# Comparison of CRM Systems Dedicated to SMEs in Terms of the Omnichannel Concept

**Roman Domański and Hubert Wojciechowski**

**Abstract** The new form of multi-channel sales—omnichannel—entails the need for companies to adapt to provide the best possible customer experience. Dedicated CRM systems are solutions that enterprises use to manage customer relationships. They should evolve from classic solutions, currently existing, towards customer relationship management systems that meet the requirements of omnichannel—i.e. Omnichannel Customer Relationship Management (OCRM) systems. Due to the large number of solutions, only CRM systems dedicated to small and medium enterprises (SME) is studied in this chapter. This chapter aims to develop best possible configuration of CRM system dedicated to omnichannel and, in the next step, to compare existing CRM systems for SME with the best possible one. State-of-the-art solutions in modern forms of distribution suggest that there is a research gap in ranking of key factors for CRM systems that use the omnichannel approach. The originality of this article is based on: undertaking a very niche topic—SME-dedicated CRM systems enabling the implementation of the omnichannel concept; a pioneering solution to the problem based on an innovative research tool—the Grey Incidence Analysis (GIA) method from the Grey System Theory (GST) family.

**Keywords** Omnichannel · Customer relationship management (CRM) systems · Small and medium enterprises (SMEs) · Grey incidence analysis (GIA) · Grey system theory (GST)

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The chapter used the interdependence of analysis of qualitative and quantitative elements. In the theoretical part, a systematic literature review was used to analyze secondary sources listed in the Scopus database. In the practical part, GIA method, in primary study, was used as a tool for comparing CRM systems.

# 1   Introduction

A new form of distribution called omnichannel is defined as universal retail or a universal channel. It offers the possibility of making purchase/sale transactions by switching from one channel (e.g. conclusion of a contract through a call centre) to another (e.g. collecting goods from parcel pick-up stations) at any stage of the transaction, including parallel operation in several channels at the same time (e.g. comparison of the price level in an online shop while visiting a brick-and-mortar shop). For customers, this solution means shopping comfort. For enterprises, this is a challenge related to shaping distribution logistics systems adequate to customers' expectations.

What can be of use hers is modern technology. Customer Relationship Management (CRM) systems are used to maintain good shopping experience. CRM systems support enterprises in implementing operational, analytical and contact (interactive) functions. Therefore, this category of software was selected as the object of the study in the article. However, due to the emergence of new forms of retail, the existing (classic) CRM systems should evolve towards omnichannel (modern) OCRM systems. This transformation is now taking place.

In each country, the dominant fraction (although numbers are different) is small and medium enterprises (SMEs)—e.g. in 2018 in Poland they made up 95% (LEs made up just 5%). They largely create the economic position of a given country. In this group of enterprises, the effects of changes (organizational and technological transformations) have the greatest potential to affect the economy of each country. That is why SMEs were chosen in the article as the research subject.

A promising executive concept of the postulates outlined above is the Grey System Theory (GST). Due to the rapid rate of changes in business and the long time it takes to obtain statistical data, conducting objective comprehensive research is very difficult to carry out and is also economically unviable. GST is an alternative. Using this theory, in the lean language terms, one can come to the same conclusions using less time and fewer resources.

One of the GST tools is Grey Incidence Analysis (GIA). It enables the study of interrelationships (degree of similarity) between systems. The idea of this article is based on formulating the functionality of an ideal OCRM system and then comparing it with the list of CRM systems available on the market for SMEs in order to assess the extent to which they meet the omnichannel retail requirements. That is why GIA was chosen in the article as a research implementation tool.

The article aims to develop the best possible configuration of the CRM system dedicated to omnichannel and then to compare the existing CRM systems for SMEs

with the best possible one. The article consists of the following sections: literature search in the Scopus database—quantitative and qualitative analysis of articles; description of a four-stage original methodology of testing CRM systems dedicated to SMEs in the context of omnichannel; presentation of the sequence results of research on the omnichannel of CRM systems dedicated to SMEs using the GIA method, results analysis and final conclusions.

## 2  Literature Search in the Scopus Database

### 2.1  Quantity Analysis

The only source of literature search is the Scopus database. This is only seemingly a research limitation. The authors' previous numerous experiences allow to conclude that in the majority of cases the same list of publications is the result of a search in the Web of Science database. Hence, there is no need to duplicate literature search. Literature search in the Scopus database was conducted on 26 February 2020. In each case, interesting phrases were sought in the following places: "article title, abstract, keywords"—identification of potential articles.

Literature search starts with the recognition of interest in individual concepts. The evaluation criterion in this respect is the number of publications on a given topic—individually (Table 1). As part of the search, various possibilities of recording a given term were taken into account.

**Table 1**  Number of publications on a given topic—individually

| Term number | Phrase | Number of articles |
|---|---|---|
| 1 | CRM system | 4,978 |
| 2 | Customer relationship management system | 5,715 |
| 3 | SME | 34,739 |
| 4 | Small and medium enterprise | 27,307 |
| 5 | Omni-channel | 261 |
| 6 | Omni-channel | 315 |
| 7 | Omni channel | 1,043 |
| 8 | GST | 31,462 |
| 9 | Grey system theory | 9,697 |
| 10 | GIA | 2,956 |
| 11 | Grey incidence analysis | 2,157 |

*Source* Own work based on the Scopus database

**Table 2** Number of publications on a given topic—collectively

| Term number | Phrase | Metaphrase | Number of articles |
| --- | --- | --- | --- |
| 1 | CRM system | CRM | 8,971 |
| 2 | Customer relationship management system | | |
| 3 | SME | SME | 46,060 |
| 4 | Small and medium enterprise | | |
| 5 | Omnichannel | OMNI | 1,276 |
| 6 | Omni-channel | | |
| 7 | Omni channel | | |
| 8 | GST | GST | 41,090 |
| 9 | Grey system theory | | |
| 10 | GIA | GIA | 5,096 |
| 11 | Grey incidence analysis | | |

*Source* Own work based on the Scopus database

It was then decided to aggregate the same terms, recorded in different ways, into groups. To this end, phrases were searched for in pairs, searching for the sum of both sets (OR operator). Table 2 presents a term-related aggregated number of publications.

Comparing the results in both tables, it can be concluded that within a given article a given phrase is sometimes recorded in several ways. Therefore, the results in Table 2 are not the exact sum of the results from Table 1. From the perspective of the object and subject of research, by far the most numerous groups in Table 2 are publications devoted to various aspects of SME. CRM and omnichannel systems, as narrowly specialized terms, constitute smaller groups. The advantage of CRM publications over omnichannel should not come as a surprise. After all, the former term is historically older. Hence, it already has significant output. From the perspective of the research implementation tool, the smaller number of publications dedicated to GIA, as one of the detailed solutions of GST (a larger number of articles), is very natural.

However, the most interesting was the search for interrelationships between individual phrases. Based on Table 2, a phrase search was made in pairs, looking for the common part of both sets (AND operator). The interrelationships of terms through the prism of the number of publications are presented in Table 3 (explanation of the meaning of numbers in parentheses in the part devoted to qualitative analysis—Sect. 2.2).

The final results of the quantitative analysis of the publications are very interesting. The subject of CRM in the context of SME has already been of considerable interest to scientists (247 articles). However, omnichannel issues in CRM systems are just beginning to be discussed—just 11 articles. In the SME fraction, omnichannel is characterized by an even greater niche of interest (only 4 articles). GST has already been used as part of CRM (14 articles) and SME (34 articles). However, its specific

**Table 3** Number of publications on a given topic—reports

|        | CRM | SME | OMNI    | GST    | GIA   |
|--------|-----|-----|---------|--------|-------|
| CRM    | x   | 247 | 11 (10) | 14 (4) | –     |
| SME    |     | x   | 4       |        | 3 (2) |
| OMNI   |     |     | x       | –      | –     |
| GST    |     |     |         | x      | 259   |
| GIA    |     |     |         |        | x     |

*Source* Own work based on the Scopus database

tool—GIA—has so far been used only in a pilot form and only on the basis of SME (only 3 articles), no use of GIA in the context of CRM systems and omnichannel. GST has never been used as a research method or tool in the context of omnichannel.

## 3 Quality Analysis

Out of 11 publications in the CRM—OMNI relation, 1 will be intentionally omitted—a conference report. Table 4 presents a brief description of each publication.

The publications in Table 4 span the last 5 years. In this case the bottom limit is the moment the concept of omnichannel appears. The number of publications is increasing. At the moment, there are no clearly dominant authors or scientific centres (individual articles). France and the United Kingdom show a slight dominance. The discussed issues are most often placed in the areas of: Business, Management and Accounting; Computer science. From the citations' point of view, particular attention should be paid to the following articles: Picot-Coupey et al. (2016), Kung et al. (2008), Khan and Faisal (2015).

Only 4 publications are dedicated to the SME—OMNI relationship. Table 5 presents a brief description of each of them.

The publications in Table 5 also span the last 5 years. The number of publications is also increasing. At the moment, there are no clearly dominant authors or scientific centres (individual articles). The issues in question are most often placed in the area of Business, Management and Accounting. From the citations' point of view, attention should be paid especially to the article by Khan and Faisal (2015).

SME—GIA relationships were identified only in 3 (de facto 2) publications. Table 6 presents a brief description of each of them.

The publications in Table 6 span only 4 years. Quite puzzling is the lack of publications after 2014, which may indicate the lack of GIA's interest in the SME area. An interesting observation is the fact that both publications come from China, from which the grey system theory originates. They are placed in the areas of: Computer Science; Engineering. It is also peculiar that none of the publications have yet been cited.

**Table 4** List of articles about CRM and omnichannel systems

| Author | Year | Scope of interest |
| --- | --- | --- |
| Vasiliev and Serov | 2019 | An economic—mathematical omnichannel model of sales management system in banking |
| Prodanova and Van Looy | 2019 | The evolution of business process management through different social media tools as a means to achieve a transition toward the recommended omnichannel management approach |
| Ieva and Ziliani | 2018 | The explosion in the number of touchpoints is putting pressure on companies to design omnichannel customers' experiences aimed at achieving long-term customer loyalty |
| Církovský and Maryška | 2018 | To provide a concept of customer relationship management systems usage for complex campaigns in the healthcare area |
| Won | 2018 | A case study of Lotte Shopping—the company is trying to reinforce the omni-channel strategy, which can create synergy among various distribution channels based on its core competences |
| Critchley | 2018 | Description of set up the Dynamics 365 Online system for sales, customer service, marketing |
| Park and Lee | 2017 | The retailers recognize the importance of the mobile channel as an efficient sales channel and as a tool for CRM—to explain channel choices in the omni-channel environment |
| Taufique Hossain et al. | 2017 | Additional research is required to know more novel outcomes of the channel integration within omnichannel services marketing |
| Picot-Coupey et al. | 2016 | The challenges faced in shifting to omni-channel strategy are so numerous and so engaging that, de facto, it is impossible to evolve directly from a multi-channel, siloed strategy to an omni-channel strategy without any transition |
| Hutchinson et al. | 2015 | Illustrates the value of a structured, formal CRM system which helps SME retailers compete in a complex, competitive and omni-channel marketplace |

*Source* Own work based on the Scopus database

Out of 14 publications in the CRM—GST relation, 10 will be intentionally omitted—conference reports (Feng and Mei 2010), accidental hits (Chang et al. 2017). Table 7 presents a brief description of each publication.

The publications in Table 7 span the period of 9 years. The number of publications has a fixed tendency. At the moment, there are no clearly dominant authors or scientific centres (individual articles). China—the homeland of grey system theory—shows a slight dominance. The considered issues are most often placed in the area of: Computer Science. From the citations' point of view, particular attention should be paid to articles such as: Govindan et al. (2016), Xiong et al. (2016).

**Table 5** List of articles about SME and omnichannel

| Author | Year | Scope of interest |
|---|---|---|
| Calderón et al. | 2019 | Analyses the development of exploitation and exploration capabilities, and the role of ambidexterity, in the evolution of small Spanish wineries toward the multi-channel distribution system |
| Kim et al. | 2018 | The omni-channel platform represents the most sustainable approach for small business owners undergoing difficulties such as technological and organizational changes |
| Heidekröger et al. | 2018 | Omni-channel management is one trend that is increasingly gaining attraction, that profound understanding of influencing factors for sales and service to small and medium enterprises (SME) is missing |
| Hutchinson et al. | 2015 | Illustrates the value of a structured, formal CRM system to help SME retailers compete in a complex, competitive and omni-channel marketplace (repeating—see: Table 4—last row) |

*Source* Own work based on the Scopus database

**Table 6** List of articles about SME and GIA

| Author | Year | Scope of interest |
|---|---|---|
| Tang and Wang | 2014 | Applying the grey incidence analysis method to study the GEM listed companies internal control effectiveness (repeating—see: —Tang and Wang 2013 row below) |
| Tang and Wang | 2013 | Applying the grey incidence analysis method to study the GEM listed companies internal control effectiveness |
| Yong | 2011 | A detailed analysis on the structure and environment of China's e-commerce development by means of grey incidence analysis |

*Source* Own work based on the Scopus database

**Table 7** List of articles about CRM and omnichannel systems

| Author | Year | Scope of interest |
|---|---|---|
| Govindan et al. | 2016 | Proposes an integrated grey DEMATEL method to consider interdependent relationships among the 3PL provider selection criteria |
| Orzan et al. | 2014 | Some elements taken from grey systems are used in the relationships between the advertising campaigns and the buyers' decisions |
| Hu | 2010 | Based on the grey-fuzzy theory, it constructs a grey-fuzzy comprehensive performance evaluation model for the CRM system, and verifies the model's scientificalness and feasibility through empirical study |
| Xiong et al. | 2008 | Identifies customer behaviour using a grey correlation model to evaluate proposed segmented customers in CRM |

*Source* Own work based on the Scopus database

Out of 34 publications in the SME—GST relation, 17 will be intentionally omitted—conference reports (Církovský and Maryška 2018), accidental hits (Hutchinson et al. 2015). Table 8 presents a brief description of each publication.

The publications in Table 8 span the period of 14 years. They concern the aspects of: modelling (programming), forecasting, decision making or controlling. For explanatory issues, authors usually use grey incidence analysis (GIA), grey model (GM) for predictive issues, and grey decision making (GDM) for design issues. The number of publications has a fixed-increasing tendency. At present, the only author with more than 1 publication (two) is Kung. As for nationality, it is definitely dominated by China (13 articles)—that is where GST comes from—Jiangsu University (2 publications), and also Taiwan (3 articles)—Chaoyang University of Technology (also 2 publications). The considered issues are most often placed in the

**Table 8** List of articles about SME and GIA

| Author | Year | Scope of interest |
|---|---|---|
| Chang et al. | 2017 | Data smoothing index—forecasting |
| Zeng et al. | 2017 | Grey relational analysis—selection of SME-specific ERP systems |
| Khan and Faisal | 2015 | Grey-based model—ERP vendor selection |
| Zhang and Chen | 2014 | Grey prediction model—predicts the monetization ratio and financial interrelations ratio |
| Tang and Wang | 2014 | Grey incidence analysis—study the GEM listed companies internal control effectiveness (repeating) |
| Tang and Wang | 2013 | Grey incidence analysis—study the GEM listed companies internal control effectiveness |
| Zhang et al. | 2012 | Grey prediction model—forecast the sales for the next decade |
| Yong | 2011 | Grey incidence analysis—analysis on the structure and environment of China's e-commerce development |
| Li et al. | 2011 | Grey-relational theory—system of technological SMEs' financing capability |
| Feng and Mei | 2010 | Grey relativity analysis—the electronic commerce application decision-making in SMEs |
| Lingyu et al. | 2009 | Grey relation—fuzzy multi-criteria decision making (FMCDM) |
| Ma and Fan | 2009 | Grey-fuzzy theory—risk evaluation of networked SME cluster |
| Cheng and Wang | 2009 | A grey hierarchy evaluation model—assess destructive innovation risks quantitatively |
| Kung et al. | 2008 | Grey statistic method—evaluate the optimal distribution for strategic resources in medium and small enterprises |
| Sun et al. | 2007 | Grey correlative degrees of the factors—marketing mix effectiveness |
| Kung | 2005 | Grey system method—assess the enterprise's decision on marketing resource distribution and its performance |
| Chen et al. | 2004 | Fuzzy-grey comprehensive evaluation method—safety management of small and medium enterprise |

*Source* Own work based on the Scopus database

areas of: Decision Sciences; Computer Science; Engineering; Business, Management and Accounting. From the citations' point of view, particular attention should be paid to articles such as: Li et al. (2011), Khan and Faisal (2015), as well as: Církovský and Maryška (2018), Cheng and Wang (2009), Chen et al. (2004).

## 4 Summary of Literature Analysis

The qualitative analysis of publications leads to the conclusion that the number of publications in the context of the research interests of this article is even smaller than it initially resulted from the quantitative analysis of the publications. The results of literature research show a clear gap in the issue of omnichannel CRM systems (only 10 publications). Out of 247 CRM publications dedicated to SMEs, only 4 deal with omnichannel issues—therefore, the niche deepens even more. GST, or its specific tool—GIA, have never been used as an instrument in omnichannel testing (double lack of publication). An incidental use of GST in the context of CRM has been reported (4 publications). Therefore, GIA is a new research tool not yet used by any of the researchers. This broader literature research is a development of earlier authors' pilot studies regarding a comparative analysis of the functionality of CRM systems, carried out on a case study—the software service provider (Domański and Filipiak 2019).

To sum up, the originality of this article is based on: 1. undertaking a very niche topic—SME-dedicated CRM systems enabling the implementation of the omnichannel concept; 2. a pioneering solution to the problem based on an innovative research tool—the GIA method from the GST family. As part of the practical part, the CRM system specification dedicated to SMEs will be proposed for companies that use the omnichannel approach. Then, CRM systems for SMEs available on the market will be assessed in terms of meeting their omnichannel requirements.

## 5 Methodology for Testing CRM Systems Dedicated to SMEs in Terms of Omnichannel

The author's research methodology consists of 4 main steps (Fig. 1). First, research objects (CRM systems) were determined. To this end, research was conducted on the Internet, based on CRM system rankings published on the web—including https://crm.financesonline.com/, https://www.sellwise.pl/ranking-najlepych-systemow-crm-2019/, https://www.g2.com/categories/crm, https://www.capterra.com/customer-relationship-management-software/, 07.03.2020) as well as websites of manufacturers of individual CRM systems. Based on the available lists of CRM systems on the market, all those that were not dedicated to small and medium
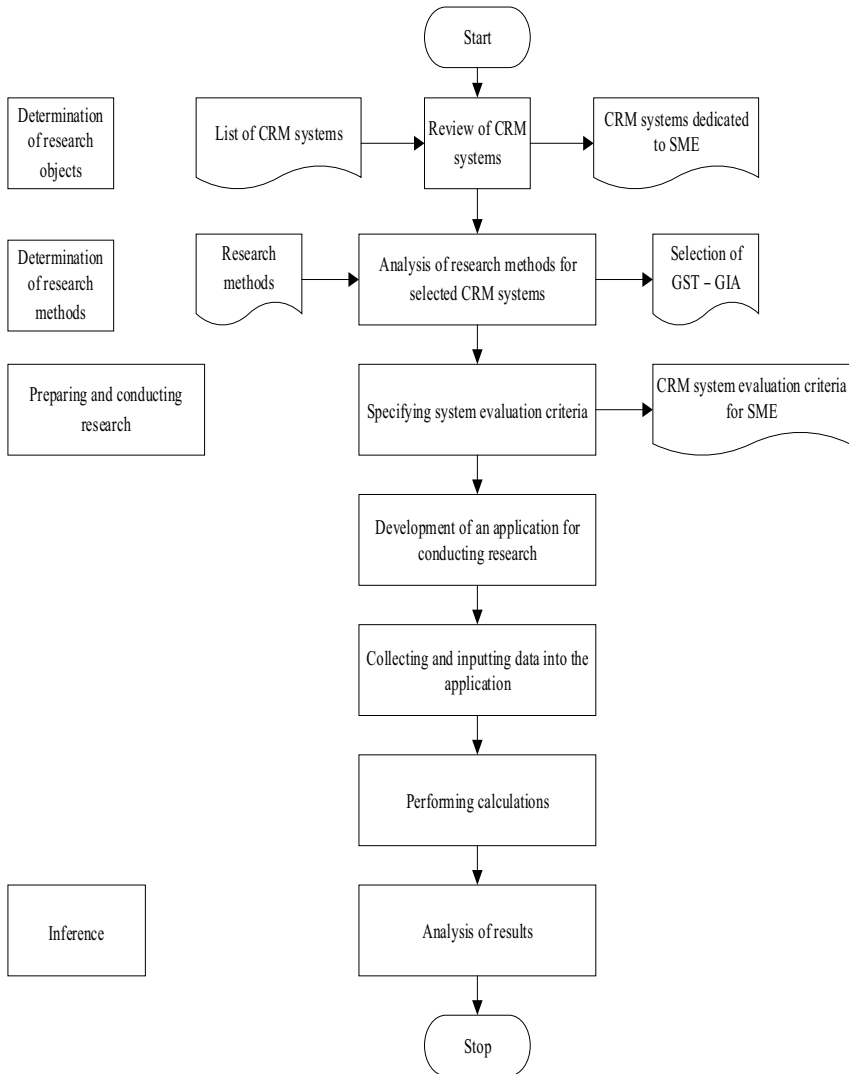
**Fig. 1** Original research methodology. *Source* Own work

enterprises were rejected (systems for large enterprises were omitted from the beginning). The selection identified 84 CRM systems for small and 53 for medium-sized enterprises. Among the selected CRM systems, only 48 of them are dedicated to SMEs at the same time. By rejecting strictly specialized systems, the authors identified 31 common, universal CRM systems that will be covered by the study. These are: Act!, Agile CRM, Avochato, Close, Creatio, EngageBay, eWay-CRM, Freshsales, HubSpot, InfoFlo, InStream, Microsoft Dynamics 365 Sales, NetHunt, NetSuite, Onpipeline, Oracle EBS CRM, Pipedrive, Pipeliner, Prophet CRM, Really Simple

Systems, Salesflare, Salesforce, SAP CRM, Shape Legal, treak, SuiteCRM, Sumac, Upsales Sales and Marketing Platform, vCita, Zengine, Zoho.

The next step in preparing the study was to review the research methods that can be used (step 2). Based on authors' earlier experience (Wojciechowski and Hadaś 2020), it was decided to use the GIA method from the grey system theory, because it perfectly fits into the research assumptions, i.e. a description of reality, a small research sample required, unknown distribution of variables. In addition, as demonstrated in the light of literature analysis (Sect. 2), the GIA method is a pioneering research tool that the authors undertake.

Then the systems that went on to the next stage were evaluated by current users (y1)—the presence and scope of operation of individual modules was examined (step 3). The assessment by system users included, among others, possibilities of managing contacts and relations with business partners, task and schedule management in terms of marketing channels, technical support, reporting and analyses, integration with other platforms, possibilities for mobile devices and social media, awards and certificates possessed, costs of purchasing a given system. The final step in collecting data was to define criteria related to omnichannel in CRM systems. On this basis, it was decided that CRM systems will be compared in terms of integration of customer service channels (x1) and the possibility of using these channels. Selected channels in CRM systems included: email (x2), an enterprise or store website (x3), social media (x4), chat with employees (x5) and telephone contact (x6). For the operational needs of the study, the authors developed a simple IT application.

The final stage of the research methodology—analysis of results and inference (step 4) will be described later in the article as a separate fragment (Sect. 5).

## 6 Implementation of the Study of Omnichannel CRM Systems Dedicated to SMEs

The first step is to collect data and fill in Table 9 where the numbers in the top row correspond to consecutive enterprises: y1 is the characteristics of the CRM system, i.e. in this case the overall rating of the system by users (it can take values from 0 to 10; 10 maximum rating), while all other factors from x1 to x6 determine the impact on this characteristic (factor x1 can have values: 0—no integration, 0.5—integration of not all channels of the CRM system, 1—full integration of all channels; factors from x2 to x6 adopt binary values: 0—the channel is not present in the system, 1—the channel is present in the system).

The next step compared the results of 31 CRM systems (IDs from 2 to 32 in Table 9) against the ideal CRM system (column 1)—representing the maximum values in each row that exists only hypothetically and was determined artificially for the purposes of the study. According to the assumptions of the grey system theory, Si and Sj coefficients are used for comparisons. The following formulas were used for calculating Si, Sj and Sj—Si (Liu et al. 2017).

**Table 9** Collected input data for calculations using the GIA method

| Id | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
|----|---|---|---|---|---|---|---|---|---|----|----|----|----|----|----|----|
| y1 | 10.0 | 8.0 | 8.4 | 8.8 | 9.4 | 9.3 | 8.9 | 8.5 | 9.6 | 9.8 | 9.1 | 9.4 | 7.4 | 8.4 | 9.5 | 8.2 |
| x1 | 1 | 1 | 1 | 0 | 0.5 | 1 | 0 | 0 | 0.5 | 1 | 1 | 0 | 1 | 1 | 1 | 0 |
| x2 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 1 |
| x3 | 1 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 1 | 0 | 1 | 1 |
| x4 | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 0 |
| x5 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 0 |
| x6 | 1 | 1 | 0 | 1 | 0 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 1 |
| id | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 |
| y1 | 8.6 | 9.4 | 9.1 | 8.2 | 8.5 | 8.8 | 9.7 | 8.2 | 8.5 | 9.0 | 8.4 | 8.5 | 8.5 | 8.8 | 9.0 | 9.4 |
| x1 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 1 | 1 |
| x2 | 0 | 1 | 1 | 0 | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| x3 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 1 | 0 | 1 | 1 | 1 | 1 |
| x4 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 |
| x5 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 1 | 0 | 1 |
| x6 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 1 | 1 | 1 | 1 |

*Source* Own work based on CRM systems rankings and CRM manufactures' websites

$$|s_i| = \left| \sum_{k=2}^{n-1} x_i(k)d2 + \frac{1}{2}x_i(n)d2 \right|$$

$$|s_j| = \left| \sum_{k=2}^{n-1} y_j(k)d2 + \frac{1}{2}y_j(n)d2 \right|$$

$$|s_j - s_i| = \left| \sum_{k=2}^{n-1}[y_j(k)d2 + x_i(k)d2] + \frac{1}{2}[y_j(n)d2 - x_i(n)d2] \right|$$

Table 10 presents a screenshot of the application in which the data collected in Table 9 were processed. The consecutive columns provide the ID of the factor, then the sum in the rows (Sum for y or x), the value of the last row (Last one for y or x), the result of calculating the value of Sj for y (the second row of the column Sj, Si), the result of calculating the value Si for each factor x (rows 3 to 8 in the column Sj, Si)—the first 7 columns are used to improve calculations in the application, and a fragment of the appropriate partial calculations (from the 8th column)—the essence of the logic of the GIA method.

On the basis of data from Table 10, after calculating the values of Sj and Si, the absolute value of Sj–Si was determined, which illustrates the degree of influence of a given factor x on the general characteristics of the CRM system y. The results of the calculation are presented in Table 11.

**Table 10** Results of comparison of each company's score to master model

| Id | Sum y or x | Last y or x | Sj, Si | Sum Sj, Si | 1 | | 1 | 2 | 3 | … | 30 | 31 | 32 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| y1 | −36.7 | −0.6 | s1 | 36.4 | 10 | y1 | 0 | −2 | −1.6 | … | −1.2 | −1 | −0.6 |
| x1 | −16.0 | 0 | s2 | 16.0 | 1 | x1 | 0 | 0 | 0 | … | −1 | 0 | 0 |
| x2 | −5.0 | 0 | s3 | 5.0 | 1 | x2 | 0 | 0 | 0 | … | 0 | 0 | 0 |
| x3 | −14.0 | 0 | s4 | 14.0 | 1 | x3 | 0 | −1 | −1 | … | 0 | 0 | 0 |
| x4 | −23.0 | 0 | s5 | 23.0 | 1 | x4 | 0 | 0 | −1 | … | 0 | −1 | 0 |
| x5 | −18.0 | 0 | s6 | 18.0 | 1 | x5 | 0 | −1 | 0 | … | 0 | −1 | 0 |
| x6 | −13.0 | 0 | s7 | 13.0 | 1 | x6 | 0 | 0 | −1 | … | 0 | 0 | 0 |

*Source* Own work

**Table 11** Sum of x1–x6 values from the table

| Sj–Si | y1 |
|---|---|
| x1 | 20.4 |
| x2 | 31.4 |
| x3 | 22.4 |
| x4 | 13.4 |
| x5 | 18.4 |
| x6 | 23.4 |

*Source* Own work

The epsilon coefficient indicates how much each of the x factors affects the characteristics of the y system, i.e. customer satisfaction. The formula for calculating the epsilon coefficient (Liu et al. 2017).

$$\varepsilon_{0i} = \frac{1 + |S_0| + |S_i|}{1 + |S_0| + |S_i| + |S_i - S_0|}$$

The final results of the GIA method, after ordering all the factors x by the descending degree of importance, are presented in Table 12.

**Table 12** Results of epsilon value in a descending order

| | | | |
|---|---|---|---|
| 0.818428 | x4 | 4.246612 | y1 |
| 0.750678 | x5 | | |
| 0.723577 | x1 | | |
| 0.696477 | x3 | | |
| 0.682927 | x6 | | |
| 0.574526 | x2 | | |

*Source* Own work

Finally, as part of extending the research process beyond the GIA method, it was decided to determine the ranking of CRM systems based on the weighted mean method. The values for the factors are data from Table 9, the weights for the factors are set out in Table 12. Table 13 presents a weighted ranking of CRM systems.

**Table 13** Comparison of weighted mean and user rating

| ID | Name | Weighted mean | User rating |
|---|---|---|---|
| 9 | Hubspot | 1.00 | 9.80 |
| 12 | Microsoft Dynamics 365 Sales | 1.00 | 7.40 |
| 31 | Zoho | 1.00 | 9.40 |
| 6 | EngageBay | 0.83 | 8.90 |
| 29 | vCita | 0.83 | 8.80 |
| 20 | Really Simple Systems | 0.81 | 8.50 |
| 26 | SuiteCRM | 0.81 | 8.40 |
| 1 | Act! | 0.66 | 8.00 |
| 24 | Shape Legal | 0.64 | 8.50 |
| 28 | Upsales Sales and Marketing Platform | 0.63 | 8.50 |
| 30 | Zengine | 0.63 | 9.00 |
| 8 | Freshsales | 0.55 | 9.60 |
| 10 | InfoFlo | 0.50 | 9.10 |
| 18 | Pipeliner | 0.49 | 9.10 |
| 2 | Agile CRM | 0.48 | 8.40 |
| 3 | Avochato | 0.47 | 8.80 |
| 14 | NetSuite | 0.47 | 9.50 |
| 13 | NetHunt | 0.47 | 8.40 |
| 7 | eWay-CRM | 0.46 | 8.50 |
| 15 | Onpipeline | 0.46 | 8.20 |
| 16 | Oracle EBS CRM | 0.34 | 8.60 |
| 5 | Creatio | 0.33 | 9.30 |
| 25 | Streak | 0.31 | 9.00 |
| 22 | Salesforce | 0.31 | 9.70 |
| 21 | Salesflare | 0.30 | 8.80 |
| 4 | Close | 0.22 | 9.40 |
| 11 | InStream | 0.18 | 9.40 |
| 23 | SAP CRM | 0.16 | 8.20 |
| 17 | Pipedrive | 0.14 | 9.40 |
| 27 | Sumac | 0.14 | 8.50 |
| 19 | Prophet CRM | 0.00 | 8.20 |

*Source* Own work

One interesting issue is the Prophet CRM system, the result of which is zero (last row in Table 13). This CRM system does not use any customer service channel—it rather serves as a database.

Finally, it was decided to divide the CRM systems listed in Table 13 into classes—the author's view. It was decided to distinguish the following classes and their ranges:

– 1.00—reference CRM systems, support all 5 customer service channels and integrate them with each other; there are 3 reference systems;
– 0.81–0.83—very good CRM systems, not much different from the standards, but with shortcomings—they support 4–5 customer service channels and try to integrate them; for selected industries, they may as well meet the reference systems if the company does not intend to use the service channels missing in these systems; there are 4 very good systems;
– 0.63–0.66—medium class of CRM systems, support 4 different customer service channels, but often do not integrate them; due to the lack of integration and support for only a few customer service channels in the medium class of CRM systems, there are large gaps in customer service, which means that such systems have a low impact on omnichannel; there are 4 medium class systems;
– 0.46–0.55—CRM systems below the medium class, systems in this class support a maximum of 3 channels, very often not integrating them all together; these CRM systems are more suitable for single or multichannel than for omnichannel; there are 9 systems below the medium class;
– <0.34—a class that most often supports a maximum of 2 different customer service channels; channel integration, if present, combines data of only 2 channels; therefore, systems of this class are suitable for enterprises that prefer a single or double channel approach; there are 11 systems in this class.

Referring to Table 13, the results of the authors' research (weighted mean) were confronted with the views of users of CRM systems (user rating). The authors' research was strictly focused on the possibilities of omnichannel functioning in CRM systems for SMEs, while users of CRM systems evaluated these systems from different, broader angles. Therefore, both classifications do not match and cannot be compared with each other.

## 7 Final Conclusions

Based on the results, it can be seen that in CRM systems evaluated in terms of the omnichannel approach, the social media channel is the customer service channel that has the greatest impact on the value of the system. The use of social media in CRM systems allows to reach a large number of customers in a non-intrusive way. In the second place was chat with an employee, i.e. a form of direct contact with the customer, which is not as official as the letter. Chat can be conducted for a longer period of time, and while doing so one can break away to focus on other activities, which may be the reason for considerable impact of this customer service channel

on the CRM system assessment. Only in the third place, somewhat surprisingly, is the integration of the channels. This solution allows customers to smoothly change the service channel used in the rapidly changing reality of everyday life. Website, which is a rather a static source of information, ranks fourth. The fifth position is phone contact—a form that requires the greatest attention from both sides. Email is the customer support channel that has the least impact on CRM rating. The reason for this may be the universality of this channel including the amount of spam customers are flooded with.

To sum up, providers of CRM systems for SMEs focus primarily on modern customer service channels—social media and chat. This corresponds to the profile of today's digitized customer (a cell phone or a laptop in the continuous internet access mode). It is technically feasible today—widespread availability of information technologies (hardware and software). More traditional forms of service—website, telephone contact, e-mail—are beginning to lose their importance.

Omnichannel, identified with the integration aspect of customer service channels (factor x1-3rd position), is already clearly noticed, yet not fully appreciated. Based on the results of the study, it can be concluded that omnichannel is implemented in CRM systems for SMEs only partially (1 for factor x1 in Table 9). Still half of the customer service interactions (0 for factor x1 in Table 9) are implemented through different, non-integrated channels—a multichannel approach.

The market for popular, universal CRM systems is not very saturated—only 31 applications. Among these CRM systems, the authors diagnosed only 7 as pro-channel CRM systems (classes: reference and very good)—it constitutes only 23% of the total number of applications. The integration of customer service channels turned out to be a key selection factor. Most CRM systems for SMEs focus only on the functioning of a certain number of channels (not all possibilities) and they cannot integrate them into one coherent system (fragmentary solutions).

Future research, based on this preliminary study, should focus on changing research subject from SME CRM to large enterprise CRM systems. Another possibility for future research is to focus deeply on SME CRM systems to create a relational network between all objects in terms of using omnichannel.

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