *Insert Table 2 about here*
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14 Four articles report that managers question the value from their CRM investments.
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16 These claims are based upon older (pre 2004), non-peer reviewed surveys published by
17 commercial research firms.⁴ In this genre is the *Harvard Business Review* article of Rigby
18 (2002), cited almost 600 times as of writing this article (source: Google Scholar), reporting
19 that most CRM initiatives fail, using Gartner and META reports as evidence.⁵ Ang and Buttle
20 (2006) also report that managers are disappointed with CRM investment outcomes and
21 support this via similar assertions appearing in other peer reviewed journals. However, those
22 source articles also rely upon similar, historical commercial research. We believe that such
23 surveys represented the state of practice during the early adoption of CRM and there is
24 evidence that firms extract increasing benefit from CRM over time – themes to which we
25 return later in discussing the “latency” of benefits realised from IT investments (Seddon *et*
26 *al.*, 2010; Krasnikov *et al.*, 2009; Devaraj & Kohli, 2003).
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41 The most frequently used data collection method in the studies we reviewed is cross-
42 sectional survey of managers (usually referred to as expert informant research) who self-
43 assess the performance and outcomes of their CRM systems. Only in four of 15 articles could
44 we observe the use of objective, third party reported measures of performance. Most address
45 potential common method errors with statistical tests and some researchers separate their data
46 sources for dependent variables from the independent variables as urged by the literature
47 (Podsakoff, *et al.*, 2003). Overwhelmingly, CRM or the CRM capability measure, is based on
48 expert informants’ self-assessment of the relevant practices, often compared with
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competitors. Notwithstanding, we remain sceptical of self-reporting, particularly when asking managers to compare their firms’ performance to industry average or competitors; later in this paper we question the validity of such data. The data collected in the papers analysed are modelled mostly through pathway analysis, either Structured Equation Model (SEM) or Partial Least Square (PLS). Regression is used in four studies, and Linear Hierarchical Modelling (LHM) in two.

Table 3 presents measures of CRM performance used as exogenous variables in modelling and or regression analysis. They add to more than 15 as most authors use more than one measure of CRM performance. Profit, Sales and Return on Assets (ROA) dominate, but Table 3 masks some of the variation of exogenous variables by lumping together profit with incremental profit, sales and sales growth for example. Return on Investment (ROI), despite clamours for “speaking the language of the Board”, is sparsely used.

Insert Table 3 about here

Marketing Scholars Assume “Flat” Benefit Realisation

Despite its maturity as a field of study, the assessment of CRM investment is somewhat confused. If there is agreement, it is that it is difficult to attribute business performance to CRM directly. Rather, it enables the development of improved marketing capabilities and it is these capabilities that can lead to improved business performance (Maklan *et al.*, 2011; Maklan & Knox, 2009) that is, the research determines a range of capabilities that should generate business results. However, the research reviewed does not reflect *how* CRM investment leads to results. It tends to ignore a multi-stage process of investing in CRM assets, developing capabilities and then exploiting those capabilities for profit. CRM has a contingent reality rather than the simple input-output logic that dominates

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3 thinking about returns on marketing investment (Sevin, 1965). Studies linking CRM
4 investment to return review the literature to define CRM activities against which cash flows,
5 or other measures of success, can be attributed. For example, in developing CRM capability
6 scales, managers are asked to assess how well they provide sales staff and personnel with
7 customer information, the extent to which their organization is customer centric
8 (Jayachandran *et al.*, 2005), establish a dialogue with customers (Orr *et al.*, 2011; Vorhies *et*
9 *al.*, 2010; Morgan *et al.*, 2009), systematically gather data about customers (Homburg *et al.*,
10 2007) and/or identify and manage profitable customers selectively (Ramani & Kumar, 2008).
11 Whilst such attributes may evident customer relationship capabilities, such research provides
12 only a “flat” snapshot rather than a trail of evidence as to exactly how benefits are realised.
13 Benefits from CRM investment are layered and contextualised by the objectives of the
14 managers and social relationships with customers (Peppard & Ward, 2005). CRM
15 programmes provide data, tools and operational capability with which marketers can augment
16 relationships, insight and imagination to build the more strategic dynamic capabilities that
17 leads ultimately to enhanced business performance (Teece, 2007; Zollo & Winter, 2002;
18 Henderson & Cockburn, 1994).

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Scholars rarely contextualise the objectives of CRM with the notable exception of
Reinartz *et al.* (2004) who explicitly recognise the differing marketing objectives of customer
acquisition, development and termination; these constructs, albeit modified, are also used by
Reimann (2010). Whilst the literature suggests that CRM must align to business strategy,
survey-based instruments ask all respondents to assess strategies generically: up-sell, cross-
sell, identify profitable customers and increase retention. None of the selected studies sample
for industry and competitive contexts, and firms marketing objectives’ may be as different as
their individual strategies as much as they reflect industry factors. Indeed, only three of the
studies survey within one industrial context: Jayachandran *et al.* (2004) sample retailers,

Krasnikov *et al.* (2009) study US commercial banking and Coviello *et al.* (2006) restrict their investigation to the tourism accommodation trade in Western Canada. In their desire for generalisability, most researchers assume a unitary concept or scale measure of CRM appropriate across all firms.

Whilst learning about customers is identified as a major benefit of CRM investment, its assessment is almost always self-reported and used in scale development. Table 4 identifies key items comprising CRM constructs found in the research examined. There is great variation in the attributes used. From our analysis, there is an over reliance on self-reported data that requires substantial judgment on the part of respondents and entails considerable risk of measurement error (Burton-Jones, 2009; Sharma *et al.*, 2009; Podsakoff *et al.*, 2003; Cote *et al.*, 1987) despite the use of mitigation strategies or statistical tests from which some authors assert that common measurement error is not evident (Burton-Jones, 2009). Mezas and Starbucks (2003) present empirical evidence that managers are generally poor at assessing their environment and performance relative to it. Their study is consistent with the established literature of Behavioural Decision Making (BDM), which concludes that managers make decisions more on the basis of heuristics than with accurate assessments of their environments and competitiveness (Maule & Hodgkinson, 2003). These heuristics lead to cognitive biases that do not correct over time (Tversky & Kahneman, 1974).

Insert Table 4 about here

**ASSESSING RETURNS FROM IT INVESTMENTS: AN INFORMATION SYSTEM
PERSPECTIVE**

To provide an alternate perspective to the marketing literature we looked at how the Information Systems discipline conducts research exploring the return from IT investments.

Methodology

The relevant literature was identified following a similar approach to that for the marketing literature and is summarised in Table 5. The selected studies necessarily focus on outcomes across different types of IT investment, of which CRM is one amongst other enterprise-wide systems that include supply chain (ERP), financial and human resource management systems (Hendricks *et al.*, 2007). The Information Systems literature search presents certain challenges for this paper. A recently published review of IS business value research (Schryen, 2012) identifies only 22 empirical studies that analyse the impact of specific types of IS assets, such as CRM or ERP with the latter being the most popular. This narrows the list of studies relevant to the paper. The authors cite Aral and Weill (2007), suggesting that IS mostly looks at its performance in the aggregate (e.g. “IS investment”) whereas firms invest in different applications with unique contextual and strategic imperatives. The second challenge is lack of a consistent, accepted definition(s) of IS business value (Schryen, 2012; Oz, 2005) making it necessary to use a wider range of terms to represent the impact of CRM investment in our search strings. To the definitions of business performance we added words commonly used in the relevant IS literature: “benefits realisation” (both UK and US spellings), “payoff” and “firm performance”. To the list of CRM terms, we added “enterprise systems” as that is how the IS field would classify CRM as well as the more generic “information technology investments”, “IT investments” and “IS investments”. The journals searched are *MIS Quarterly*, *MIS Quarterly Executive*, *Operations Research*, *Journal of Operations Research*, *Journal of Operations Management*, *European Journal of Information Systems*, *Information Systems Journal*, *Information Systems Research*, *Journal of Management Information Systems* and *Journal of Change Management*. The

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3 authors judge this to be an equivalent set of high impact IS journals (journals dealing with IS
4 matters) to those listed in the marketing literature search. Whilst IS issues are often discussed
5 in operations journals, only one of the final articles included in the study was from operations
6 and one from change management so the comparison is largely between marketing and IS
7 literature.
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14 As with the marketing literature, we first searched in the abstracts of EBSCO and
15 ProQuest from the year 2000. This generated 51 and 23 hits respectively; 12 were
16 downloaded for fuller inspection and five were included in the final study. We then ran the
17 search against any text and generated 714 hits in EBSCO and 211 in ProQuest; two further
18 studies were included from that wider search. The authors, based on their familiarity with
19 subject matter, added six further studies generating a total of 13 studies. One study outside
20 the date range was included, Hitt and Brynjolfsson (1996) because it defines the so-called
21 productivity paradox of IT investment not leading to overall improvements in productivity
22 and is almost always cited as the starting point in IS articles about the return on IS
23 investment.
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37 *Discussion of IS Literature*
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41 This literature parallels that from the marketing discipline in two key aspects. Early
42 research into the return on IS investment generated inconclusive results (Zablah *et al.*, 2012;
43 Seddon *et al.*, 2010; Goh & Kauffman, 2005; Hitt & Brynjolfsson, 1996) leading the Nobel
44 laureate Robert Solow to comment in 1987 that he saw computers everywhere “*except in the*
45 *productivity figures*” (cited by Brynjolfsson & Hitt, 1998).⁶ A meta analysis of enterprise
46 software implementation also found that CRM failed to affect business performance
47 (Hendricks *et al.*, 2007), although the authors admitted that at the time of the study, CRM
48 was a fairly new application versus ERP systems for example. This is similar to the
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conclusions of survey-based, managerial enquiries as to CRM effectiveness described previously. IS and marketing scholars also coalesce on a resource-based view arguing that it is not the (CRM) technology alone that generates a return, rather it is the development of capabilities enabled by the technology that together lead to the achievement of performance improvements. However, whilst marketing scholarship generates scales of customer-relating capabilities, IS research emphasises the development of a broad range of complementary capabilities (Hughes & Scott Morton, 2006; Melville *et al.*, 2004), business process change (Brynjolfsson & Hitt, 2000) and the strategic flexibility (Mithas *et al.*, 2012) that results from IT investment, which together improves business performance. In addition, the IS literature identifies that different customers will react differently to investments in CRM and different strategies (improved interactivity versus prioritisation of customers) impact performance differently (Zablah *et al.*, 2012). In short, technology is seen merely as an enabler of broader organizational changes that are required if a CRM implementation is to be successful.

Therefore, in addition to identifying the need for complementary capabilities, IS scholars also focus on the process of *how* these capabilities will be developed and expected performance improvements achieved (Mithas *et al.*, 2011; Ashurst & Hodges, 2010; Braun *et al.*, 2010; Santhanam & Hartono, 2003). This is a shift in research focus away from the nature of the IT solution (i.e. CRM software) to a focus on expected benefits from an investment and how they can be realised. The marketing and IS literatures diverge in how they research and contextualise these capabilities. IS researchers acknowledge the dynamic and contingent nature of CRM benefits in their research design. They also acknowledge the role of strategy and the competitive environment in their research, something that surprisingly is under-represented in marketing's scholarship.

IS Scholarship sees IT Enabled Change as Generating Layered Benefits

The IS literature has a tradition of trying to understand *how* investments in “general purpose technologies” (Brynjolfsson & Hitt, 1998) such as CRM, generate long term performance improvements for firms. It considers the input-output perspective suspect (Kohli & Grower, 2008), particularly when output is defined through short term, financially defined measures of performance and the inputs measured fail to capture the full extent of the organizational development required for IT-enabled change (Brynjolfsson & Hitt, 1998). When assessing the impact of investment, IS scholars acknowledge, far more than do their marketing colleagues, the need to value its contribution to strategic flexibility (Benaroch, 2002; Bharadwaj *et al.*, 1999), the significant time lag between investment and performance improvements (Seddon *et al.*, 2010; Brynjolfsson & Hitt, 2000; Devaraj & Kohli, 2000) and the contingent or non-automatic harvesting of any expected value (Goh & Kauffman, 2005; Melville *et al.*, 2004). CRM benefits have been profiled by IS scholars as first generating operational improvements in customer analysis, channel management and service quality that provides a platform for subsequent strategic changes in customer relationships that can unlock larger customer and company value (Hughes & Scott Morton, 2006) such as more focused targeting of promotions and personalisation.

A “flat” approach to discounting identifiable cash flows from an initial CRM investment generates a “passive” net present value (Benaroch, 2002) that fails to value the strategic flexibility that the investment provides. Real options can value flexibility (Kohli & Grower, 2008; Benaroch *et al.*, 2007); a concept which has been developed into a generalised framework for incorporating the contingent nature of IS benefits into business cases (Benaroch *et al.*, 2007). Options also place a financial value on learning about customers prior to committing to the full CRM investment. As CRM programmes unfold, some options will not be taken up whilst others are pursued based upon customer insight generated by the

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3 initial IS investment (Maklan *et al.*, 2005). This process takes considerable time and
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5 conscious, goal directed management.
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8 In our review of the literature, surveys asking managers to assess their CRM returns
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10 rarely account for the maturity of the CRM investment in question, a limitation of cross-
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12 sectional data acknowledged overtly by Ernst *et al.* (2010). When modelling CRM outcomes,
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14 most marketing studies make an assumption as to the time lag between investment and return.
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16 However, the length of time is rarely discussed in detail and almost always a matter of
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18 quarters, whereas IS scholars suggest that maximising the benefits of investments can take
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20 several years (Hendricks *et al.*, 2007; Brynjolfsson & Hitt, 1998). For example, Goh and
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22 Kauffman (2005) assert that to unlock the value of IT enabled change, management must
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24 actively move between three stages of latent value realisation: dormancy, trigger and
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26 transformation. Moving between stages is similar to overcoming hurdles with the goal of
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28 realising ever-higher levels of performance improvements from IT led change.
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32 The “general purpose nature” of technology is therefore operationalised by IS
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34 scholars as having latent benefits, emerging over time as a function of the strategic options
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36 exercised. Performance improvements, including competitive advantage, arises from a
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38 benefits realisation capability comprising the management of complementary resources,
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40 partners and an ability to retain / sustain the quality and productivity benefits generated
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42 (Mithas *et al.*, 2011; Ashurst & Hodges, 2010; Braun *et al.*, 2010; Melville *et al.*, 2004;
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44 Santhanam & Hartono, 2003). At the outset of any investment, for each expected benefit,
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46 managers are advised to be prescriptive: map out the contingencies between investment and
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48 benefit, the time to realisation, detail how the benefit will be assessed and who in the
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50 organization is responsible for ensuring its realisation and then construct a plan that integrates
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52 all these elements (Peppard *et al.*, 2007). There is also strong empirical evidence that having
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54 a proactive focus on benefits management leads to superior return (Braun *et al.*, 2010) by
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managing the changes (e.g. process, work practices, information usage, knowledge discovery, customer insight, decision making, etc.) that will contribute to the achievement of the expected benefits of CRM rather than the traditional focus on technology or solutions deployment (Ashurst & Hodges, 2010). IS scholars recognise that IT investment is a catalyst of achieving change, and it is the change that creates value for firms. Marketing scholarship implicitly assumes that management change is compliant with the technology and therefore focuses its research on CRM solutions more than the management thereof.

In effect, the perspective of IS scholars is that at first, CRM acts as an enabler of operational models that ensure systematic gathering of data, secure storage, systematic analysis, efficient customer contact handling, predictable service resolution processes and easier access to customer data across channels and the appropriate customer point of contact. Such good practice, much of it programmed into the logic of the software, consolidates customer databases and enables a unified customer channel. In turn, customers enjoy a more integrated experience, sales and service issues are resolved more coherently and the firm reduces waste and duplication. This “operational CRM” reduces the cost to serve whilst enhancing customer satisfaction; this causal chain from satisfaction to loyalty to shareholder value is well established (Gruca & Rego, 2005; Anderson *et al.*, 2004). The operational platform generates the data that can then be used to learn about customers that fuels further, more ambitious development of offers to customers – a strategic capability. When IS scholars assess the benefits of CRM, they follow a logic that the move from operational to a bigger strategic benefit is a result of the management of change more than the implementation of technology enabled customer promotions.

CONTRASTING IS AND MARKETING SCHOLARSHIP

The findings from the systematic reviews of the literature support our contention that there are substantive differences in the approaches and objectives studying the impact of CRM investments between marketing and IS scholars. Whilst both literatures measure performance similarly (e.g. ROA), Marketing is concerned with the *what*: which constructs explain variance in business performance. IS scholars are also focused on the *how*; how are latent benefits realised (or not)? This has implications for how each explores the role of management, which in turn relate to ontological differences between IS and marketing.

Perhaps as a consequence, IS and marketing scholarship also diverges methodologically when investigating the relationship between CRM investment and business performance, possibly due to their different understandings of how returns are realised. These differences are noteworthy for marketing scholars and are manifested in their choice of methods and the treatment of common method issues. Ultimately, method and ontology influence each other and some marketing scholars have warned that the discipline risks constraining the development of knowledge by an over reliance on limited research methods (Tronvoll *et al.*, 2011). The implications of self-imposed paradigmatic issues are well discussed in the marketing literature (Hudson & Ozanne, 1988; Anderson, 1986; Deshpande, 1983). Inherent issues in method allow us to accept causal relationships that do not exist, reject those that do exist, and over or under estimate the strength of those relationships (Podsakoff *et al.*, 2003).

We discuss these issues in turn.

The Central Role of Management

Actively managing the systemic impact of new technology is central to IS (Ashurst & Hodges, 2010; Braun *et al.*, 2010; Benaroch *et al.*, 2007; Goh & Kauffman, 2005; Devaraj & Kohli, 2003; Devaraj & Kohli, 2000) and mostly absent in the marketing articles reviewed aside from the well-established calls for top-management commitment (Krasnikov *et al.*, 2009) and customer-centric culture (Chang *et al.*, 2010; Jayachandran *et al.*, 2005). Both literatures accept that there is limited value in CRM technology alone: benefits are generated by changes in customer relationships and the dynamic capabilities around managing them. If one looks carefully at the scales used by marketing scholars, some elements of the role of management can be divined, however, the discourse is not central to marketing’s story telling as it is tangential to identifying the aspects of CRM investments that affect business performance and to what extent. In contrast, IS scholars encourage business staffs and IS professionals to take a human and organisational perspective to IS systems rather than a technical one and, as such, promote an enhanced role for IS in strategic decision-making.

Insert Table 7 about here

As CRM is more of a field of managerial activity than a body of theory per se, we believe that managerial practice should feature prominently in its exploration. The need to complement a scientific research paradigm with insight generated from the perspective of managers (Deshpande, 1983) and from practice (Mentzer & Schumann, 2006) is long-debated in the marketing literature. An almost exclusive reliance on a positivist approach to modelling risks objectifying managers, rather than positioning their decision making as the focus of understanding when assessing the performance impact of CRM. This objectification is worrying given that marketing scholars accept that building a customer centric

organization is linked to success (Chang *et al.*, 2010; Jayachandran *et al.*, 2005). The limited role of managers is reflected in researchers' decisions about ontology and choice of methods.

Ontological Perspective

Related to the above epistemological difference between the fields, we note that IS scholars have long recognised the socio-technical nature of information systems. The soft systems movement emerged in the 1960s in response to the then dominant 'hard' systems perspective of computer science and engineering (Checkland, 2000; Mumford, 2000) from where the discipline originated. This movement spurred the recognition that information systems were essentially social systems, with human agency playing a central role in the outcomes of technology deployments with technology itself also framing action. This has been referred to as the duality of IT (Orlikowski & Baroudi, 1991). Moreover, the IS discipline deploys a wide variety of theoretical lens such as structuration theory (Giddens, 1984), media richness theory (Daft & Lengel, 1986) and actor network theory (Akrich, 1992; Latour, 1987) to examine IT investments within organizations and understand and interpret their consequences. Consequently, research findings and prescriptions emanating from IS research emphasises the careful management of organizational changes if expected benefits are to be achieved (Peppard *et al.*, 2007). The IS discipline stresses that the lack of management attention to achieving necessary change is the primary reason why CRM investments underachieve or fail.

In contrast, marketing research risks objectifying CRM, conceptualising it as something that can be isolated from its organizational and human context. By doing this, studies seek to posit a direct relationship between investment in CRM and organizational performance, a perspective that is commensurate with a positivist orientation. IS research adopts what it sees as a more appropriate ontological basis, grounding studies in, for

example, social constructivist or interpretive perspectives. Thus, instead of abstracting customer knowledge and objectifying it as a resource located in a CRM database, IS scholars are more concerned with the process or activity of knowing. Knowing is characterised as mediated, situated, provisional, pragmatic and contested (Blackler, 1995) and this is hard to capture with survey-based methods. This perspective treats CRM software and associated practices as elements of a wider socio-technical system. Marketing does not embrace, to the same extent, the systemic approach to changes initiated by the introduction of new technology.

This contrast in approaches reprises a familiar theme in management research. Langely (2007; 1999) divides organizational research between the analysis of process or variance data: the former focuses on events over time leading to an outcome, whereas, the latter explains phenomena with respect to stable relationships between dependent and independent variables. Drawing on variance theory (Mohr, 1982), Meyer *et al.* (2005) report on four studies of organizations in flux and conclude that variance data proves inadequate for understanding change and development. Tsoukas and Hatch (2001) draw a similar distinction between the narrative and logico-scientific modes for understanding complex managerial phenomena. The latter is more amenable to the generation of propositions that can guide managers (if this – then that) but have limitations, for example they do not deal with unique contexts, tradeoffs, managers’ motives and time – how situations unfold in consideration of the above. Such contrasts can be located in a “higher level” framework of four sociological paradigms articulated by Burrell and Morgan (1979). They identify a two by two matrix defined on one axis by objective versus subjective knowledge and on the other axis by a sociology of regulation (stable equilibrium) versus radical change. Investigating the *what* of CRM profitability is at bottom right of their matrix – objective knowledge of stable systems using variance data, whereas more of the IS research included in our study pushes in a

direction towards the top left – subjective knowledge of changing systems using both variance and process data.

Choice of Methods

All but one marketing article included in our study, models data with SEM, LHM or regression. The IS literature shows more diversity; while 10 of the 13 studies use similar models (five regression, two SEM, two simulations and one linear hierarchical model) this is supplemented with case study, content analysis and action research methods. IS models have a more eclectic set of data sources: operational data generated from IS systems in the case of health industry studies (Davaraj and Kohli, 2003), archival data (Mithas *et al.*, 2012), case study material (Benaroch *et al.*, 2007) and even Baldrige Quality award submissions in the case of Mithas *et al.* (2011).

An even starker contrast is in marketing scholarship's reliance on cross sectional data (eight studies) versus IS (two studies) which favours longitudinal analysis. Cross sectional data, obtained through surveys does not align with IS scholars' understanding of the organisational and human processes through which benefits from CRM are realised. The customer relating capabilities that generate business benefits identified in most marketing studies is predicated upon customer insight from data analysis. In most environments, building a robust customer profile takes time: recruiting customers and then capturing sufficient cycles of interaction to gather enough data to perform meaningful analysis and generate insight. One expert informant, at one moment of time, is unlikely to be able to assess this and therefore provide valid data. This latency, or contingent nature of benefits from CRM investments, suggests strongly that longitudinal data is necessary to understand how return unfolds over time.

As CRM systems are deployed, organizations improve their operational capabilities surrounding the system which permits a second, strategic phase of CRM contingent upon management’s vision and ambition to think more strategically. The IS studies in our review typically use time series data from three to six years to assess the effectiveness of large enterprise software solutions such as CRM. In contrast, marketing scholarship relies on single informants’ self-reported survey completion and only one study uses three-year public data on performance: other studies use a shorter time frame.

The Treatment of Method Errors

Marketing scholarship’s strong reliance on surveys of single informants who must assess their firm’s processes, capabilities and performance versus competitors strikes the authors as problematic. Common method errors arise when asking one respondent to assess both independent and dependent variables in one data gathering exercise.

Cote and Barnett (1987) warn that measurement error is “omnipresent” in social science research (p. 315). They present empirical evidence that almost 60% of the variance in published measures arises from measurement error, comprising over 26% method variance and 32% random error (p. 317). Whilst researchers suggest numerous ways of minimising common method error through better data collection and statistical measurement of the error, they can only agree on aspects of good practice and concur that no test of its absence is conclusive (Sharma *et al.*, 2009; Podsakoff *et al.*, 2003; Bagozzi & Yi, 1991; Cote *et al.*, 1987) . All measures have their limitations and scholars are advised not to minimise serious problems of measurement in business research through an over reliance on statistical tests that fail to find significant common method error. As noted by Burton-Jones (2009, p.445):

Partially addressing method bias can even exacerbate problems while creating a false sense of security in the validity of the results. For example, studies relying purely on a cross-sectional questionnaire data may run a statistical test for common method bias, and if the test does not indicate bias, the study authors may conclude that their data is free from method bias. In reality, with this type of data collections, there is no way to know if a different method would have given different results.

Amongst our selected marketing articles, eight asked informants to rate independent and dependent variables, one built a scale and hence lacks a true dependent variable; nine studies are worthy of consideration for common method error (see Table 6). Three studies do not discuss common method measurement issues, albeit the Palmatier and Gopalakrishna study is a MSI report and perhaps that level of methodological analysis is not appropriate in that publication. Three use the Harmon one factor test to conclude that common method error is not significant; this method has been strongly contested in literature (Burton-Jones, 2009; Podsakoff *et al.*, 2003; Bagozzi & Yi, 1991). Psychology scholars suggest it is the test of last resort (Lindell *et al.*, 2001). Hence, Reinartz *et al.* (2004) cross validate two samples in addition to using the Harmon test, and Reiman *et al.* (2010) augment it with a latent method analysis. One study uses a marker variable to capture error (Jayachandran *et al.*, 2005), one obtains data from different sources and multiple respondents (Homburg *et al.*, 2007) and Ernst *et al.* (2010) use a multiple method, multi-trait analysis and found multiple informants for about 30% of the sample.

Insert Table 6 about here

We therefore characterise the treatment of common method error across the included studies from the market discipline as mixed, observing that many put too much faith in the validity of single informants’ ability to assess the quality of their organizations’ CRM practices and outcomes, often in comparison to those of competitors. The contestable ability of managers to assess their performance relative to competitors, discussed previously, suggests that at least one should consider the validity of the data that underpins the modelling in these studies.

This picture exists in sharp contrast with that from the IS studies we analysed. Of the 13 studies, only one uses single informant survey as its sole collection vehicle (Braun *et al.*, 2010) and it assesses common method error by a combination of the Harmon one factor test and confirmatory factor analysis, the latter identified by Podsakoff (2003) as good practice. Zablah *et al.* (2012) use three informants per firm and triangulate with third party data on performance.

IMPLICATIONS FOR RESEARCH AND PRACTICE

If after 30 years, marketing scholarship remains conflicted over the return on CRM investment, it may be time to reconsider its approaches to how it assesses performance outcomes to combine the *what* (the current focus) with the *how*. The phenomenon of CRM demands that we focus upon firms’ investment objectives and the quality of benefit realisation management. Yet, the twin demands of “speaking the language of the board” and for generalisable findings has generated neither.

IS scholarship demonstrates the possibilities for enhancing marketing’s rigorous modelling with additional epistemological perspectives where managers and organisational actors are central to research. We believe that this will both build confidence in assessing the

business impact of CRM investment, be of more immediate assistance to managers and guide subsequent waves of IT led marketing activity such as social media and the exploitation of big data. The contrast between the marketing and IS literatures leads us to make five proposals for such a complementary epistemology for future managerially relevant research into CRM effectiveness, if not IT-enabled marketing investment effectiveness:

First, measures of business performance need to at least distinguish between operational and strategic benefits of the investment. Whilst Reinartz *et al.* (2004) distinguish between customer retention and acquisition objectives, CRM investment builds enabling assets and capabilities that generate both short term benefit and a real option to invest further in more strategic, long term customer relationships. The IS literature explicitly deals with the optionality of CRM investment (Benaroch *et al.*, 2007) and we suggest that the marketing discipline should follow. The development of complementary dynamic capabilities, identified by marketing scholars as the true generator of business value for CRM investments, is neither automatic nor guaranteed. In addition to identifying these capabilities and quantifying their impact, studies need to help managers understand how these capabilities evolve and when. We believe that most firms seek a unique combination of operational and strategic benefits from CRM investment and therefore benefits should ideally be assessed uniquely to reflect each firm's mix.

Second, in addition to the mix of operational and strategic benefits, organizations have unique marketing objectives that evolve over time as they learn from customers and change their strategies. CRM managers (or equivalent expert informants) should not be surveyed through a universal scale that probes for benefits that the organization is not necessarily trying to achieve and, conversely, may fail to identify benefits that it is targeting.

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At the minimum, statistical research should group CRM programmes by assessing its primary objective, operational or strategic, and collect data with appropriate instruments. Qualitative and case based research will find it easier to customise the data collection and may provide important findings that we suggest are largely over looked with a dominant modelling focus.

Third and similar to the above, organizations differ in the maturity of their relationship marketing strategies, their experience of using technology in marketing and their ability to manage large-scale IS enabled change. Research into CRM effectiveness needs to account for variations in maturity of the relationship programmes.

Fourthly, longitudinal data is preferable to cross sectional given that CRM investment first generates operational, and then strategic benefits. Each step, from building systems, to gathering data, analysis, responding to insight and consumer response takes time. The length of this cycle varies greatly across industries (Maklan *et al.*, 2011). For example, CRM investment in the consumer durables industry, with its lengthy repurchase cycles, are likely to take many years to assess definitively, whereas entertainment and consumer packaged goods might demonstrate fast changes in consumer behaviour and success may be evident quickly. In addition, gathering years of publicly reported performance data is a prudent means of addressing common method error and generates a more robust assessment of business performance versus asking informants how well their CRM programmes are doing versus competitors. Cross-sectional survey generated data maybe best used for descriptive contributions whereas studies seeking to assess the commercial benefits of CRM investment should use longitudinal data and attendant methods.

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3 And finally, when using cross-sectional surveys, greater attention to common method
4 errors is called for. We find it highly suspect to ask managers to assess their own
5 performance against competitors. Multiple respondents within firms (including their
6 customers) and the greater use of exogenous data (published financial reports) would
7 improve the validity of the data.
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16 This agenda reveals our belief that an epistemology of practice can complement and
17 enrich marketing scholarship's expert use of modelling and development of generalisable
18 findings. Given the almost universal adaption of CRM, further *ex-post* determination of its
19 ROI may not be as important as helping managers identify and then manage its potential
20 benefits. Essentially, the assets are in place but CRM benefit realisation has not yet received
21 sufficient attention in research conducted by marketing scholars.
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30 From a managerial perspective, marketing managers seeking board approval for CRM
31 investments face a conundrum: they cannot really determine the benefits of their proposal
32 before they learn from the initial stages of its implementation. We are concerned that this
33 requirement to demonstrate ROI forces managers to develop business cases based on levels
34 of incremental revenue that merely justify the required investment which are totally
35 ungrounded in customer needs. This typically generates justifications for CRM investment on
36 the assumption of selling more to existing customers rather than understanding their needs
37 and wants and then developing innovative solutions. Real learning may be ignored in a rush
38 to generate the target incremental cash flow compromising the development of dynamic
39 capabilities required to achieve important strategic benefits of the investment. The logic of a
40 simplistic ROI has the unintended consequence of reducing organizations' ability to achieve
41 CRM's full potential to generate positive returns.
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CONCLUSION

Organizations are investing heavily in the next waves of IT-led marketing change: big data, mobility and social media. As a community of scholars, marketing is conflicted in its assessment of the payoff – the performance impact of arguably its largest IT-led change to date: CRM. We propose that its philosophical perspective is too limited, relying exclusively on limited methods that risk misdirecting management attention and ignoring the vital issues of how organizations realise benefits from such investment. It is intuitively appealing to suggest that IS scholars have greater expertise in understanding how investments in information technology can improve business performance. Investigating that literature identifies a broader philosophical and methodological perspective, one that recognises explicitly the social-technical nature of the phenomenon and the role that managers and others have in realising the full benefit of IT-led marketing initiatives. We argue that by combining the *what* (from marketing research) with the *how* (from IS research) we create a more comprehensive picture.

We are concerned that marketing’s approach to CRM research is being replicated for the assessment of investment in social media and big data. Commercially sponsored surveys focus on establishing the ROI and identify the familiar nostrums of success: top management commitment, clear business strategy and development of new capabilities. Our challenge as marketing scholars is to learn and apply the lessons from CRM and extend our scholarship to the *how* of IT business so that we may better advise today’s IT-led marketing practice developments.

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¹ The abbreviations IT (Information Technology) and IS (Information Systems) are used interchangeably in literature. The authors use the latter to highlight that it is not technology alone that improves business practices rather the combination of technology, information, processes, capabilities, and people.

² The term “big data” refers to the phenomenon that customer generated data together with video, blog and social media data join behaviour and attitudinal data to create a complex data set whose constituents cannot easily be stored in a single data structure and hence difficult to analyse.

³ The debate over CRM definition is not the focus of our research and most scholars accept that there is a range of definitions from tactical database marketing through to corporate transformation (Payne & Frow, 2005).

⁴ An example of this type is cited in a Computerworld article (Pimm, 2001) that refers to a Gartner report claiming 50% of CRM projects don’t deliver.

⁵ We suggest that this evidence is suspect as no information is provided as to the rigor of methods used.

⁶ Solow’s comments related to aggregate data not firm level data.

Table 1: Marketing Studies of CRM’s Impact on Business Performance

Authors / Year	Conclusion (s)	Operational or Strategic Benefits	Method	Exogenous Variable (Definition of Performance)
Vohries <i>et al.</i> , (2011)	Customer focused marketing capabilities improves financial performance.	Create a concept of customer focused marketing capabilities arising from the capabilities to explore and exploit market knowledge.	Seemingly Unrelated Regression (SUR).	ROA.
Orr <i>et al.</i> , (2011)	CRM’s impact on performance is contingent on complementary capabilities and marketing employee development.	Identifies the relationship between marketing employee development and core marketing capabilities including CRM.	Seemingly Unrelated Regression (SUR).	ROA, sales and share growth.
Ernst <i>et al.</i> , (2011)	CRM improves new product performance, which in turn improves firm performance.	Identify the mediating impact of new product performance and make a conceptual argument that insight improves new product development (NPD) and model it.	Partial Least Squares with survey data of expert informants of leading German companies.	Performance is self-assessed on profitability, growth, share and attracting new customers.

Reimann <i>et al.</i> , (2010)	CRM's impact on performance is largely mediated by strategy.	Identify strategies of cost leadership or differentiation as mediators of CRM performance.	Structural Equation Modelling (SEM) using cross-sectional survey data.	<p>Customer satisfaction</p> <ul style="list-style-type: none"> • Delivering value • Satisfaction • Retention <p>Market effectiveness</p> <ul style="list-style-type: none"> • Share growth • Sales growth • New customers • More sales to customers <p>Profitability</p> <ul style="list-style-type: none"> • Business unit • Reaching financial goals • ROI • ROS
Chang <i>et al.</i> , (2010)	CRM's impact on performance is largely mediated by marketing capability.	CRM technology feeds into a broader dynamic capability, which in turn, drives performance.	Cross-sectional survey, SEM model.	Performance is self-assessed along criteria modified from previous studies.
Krasnikov <i>et al.</i> , (2009)	<p>1. Managers disappointed with CRM results.</p> <p>2. CRM enables firms to serve customers more effectively, even if at greater cost.</p>	CRM performance improves over time as firms' ability to use it improves. In some cases, the cost of CRM outweighs the immediate benefits but the benefits improve over time outweighing the incremental cost.	<p>1. Cites peer reviewed journals and commercial surveys.</p> <p>2. Hierarchical Linear Model of firm performance over time related to constructs they develop.</p>	Profit and cost effectiveness.

Morgan <i>et al.</i> , (2009)	CRM capabilities interact with brand management and market sensing capabilities to impact margin and sales growth.	Identify the interplay between widely accepted core marketing capabilities on financial performance. CRM improves margin growth but reduces sales growth due to better customer discrimination.	Seemingly Unrelated Regression (SUR).	Profit, sales revenue and margin growth rates.
Ramani & Kumar, (2008)	Customer relational performance is not related to customer based profit performance.	A new concept, interaction orientation, is positively related to firm performance.	SEM based on scale development and convenience sample of middle managers in USA.	Exogenous variables are new scales: Customer relational performance and customer based profit performance.
Jain <i>et al.</i> , (2007)	1. Identifies CRM failure rates between 60% and 70%. 2. The CRM-performance link is totally mediated by strategies of cost leadership and differentiation.	CRM helps firms understand customers, develop better offers and communicate more effectively. It enables strategies rather than an activity that generates ROI on its own.	1. Support for failure rate from non-peer reviewed practitioner journals. 2. Support for second conclusion from scale development.	Scale not evaluated against exogenous performance items.
Homburg <i>et al.</i> , (2007)	1. Managers question the performance of their CRM systems. 2. Organization's information processing about customers explains performance more than its affective commitment to customers but both affect performance positively.	Organizations' responsiveness affects CRM performance.	1. Citation of others' survey based data. 2. Cross section survey data leading to scale development and Structured Equation Model. Multiple respondents in 40% of sample. 3. Public information on company performance.	Return on sales versus industry average over three years.

Coviello <i>et al.</i> , (2006)	1. Companies mix types of marketing – Relationship Marketing (RM) practices co-exist with Transactional marketing. 2. Acquisition not retention generates sales growth. 3. RM only partially linked with acquisition and retention.	Transaction marketing still important to customer acquisition, which drives sales growth more than retention in this context.	SEM based on cross sectional survey of Western Canadian tourism accommodation firms.	Profitability (but not specified in the article).
Palmatier & Gopalakrishna, (2005)	Social bonds are highly profitable, solutions moderately profitable under limited conditions and financial programmes have no direct effect on profit.	CRM programmes generate social bonds, structural solutions and financial rewards for customers.	Linear Hierarchical Model.	Incremental profit, obtained from self-administered survey data.
Jayachandran <i>et al.</i> , (2004)	Customer response capability improves firm performance.	Develop a model of how insights lead to better customer decision-making, enhancing the customer capability.	Regression analysis based on large survey of retailer expert informants, supplemented with 31 individual interviews across all sectors.	Performance is measured as attainment of goals: ROA, share and sales growth. The self reported data is corroborated with a sub set of objective verification (not discussed in paper).
Reinartz <i>et al.</i> , (2004)	CRM's impact on performance (ROA) is not always positive and dependent on successful execution.	Three components of CRM (relationship initiation, maintenance and termination) are moderated by organizational alignment and technology.	Cross-sectional survey augmented by observed ROA data modelled with PLS.	ROA.

Day & Van den Bulte, (2002)	Identify a dynamic capability (Customer Relating Capability) that predicts performance.	CRM is an enabler of broader dynamic capabilities that generate performance.	Linear regression analysis based on cross-sectional survey data supplemented by logit modelling.	Performance is measured on three dimensions over two years: sales growth, profitability and customer retention versus competition. These are measured on five point single item scales and self reported.
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Table 2 CRM’s Impact on Business Performance

CRM’s Impact	Studies
Mostly positive	Krasnikov <i>et al.</i> , 2009
Sometimes positive	Palmatier & Gopalakrishna, 2005
Largely no relationship to performance	Ramani & Kumar, 2008; Reinartz <i>et al.</i> , 2004
Largely mediated by other factors (e.g. company strategy or a customer capability) or works in conjunction with complementary capabilities (e.g. brand management, market sensing, knowledge exploitation)	Vorhies <i>et al.</i> , 2011; Orr <i>et al.</i> , 2011; Chang <i>et al.</i> , 2010; Ernst <i>et al.</i> , 2010; Reimann <i>et al.</i> , 2010;Morgan <i>et al.</i> , 2009; Homburg <i>et al.</i> , 2007; Morgan & Rego, 2006; Jayachandran <i>et al.</i> , 2004; Day & Van den Bulte, 2002

Table 3 Measures of Performance in the Selected Studies

Exogenous Measure of CRM Performance	Number of Studies
Profit (or incremental profit)	9
ROA	7
Sales (or sales growth)	5
Return on sales (absolute and versus average)	3
Share of market (or share growth)	3
Retention	2
Customer acquisition	2
ROI	1
Reaching financial goals	1
Delivering value for customers	1
Customer satisfaction	1
Recommendation	1
Stock return	1
Converting unprofitable to profitable	1
Customer ownership	1

Table 4 Key Attributes of the CRM construct in the Selected Studies

Study	Construct	Key Items
Orr <i>et al.</i> , (2011)	Customer Relationship Management Capabilities	<ul style="list-style-type: none">• Establish dialogue with customers• Get target customers to try our offers• Focus on meeting customers’ long term needs• Systematically maintain loyalty amongst attractive customers• Routinely enhance relationship quality with attractive customers
Ernst <i>et al.</i> , (2011)	CRM	<ul style="list-style-type: none">• CRM technology (multiple attributes)• CRM reward system (multiple attributes)• CRM Processes (Information, Segment Value, Multichannel) –each has multiple attributes
Chang <i>et al.</i> , (2010)	CRM technology use	<ul style="list-style-type: none">• Sales force management (numerous)• Analysis of customer preferences, loyalty, lifetime value, retention and profitability
Vorhies <i>et al.</i> (2010)	Customer Relationship Management Capabilities	<ul style="list-style-type: none">• Establish dialogue with customers• Get target customers to try our offers• Focus on meeting customers’ long term needs• Systematically maintain loyalty amongst attractive customers• Routinely enhance relationship quality with attractive customers
Morgan <i>et al.</i> , (2009)	CRM capability	<ul style="list-style-type: none">• Identify and target attractive customers• Establish dialogue with target customers• Get target customers to try our offers• Focus on meeting target customers’ long term needs• Maintain loyalty amongst attractive customers• Enhance relationship quality with attractive customers• Maintain positive relationships when migrating unattractive customers
Ramani & Kumar (2008)	Interaction Response Capacity	<ul style="list-style-type: none">• Recording all information• Predictive modelling
Reiman <i>et al.</i> , (2010) (adapted from	Initiation	<ul style="list-style-type: none">• Identify and select potentially valuable customers• Continuous evaluation of prospects• Cost of customer relationship (numerous)

Study	Construct	Key Items
Reinartz, 2004)		<ul style="list-style-type: none"> • Value of customers (numerous)
	Maintenance	<ul style="list-style-type: none"> • Regular assessment of customer value (profit and cost – numerous) • Integration of communications • Referral tracking and management • Cross selling and upselling
	Termination	<ul style="list-style-type: none"> • Identify and act on low profit customers
Homburg <i>et al.</i> , (2007)	Customer Orientation of information generation	<ul style="list-style-type: none"> • Systematic gather information about customers • Collect information that comprehensive and holistic • Keep track of customer behaviour • Warehouse and manage customer data effectively
Coviello <i>et al.</i> , (2006)	Interaction marketing practices	<ul style="list-style-type: none"> • Nine practices defined in Coviello et JM 2002 marketing practices article • Focus is one to one relationships with individual customers
Jayachandran <i>et al.</i> , (2004)	Customer Knowledge Process	<ul style="list-style-type: none"> • Regularly meet customers • Knowledge of customer needs is thorough • Process and analyse customer information • Study needs • Interdepartmental meetings to discuss needs • Marketers discuss customer needs with other functions
Reinartz <i>et al.</i> , (2004)	Initiation, acquisition, maintain, retain, cross sell, up sell, referral, terminate	Comprehensive set of measures about the processes to manage all the constructs most of which are data-enabled
Day & Van den Bulte (2002)		Single question asking how your customer information compares to competitors

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Table 5: Analysed Studies from the IS Discipline.

Authors	Conclusions Relevant to this Paper	Operational or Strategic Benefits of IS Investments Relevant to this Paper	Method	Exogenous Variable (s) (Definition of Performance)
Zablah <i>et al.</i> , (2012)	CRM technology that supports customer interaction improves customers' perceived relationship investment (PCRI), which improves firm performance. CRM technology that prioritises customers enhances PCRI amongst larger firms and lowers it amongst smaller ones, impacting performance positively and negatively respectively.	CRM technology use affects different customers differently and different CRM tools have different effects. CRM's effect on performance is mediated by customers' perception of the level of supplier investment in the relationship, a result of the use of CRM technology and processes.	Linear Hierarchical Modelling, the relationship between PCRI and performance is determined by bivariate non-parametric correlation. The study uses a survey of three expert informants per each firm and triangulates with third party performance data.	Performance is measured by a three-item scale developed for the study. The scale items are not revealed in the main article.
Mithas <i>et al.</i> , (2012)	IT investments improve profitability through growth and not cost cutting. They also achieve higher profitability than commensurate investments in advertising and R&D.	IT led growth mostly conceptualised in terms of CRM, customer insight, channels and management of customer life cycle.	Regression on a longitudinal archival data set from surveys of 452 global firms over a maximum of six years (143 firms in all six years).	Net income per employee.

Seddon <i>et al.</i> , (2011)	Present a model for benefits realisation acknowledging how IS benefits change over time. Long-term benefits accrue from integration, process optimisation and improved access to information. Short-term benefits come from functional fit and overcoming inertia.	The model divides benefits as short (single project) and long (organization-wide) term and this division corresponds with operational versus strategic.	Content analysis of 130 customer presentations made at two SAP conferences.	Decision making quality, transaction speed and accuracy, cost reduction, inventory and asset management, ease of growth, flexibility and cycle time reduction.
Mithas <i>et al.</i> , (2011)	Develop and validate an empirical model of information management capability, generating performance, customer and process management capabilities in turn generating customer, financial, HR and organizational effectiveness results.	Customer management benefits enable the firm to gain insight that leads to new products and markets, customer acquisition and customer retention.	Linear model estimation – SURE. Verified with LISREL SEM modelling. Data gathered from Baldrige Quality award submissions.	Customer focused results are customer satisfaction, product and service performance.
Braun <i>et al.</i> , (2010)	Empirically validates that benefits realisation management improves results of IS investment.	Benefits analysis, planning and review moderated by the firm's contextual business process knowledge and IS-business communications improve the benefits of major IS led change programmes.	PLS modelling of data collected from a survey representing 454 IS projects.	Benefits are not identified but described as both tangible and intangible.
Ashurst & Hodges, (2010)	Explores how organizations develop a benefits realisation capability from investments in IT related change.	Benefits realisation capability helps organizations shift their focus from implementing technology solutions to realising benefits.	Action research with a core participatory team of 20 IS managers.	There is no pre-determined definition of performance, it is derived phenomenologically for each participant.

Hendricks <i>et al.</i> , (2007)	Analysis of financial benefits of ERP, SCM and CRM systems finds CRM fails to improve stock returns of profitability.	Posit that there is a mix between operational and strategic growth benefits and CRM has the largest percentage of the latter, which the authors admit is the hardest to measure objectively.	Published data from 406 US firms; 80 of whom announced investment in CRM systems. Data gathered for one-year prior and three years post announcement. Stock market returns estimated by simulation. Performance measured by comparing means.	Abnormal returns of stock market, changes in ROA and operating income over book value of total sales. Performance measures contrasted with comparison group.
Benaroch <i>et al.</i> , (2007)	Develop and illustrate the application of Option-Based Risk Management for IS investment to demonstrate the value of strategic flexibility that is not captured through traditional assessments of IS investment benefits.	Benefit realisation is improved by a financial assessment model that enables managers to determine the value for a range of real options over the life of an IS related change programme. They categorise strategic flexibility into 7 generic options.	Case study of an airline seeking to consolidate 10 datamarts to enhance CRM capabilities. They use Monte Carlo Simulation to determine the distribution of outcomes and valuation of options.	NPV for alternate business cases inclusive of real options values. The constituents of the NPV analysis are operational performance (sales conversion, dormancy prevention and customer retention), CRM costs (people, technology) and investment.
Goh & Kauffman, (2005)	There is latency in the benefits realised from IS-enabled change. Benefits are staged and the strategic benefits occur in the latter stages.	The paper identifies three stages and strategies for moving through the stages to maximise the potential benefits of IS investment.	Two case studies: patient records at a health centre and ERP at Hershey Foods.	The health centre: length of patient stay, capacity, reduction in prescription errors. Hershey was a study of failure: lost sales, profits.
Santhanam & Hartono, (2003)	IT capability generates superior performance.	Linking IS to business benefits improves performance.	A matched pair comparison between best and poor IT practice firms rather than use a single benchmark to determine IS capability. Regression analysis adjusted for prior performance.	Profit measures are ROS, ROA, OI/S, OI/Employees. Cost measures are COG/S, SGA/S, OPEXP/S.

Devaraj & Kohli, (2003)	Benefits from IS investment vary with use of technology rather than the nature of the technology.	There is an excessive focus on managerial aspects of IS benefits realisation and insufficient attention to encouraging front line staff to use the technology.	Regression (time series) of panel data from US health care workers collected over 36 months.	Net patient revenue per day, net patient revenue per patient and mortalities divided by operative procedures in a specified time period.
Devaraj & Kohli, (2000)	IS benefits are realised over an extended time frame and this is not captured through cross sectional survey data.	Benefits are dependent on successful development of complementary organizational change and business process reengineering.	Regression (time series). Data from eight hospitals (US) over three years.	Net patient revenue per day, net patient revenue per patient, mortalities divided by operative procedures in a specified time period and customer satisfaction.
Hitt & Brynjolfsson, (1996)	Much of the productivity value of IS investment has been captured by customers.	IS investment does improve productivity but not necessarily profit.	OLS regression. Panel 370 firms over four years (1988-92). IS spending from ISG annual survey and performance from Compustat.	Profitability defined as ROA, ROE and total shareholder return.

Table 6: Method Bias in Marketing Studies

Authors	Method	Treatment of Common Method Errors	Dependent Variable (Definition of Performance)
Vohries <i>et al.</i>	Seemingly Unrelated Regression (SUR).	Multiple informants where possible and the survey data is compared to objective financial data from secondary sources.	CRM (and all other capabilities) performance versus competitors is a self-assessed with a scale comprising five attributes. Respondents rate own performance versus competitor's -3 to +3.
Orr <i>et al.</i>	SUR.	Expert informant survey data is compared to objective financial data from secondary sources.	CRM (and all other capabilities) performance versus competitors is a self-assessed with a scale comprising five attributes. Respondents rate own performance versus competitor's -3 to +3.
Ernst <i>et al.</i>	Partial Least Squares with survey data of expert informants of leading German companies.	Two informants solicited, 30% of the final sample had dyads. Use of formative constructs. Use of MIMIC. However most scales where 1-7 Likert. Some scales asked respondents to assess own and competitors performance. Acknowledged that some of the impacts of CRM take time to develop acknowledged in limitations.	Performance is self-assessed on; profitability, growth, share and attracting new customers.

Reimann <i>et al.</i>	Cross sectional survey data, SEM model.	<p>Use of formative and reflective measurement models.</p> <p>Discuss common method bias. Ordering of question, Harman one factor test, unmeasured latent method factor.</p>	<p>Customer satisfaction</p> <ul style="list-style-type: none"> • Delivering value • Satisfaction • Retention <p>Market effectiveness</p> <ul style="list-style-type: none"> • Share growth • Sales growth • New customers • More sales to customers <p>Profitability</p> <ul style="list-style-type: none"> • Business unit • Reaching financial goals • ROI • ROS
Chang <i>et al.</i>	Korean data. Cross sectional survey and Structured Equation Model.	<p>All 7 point Likert scale.</p> <p>Asks respondents to judge the quality of their performance.</p> <p>No discussion of method error.</p>	Performance is self-assessed along criteria modified from previous study.
Jain <i>et al.</i>	Cross sectional survey data, scale development.	No discussion of method error.	Self completed scale questionnaire.
Morgan <i>et al.</i>	Seemingly Unrelated Regression.	Use objective data for exogenous variable – third party financial data.	All marketing capabilities were assessed with a cross sectional survey, self completed by export informants.
Krasnikov <i>et al.</i>	Linear Hierarchical Modelling.	Not overtly discussed in paper, however exogenous variables were derived from objective third parties.	Objective third party data.
Ramani & Kumar	Structured Equation Model based on scale development and convenience sample of middle managers in USA.	<p>Used Harmon and a moderator variable to test for common method.</p> <p>Asked respondent to make comparisons to competitors.</p>	Exogenous variables are new scales: Customer relational performance and customer based profit performance.

Homburg <i>et al.</i>	1. Citation of others' survey based data. 2. Cross section survey data leading to scale development and Structured Equation Model.	Multiple informants about 40% of the sample. Collected additional data on company performance from public sources and annual reports.	The measure of financial performance is return on sales versus industry average. Over three years.
Coviello <i>et al.</i>	Structured model.	Single informant survey (web based). Harmon single factor test.	Marketing practice types assessed using Coviello et al (2002) questionnaire.
Palmatier & Gopalakrishna	Linear Hierarchical Model.	Single informant no discussion of common method.	Incremental profit as the exogenous variable.
Jayachandran <i>et al.</i>	Regression analysis based on large survey of retailer expert informants, supplemented with 31 individual interviews across all sectors.	Used a marker variable.	Performance is measured as attainment of goals: ROA, share and sales growth. The self reported data is corroborated with a sub set of objective verification (not discussed in paper).
Reinartz <i>et al.</i>	Cross sectional survey augmented by observed ROA data leading to a Structured Equation using PLS.	Harmon one factor test and cross-validated the estimation of sample one and two.	The measure of success is ROA obtained through objective third parties.
Day & Van den Bulte	Linear regression analysis based on cross sectional survey data supplemented by logit modelling.	Not discussed.	Performance is measured on three dimensions over two years: sales growth, profitability and customer retention versus competition. These are measured on five point single item scales and self reported.

Table 7: Summary of Differences between Marketing and IS Research Approaches

Dimension	Marketing	Information Systems
Ontological Perspective	Positivist. CRM is almost detached from the organisation and its context. It is objectified as a discrete set of practices.	Varied philosophical perspectives are used, with an emphasis on embedding IS within a broader social context. Management of the IS deployment holds a central role in research.
Epistemological Perspective and Methods	Almost an exclusive reliance of modelling, particularly pathway analysis. Data sourced from surveys, often of single informants. Limited time frame during which the impact of CRM investment is observed, typically less than two years.	Wide variety of methods with an overt concern for multiple data sources. Extended time frame for analysis, typically more than three years, hence longitudinal studies more common than surveys.