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Communicating the Value of Waste Management to Customers: Focus on Website Content

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Abstract. *Understanding waste management processes and their role in positive environmental changes is significant at various levels. Among members of the public, awareness can be fostered by communicating the benefits of waste management and responding to the needs of individuals.*

The web is one of the communication channels that is easily accessible to many users and managed by waste management organisations. Therefore, this study aims to explore the combinations of content ideas, forms, and customer value dimensions in communication with society about the value of waste management through a website. Theoretical analysis showed that purposeful communication of customer value can be implemented by utilising different customer value dimensions using content marketing principles. Quantitative content analysis of waste management organisation websites was conducted and directed toward the current state of communication and its patterns. The results revealed that current content focuses on the repetitive communication of functional value through informative articles. Thus, a lack of more diverse content presenting the emotional and social values of waste management was identified. The waste management field can benefit by integrating various customer value dimensions and content marketing theory to identify new opportunities and ways to involve society and achieve the scale of impact needed.

Keywords: *customer value, content marketing, waste management, website content*

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Introduction

A growing amount of waste should be considered not only by the government, business, or science communities but also by individuals. Recent research found that 9 out of 10 Europeans admit that protecting the environment is important to them personally (Eurobarometer, 2020). Furthermore, they consider the growing amount of waste as one of the top environmental issues (No. 1 in Lithuania). At the same time, each EU citizen generates an average of 500 kilograms of municipal waste per year (Statista, 2021). A study uncovered that individuals engaged in the circular economy are characterised by a high willingness to act in line with it, but actual engagement is still rather low (European Commission, 2018). Accordingly, two-thirds of Europeans feel that citizens are not doing enough to protect the environment (Eurobarometer, 2020). The amount of municipal waste per capita in Lithuania has increased from 405 kg to 480 kg over the last 15 years (Eurostat, 2023a). Unfortunately, the share of recycled waste has been steadily declining in recent years, reaching only 44.3% in 2021 (Eurostat, 2023b). These two trends have a negative effect as the goal of residual municipal waste set by the EU (European Parliament, 2018) has not been reached yet. Research (Laurynaitytė & Pažėraitė, 2022) shows that proactive public engagement is often hampered by a lack of understanding and a lack of informed acceptance of the idea.

However, only if individuals fully understand the distinctive characteristics of circular economy solutions, and have information regarding their availability and likely impact, will they be able to make more informed decisions (European Environment Agency, 2021). Vasconcelos et al. (2022) emphasised that efficient and clear communication between waste management (WM) stakeholders is a key that integrates different ways of thinking and different perspectives based on different expertise and knowledge.

Although it is clear that communication about WM has an impact, the main question, according to Kirkman and Voulvoulis (2017), is how to communicate its role and significance. This is important to understand because effective communication between WM organisations and citizens is integral to the efficient operation of WM services (Dri et al., 2018). Furthermore, this kind of communication is not only crucial from the organisation side (Budraite, 2015) but also for the customer. In terms of proper customer-oriented communication, it is worth considering the customer value (CV) concept.

The study of communicating CV of WM is important for a few reasons. First, there is an agreement between authors that WM should be treated as a product – it needs a marketing approach. Marketing stimuli are a major factor driving waste behaviour (Zhang & Cai, 2022). The report by Žalasis taškas (2021) indicates that Lithuanians typically acquire knowledge about recycling through marketing communication. Meanwhile, the CV concept is the basis of marketing, and it describes what individuals want from goods, services, or ideas. Second, a lack of information and awareness leads to the idea that WM is not necessary (Kirkman & Voulvoulis, 2017). The Lithuanian government

has named education and information of individuals as one of the main tools for waste prevention and management (Ministry of Environment of the Republic of Lithuania, 2021). Nonetheless, many countries face significant challenges in supporting citizens' WM practices, and motivational aspects are fundamental in these efforts (Gudmann Knutsson et al., 2021). Therefore, paying attention to CV is advisable because modern customers are much more likely to judge various products in terms of their value (Kiyak, 2013). According to Kumar and Reinartz (2016), value is deemed the strongest motivator of behaviour. Consequently, communication of CV has been identified as one of the research priorities (Payne et al., 2017). Third, there are numerous studies in the context of WM concerning CV or communication. However, only some reports (Chamberlin & Boks, 2018; Frempong et al., 2020) focused on the integration of these fields. The results of these reports indicated the overall positive impact of a strategic approach to value communication on customer attitude, behaviour and engagement in the circular economy and WM activities. This is limited to a general approach, without detailing the impact on customer value dimensions (CVDs), forms, topics and their combinations.

There is still a lack of detailed scientific evidence-based effective content solutions to promote sustainable behaviour. Therefore, a study on WM value communication covering different combinations of content related solutions would be a knowledge gap-filler and therefore a valuable scientific and timely contribution toward long-term urban development sustainability (Vasconcelos et al., 2022). An important challenge for WM value communication is the understanding that it needs to be adapted to a diverse society. Therefore, this study is dedicated to focusing on how to communicate the CV of WM combining different content solutions through website content. The main subject of this research is CV communication. The choice of the particular communication channel was motivated by 3 factors: 1) Europeans are willing to get information from official websites ((Eurobarometer, 2020); 2) website content affects customer behaviour (Gafni & Dvir, 2018) and content perception (Gudmann Knutsson et al., 2021); 3) website organisation involves the freedom to test and spread various communication units (Bouchra et al., 2020).

By combing the theoretical and empirical methods, this work includes scientific substantiation, research design, result analysis, discussion, and conclusions.

1. Theoretical Background

Organisations need to create CV to get value from the customer in return (Kumar & Reinartz, 2016). WM is no exception because a conducive customer decision can also be promoted by emphasising benefits and expenditure reduction (Budraite, 2015). Generally, CV is defined as a subjective and changing understanding of the compromise between the benefits received from a product and the expenditure required to obtain and consume a product (Jiao et al., 2017).

Woodruff (1997) indicates that CV can be examined at the following levels: as product characteristics, as the emotional reward the customer receives, and as the achievement of a goal or desire. CV is a manifold construct composed of dimensions that reflect different customer needs and benefits (Kumar & Reinartz, 2016). Ahn and Lee (2019) reported a multi-dimensional understanding of the CV. Although there are different opinions about what constitutes CV, the prevailing approaches are limited to 3 main content value dimensions: functional, emotional, and social (Gargasas & Mūgienė, 2017; McMurrian & Matulich, 2016; Slack et al., 2020) that reflect different groups of customer needs. Functional value is associated with the product performance (Khan et al., 2013). Emotional or hedonic value (M. Zhang et al., 2017) includes internal feelings and emotions arising from experience with the product (Leroi-Werelds, 2019). Social value expresses benefits relevant to the customer's social environment (Kiyak, 2013). McMurrian and Matulich (2016) remarked that the evaluation of economic costs is also related to customers' emotional, functional, and social needs. Thus, when communicating CV related to WM, the functional, emotional, and social values are a priority.

According to Kala and Bolia (2020), awareness building and regular effective communication are key to motivating and mobilising society for WM. The goal of communicating value is to convince customers that the organisation's offer reflects their need and suggests benefits (Gargasas & Mūgienė, 2017). It is also necessary to communicate in a customer-centric way because WM is affected by changing attitudes (Udawatta et al., 2015). From active communication, people are likely to discuss environmental issues resulting in an effective commitment (e. g., emotional involvement), influencing the individuals' collective behaviour (Vasconcelos et al., 2022).

Jiao et al. (2017) also discuss the value created by the communication itself. Previously, value was perceived only through a narrow prism of exchange and trade (Payne et al., 2017), but now the value is perceived and examined from a much broader perspective. Cronin (2016) stated that the ability of marketing to co-create value at all phases of the exchange process is an important consideration. Lou and Xie (2020) agree that CV can be achieved applying marketing tools. For instance, useful information can make a customer aware of a better solution or saving time in the search phase (Cronin, 2016). Hollebeek and Macky (2019) provide an example of how website content can educate customers and therefore help solving their problems. Following the Davidavičius and Limba (2022) study, valuable content could also meet the emotional needs. Therefore, value communication should rely on concepts and tools with a focus on CV perception. This is linked to the content marketing (CM) associated with a „content-as-value-in-use“ notion (Ho et al., 2020), and is used for various goals related to the desired customer response (Lou & Xie, 2020). There are studies linking CM with functional (Pektas & Hassan, 2020), emotional (Loggerenberg et al., 2019), and social (Jiao et al., 2017) values. Leroi-Werelds (2019) points that content provided by the organisation is only valuable if the customer uses it, thus CV should be considered in communication

planning. Moreover, applying effective CM solutions becomes an issue because of the competitive environment and information flow (Wall & Spinuzzi, 2018). Therefore, it is important for waste managers to critically evaluate the content on their websites and develop it in a way that is valuable to the society.

2. Research Design

To examine communication about CV on waste management organisations websites, a quantitative content analysis was conducted. This method is appropriate for the description of communication (Harwood & Garry, 2003), content patterns (Du Plessis, 2017), and new insights (Meyer, 2019). In addition, previous use of content analysis in CV (Zhang et al., 2019), communication (Delgado-Ballester & Fernández-Sabiote, 2016), and WM (Pollach et al., 2009) studies justify its suitability herein.

Because of a specific topic, a purposive sampling technique was applied. Organisations were selected applying the following criteria: a) those operating in the B2C sector; b) operating in Lithuania at the national or the biggest cities level; c) appearing on the directory of Lithuanian waste managing companies (www.rekvizitai.lt); d) appearing on the first five “Google” pages by search phrases “waste management” and “recycling”. These criteria ensure the collection of the major waste managers with accessible and customer-dedicated websites. After conducting the search, 19 Lithuanian WM organisations with 21 websites were identified. The selected sample (see Appendix A) covers the leading business companies, public institutions, waste managers of top Lithuanian cities, and the most prominent projects. We collected business-to-customer communication units (news, announcements, introductions to an organisation or WM, service descriptions, promotional materials, and other customer-oriented information) focusing on the need to inform and involve individuals in WM (Kirkman & Voulvoulis, 2017). Data was collected from 21 websites, and this resulted in the data set of 298 content units. Moreover, this study is exploratory, and this sample is enough to provide knowledge of the current state of CV communication. Once the content units were collected, they were encoded by the authors. A deductive coding approach was applied, and all 3 code groups were set up based on theoretical analysis. For the clarity and reliability criteria (Lacy et al., 2015), every code had a brief description with an explanation (see Appendix B):

- Code Group A identifies the main characteristic of the content idea. Researchers (Du Plessis, 2017; Lou & Xie, 2020; Rahimnia & Hassanzadeh, 2013) agree about 5 most important characteristics (ideas) of quality and valuable content (informative, reliable, relevant, emotional, and unique). Assigned code represents which of the following ideas best describes the content unit. For example, unique content means that this content unit stands out from other units and is characterized by creativity or an unusual subject or expression.

- Code Group B identifies in which form the content unit is presented. Overall, 10 different content forms that may appear on websites (Bouchra et al., 2020; Gafni & Dvir, 2018; Rahimnia & Hassanzadeh, 2013) were detected. For example, a bullet-pointed list of important information/steps means that content is presented as a checklist. Referencing the theory presented by Zheng et al. (2019), 6 of these forms (quiz/questionnaire, small text, checklist, Q&A, infographic, picture) are feather-type content (small content products), and 4 (article, video, research report, presentation/guide) are brick-type content (large content products).
- Code Group C represents 3 customer CVDs and identifies the topic content. For example, content about waste manager skills, competencies or working culture communicates professionalism (an element of functional value). Based on previous studies (Khan et al., 2013), every dimension was divided into elements that reflect specific customer needs and benefits. Both functional and emotional dimensions included 9 elements, and the social dimension involved 6 elements.

To analyse textual, visual or multimodal qualitative data, a direct content analysis was used (Hsieh & Shannon, 2005). After defining theory-based codes, data were reviewed, marked and manually assigned to identified codes. As a result, each content unit was assigned one content idea, form, value dimension, and one of its elements. This made it possible to evaluate the same content from different perspectives. Intra-coder reliability was ensured (Scheel et al., 2018) by following methodological guidelines (Harwood & Garry, 2003). The collected content units were reviewed twice and compared to assign the unified codes and clarify the data overall.

Finally, the data were analysed performing frequency analysis. Measures of frequency were applied for the overall sample as well as for communication and CVDs. The analysis allowed evaluating the current situation, determining common patterns, and finding new opportunities for CV communication.

3. Research Results

First, it is worth looking at how individual organisations communicate value and use different content ideas and forms on their websites (Table 1). Different waste managers pay attention to different communication content. Notably, the number of content units on websites varies. On a website dedicated to giving away disposed items (W6.2), there is only one content unit – the user manual. Meanwhile, the main waste manager of one city (O13) published 39 content units. This can be explained by the specific goals of organisations and websites.

More similarities among different waste managers can be found in the use of content ideas. Only 3 organisations (O1, O13, O15) use more than one idea, which indicates the common communication style, but also shows a lack of variety. For instance, there

are 29 content units on the educational website W14, but all of them could be described as informative.

Herein, the results revealed that organisations are inclined to use different content forms. Except for the website with one content unit (W6.2), the average number of used forms is 5. Only on the website W3, all content is published in the same way. The opposite situation is observed for W6.3, with 13 content units published in 8 forms, similar to more content-rich websites (W1, W13, W15).

Appraising CV communication has revealed that functional value is the main dimension among 20 of the 21 websites, and none of the organisations prioritises social value communication. Altogether, the attentions of individual organisations vary. For example, 2 (W6.1) to 12 (W15) elements of CVDs were used as topics of communication in waste manager websites with more than one content unit. The data links the number of published content units with the number of used elements. This once again suggests that more active communication creates conditions for communicating more aspects of CV. However, the differences are also visible when comparing websites with the same number of content units. For instance, website W15 used 7 more elements than website W14.

Table 1

Communication of Individual Organisations on Their Websites

Organisation	Website	No of content units	#1 Content idea (f)	#1 Content form (f)	Functional (f)	Emotional (f)	Social (f)	No of value elements	#1 Value element (f)
O1	W1	27	Uniqueness (18)	Article (9)	8	13	6	11	Affective reactions (8)
O2	W2	13	Informativeness (13)	Article (10)	10	2	1	8	Expected outcome (3)
O3	W3	3	Informativeness (3)	Article (3)	2	0	1	3	N/D
O4	W4	17	Informativeness (17)	Article (11)	11	4	2	9	Features/attributes (7)
O5	W5	9	Uniqueness (9)	Video (3)	5	2	2	5	Applicability (4)
O6	W6.1	3	Relevance (3)	N/D	2	0	1	2	Features/attributes (2)
	W6.2	1	Relevance (1)	Checklist (1)	1	0	0	1	Features/attributes (1)
	W6.3	13	Relevance (13)	Article (3)	12	1	0	4	Features/attributes (7)
O7	W7	9	Informativeness (9)	Article (8)	8	1	0	5	N/D
O8	W8	19	Uniqueness (19)	Article (7)	8	7	4	9	N/D
O9	W9	5	Relevance (5)	Q&A (2)	2	1	2	4	Features/attributes (2)

Organisation	Website	No of content units	# 1 Content idea (f)	# 1 Content form (f)	Functional (f)	Emotional (f)	Social (f)	No of value elements	# 1 Value element (f)
O10	W10	3	Relevance (3)	N/D	3	0	0	3	N/D
O11	W11	19	Relevance (19)	Checklist (5)	13	4	2	8	Applicability (8)
O12	W12	12	Relevance (12)	Article (8)	8	3	1	6	Applicability (4)
O13	W13	39	Relevance (29)	Checklist (9)	27	9	3	8	Features/attributes (15)
O14	W14	29	Informativeness (29)	Article (9)	27	2	0	5	Features/attributes (12)
O15	W15	29	Reliability (16)	Article (8)	21	7	1	12	Professionalism (17)
O16	W16	17	Informativeness (17)	Infographic (4)	14	3	0	6	Applicability (7)
O17	W17	11	Informativeness (11)	Article (7)	9	2	0	8	N/D
O18	W18	4	Informativeness (14)	Video (2)	3	1	0	3	Features/attributes (2)
O19	W19	16	Informativeness (16)	Video (8)	12	0	4	5	Features/attributes (10)

The analysis, discussion, and comparison of the results were extended by estimating the use of content ideas and content form solutions across the entire pool of content units (Table 2). Almost half of all content items can be described as informative.

Table 2
Usage of Content Idea and Content Form Solutions

Content idea	f	%	Content form	f	%
Informativeness	127	42	Article	103	34.6
Reliability	16	5.4	Quiz/questionnaire	12	4.0
Relevance	90	30.2	Small text	15	5.0
Emotions	19	6.4	Checklist	41	13.8
Uniqueness	46	15.4	Q&A	13	4.4
			Infographic	22	7.4
			Picture	11	3.7
			Video	58	19.5
			Research report	6	2.0
			Presentation/guide	17	5.7

An example would be an article that informs the audience about new technological solutions – semi-underground waste containers (VSA Vilnius, 2018). Meanwhile, emotional content is rarely used.

The predominance of brick content was found in the evaluation of the forms (184 of the 298 units). The particular use of video or checklists (33.3% of the total) appear to reflect current communication trends (i.e., a list of instructions to properly sort package waste (Gamtos ateitis, 2021)). However, bias is inevitable – another third of units are presented in a single form (articles).

In terms of CVDs (Table 3), organisations communicate with different intensity. Notably, 20 of the 24 elements included in the analysis were communicated once. However, approximately two-thirds (69.1%) of the content units communicate the functional value. The content here is related to the positive attributes of services and the applicability of WM (i. e., an article on benefits of green WM (VAATC, 2021)).

Meanwhile, emotional value is communicated significantly less than the functional value, but the pursuit to induce affective reactions was number 1 of the top 3 content topics. The social dimension is discussed less frequently (10.1%), and 2 aspects dominate: recognition of the customer's ability to manage waste or appeal to a person as a member of a community.

Table 3
Communicating CVDs and Their Elements

Functional value	f	%	Emotional value	f	%	Social value	f	%
Features, attributes	78	26.2	Positive emotions and hedonics	9	3.0	Image	4	1.3
Expected result	12	4.0	Expected outcome	1	0.3	Self-concept	1	0.3
Professionalism	17	5.7	Safety	4	1.3	Status	0	0.0
Assortment/additional services	6	2.0	Affective reactions	32	10.7	Recognition	12	4.0
Technological solutions	14	4.7	Continuity	1	0.3	Affiliation	13	4.4
Convenience	17	5.7	Satisfaction	2	0.7	Prestige	0	0.0
Applicability	62	20.8	Freedom of choice	3	1.0			
Staff	0	0.0	Aesthetics	0	0.0			
Flexibility	0	0.0	Trust	10	3.4			
	206	69.1		62	20.8		30	10.1

Considering the most common content forms and CVDs for each content idea (Table 4), articles appear to be widely used for various content. Although this presupposes the versatility of articles, different content forms could be used, too. A positive example could be short quizzes published by one educational project, which allow customers to check their knowledge and receive recognition for correct answers (Žaliasis taškas, n.d.).

Furthermore, the results show that the relationship between idea and dimension is dominated by functional value: 80.3% of informative content relates to this value. The limited emotional content only focuses on the emotional dimension.

A tendency is noted when analysing the results considering the content form (Table 4). It was determined that, in terms of frequency, all 5 ideas dominate in 9 of the 10 forms and 2 of the 3 CVDs, but communication only focuses on 4 of the 24 value elements. Furthermore, only recognition (social value) is discovered in more than half of the particular form units. Other frequent recurrences reflect functional value: 81.8% of all infographics, 70.6% of articles, and 63% of videos focus on it. Notably, there is a recurrence between separate forms and content characteristics because the specific content idea dominates in more than half of the 5 form units.

Table 4
CM Solutions Across CVDs

Content idea across content form and CVDs						
	Form	f	Dimension	f	Element of dimension	f
Informativeness (<i>n=127</i>)	Article	57	Functional	102	Features, attributes	42
Reliability (<i>n=16</i>)	Article	4	Functional	11	Professionalism	7
Relevance (<i>n=90</i>)	Article	24	Functional	72	Features, attributes	33
Emotions (<i>n=19</i>)	Article	5	Emotional	13	Affective reactions	9
Uniqueness (<i>n=46</i>)	Article	13	Functional	19	Applicability	10
	Video	13			Affective reactions (<i>emotional value</i>)	10
Content form across content idea and CVDs						
	Idea	f	Dimension	f	Element of dimension	f
Article (<i>n=103</i>)	Informative- ness	57	Functional	72	Applicability	21
Quiz/questionnaire (<i>n=12</i>)	Uniqueness	8	Social	8	Recognition	7
Small text (<i>n=15</i>)	Informative- ness	6	Functional	9	Features, attributes Affective reactions (<i>emotional value</i>)	3 3
Checklist (<i>n=41</i>)	Relevance	22	Functional	34	Applicability	10
Q&A (<i>n=13</i>)	Relevance	11	Functional	12	Features, attributes	7
Infographic (<i>n=22</i>)	Informative- ness	12	Functional	18	Features, attributes	8
Picture (<i>n=11</i>)	Emotions	4	Functional	7	Applicability	5
Video (<i>n=58</i>)	Informative- ness	28	Functional	37	Features, attributes	16
Research report (<i>n=6</i>)	Informative- ness	2	Functional	3	Features, attributes	2
	Reliability	2				
	Uniqueness	2				
Presentation/guide (<i>n=17</i>)	Relevance	8	Functional	14	Features, attributes	6

Continuing the analysis of the results, it is appropriate to look at them from the perspective of CVDs and elements (Table 5). However, only 9 of the 20 value elements are observed in less than 10 content units, which is not sufficient to explain their communication specifics. This result also indicates one-sided communication. Even the separate elements of the functional dimension, which is detected most, are communi-

Table 5*CVDs Across CM Solutions*

	Element	Idea	f	Form	f
Functional value (<i>n</i> =206)	Features and attributes (<i>n</i> =78)	Informativeness	42	Checklist	18
	Expected result (<i>n</i> =12)	Informativeness	6	Article	7
	Professionalism (<i>n</i> =17)	Informativeness	10	Article	6
	Assortment/additional services (<i>n</i> =6)	Informativeness	5	Article	5
	Technological solutions (<i>n</i> =14)	Informativeness	9	Article	10
	Convenience (<i>n</i> =17)	Relevance	7	Article	6
	Applicability (<i>n</i> =62)	Relevance	28	Article	21
		Informativeness	102	Article	72
Emotional value (<i>n</i> =62)	Positive emotions and hedonics (<i>n</i> =9)	Uniqueness	4	Article Video	3 3
	Expected outcome (<i>n</i> =1)	Uniqueness	1	Checklist	1
	Safety (<i>n</i> =4)	Relevance	2	Small text	4
	Affective reactions (<i>n</i> =32)	Uniqueness	10	Article	12
	Continuity (<i>n</i> =1)	Relevance	1	Video	1
	Satisfaction (<i>n</i> =2)	Informativeness	1	Article	1
		Reliability	1	Research report	1
	Freedom of choice (<i>n</i> =3)	Relevance	2	Article Small text Video	1 1 1
	Trust (<i>n</i> =10)	Informativeness	3	Quiz/questionnaire	2
		Reliability	3	Small text Video	2 2
		Informativeness	17	Article	21
		Relevance	17		
Social value (<i>n</i> =30)	Image (<i>n</i> =4)	Informativeness	4	Video	3
	Self-concept (<i>n</i> =4)	Uniqueness	1	Research report	1
	Recognition (<i>n</i> =12)	Uniqueness	6	Quiz/questionnaire	7
	Affiliation (<i>n</i> =13)	Informativeness	4	Article	6
		Relevance	4		
		Uniqueness	10	Article	10

cated unequally: containing 6 to 78 content units. A similar gap is observed for other dimensions as well. Additionally, the functional value and its elements are dominated by informative and relevant content. Meanwhile, although the emotional and social value are communicated much less frequently, more diverse content is used for this purpose (i.e., small texts with statistics about the increasing amount of generated waste (Atliekų kultūra, 2022)).

This observation applies across the variety of content forms. The fact that research reports, brick content, used by such elements as satisfaction and self-concept emphasis or by communicating functional value, and quiz/ questionnaire that is never used illustrates the possibilities for variety. Surprisingly, none of the elements of emotional value are dominated by emotional content.

Finally, the most popular combinations of content idea, form, and CVDs were identified (Table 6).

Table 6

Popular Combinations of Content Ideas, Content Forms, and CVDs

	Idea	Form	Dimension	Element	f
#1	Informativeness	Video	Functional	Features, attributes	12
#2	Informativeness	Article	Functional	Features, attributes	11
#3	Informativeness	Checklist	Functional	Features, attributes	10
#4–5	Relevance	Article	Functional	Applicability	9
	Informativeness	Article	Functional	Applicability	9

Despite the general directionality of communication, even for the most popular combination, an informative video clip emphasising functional features and attributes comprises only 4.02% of all units. Therefore, it cannot be asserted that there is a single communication template. More generally, it could be stated that communication on WM CV is proceeding purposefully but needs some improvements.

4. Discussion and Managerial Implications

The analysis revealed that current communication tends to be one-sided and tendentious. Despite this, organizations try to allocate resources and attention to communication, ranging from the quantity of content units to their frequency of publication. However, the intensity and quality of communication vary. Public organisations tend to publish more content than the private sector, and their content is more versatile. This is especially typical on the websites of regional waste managers.

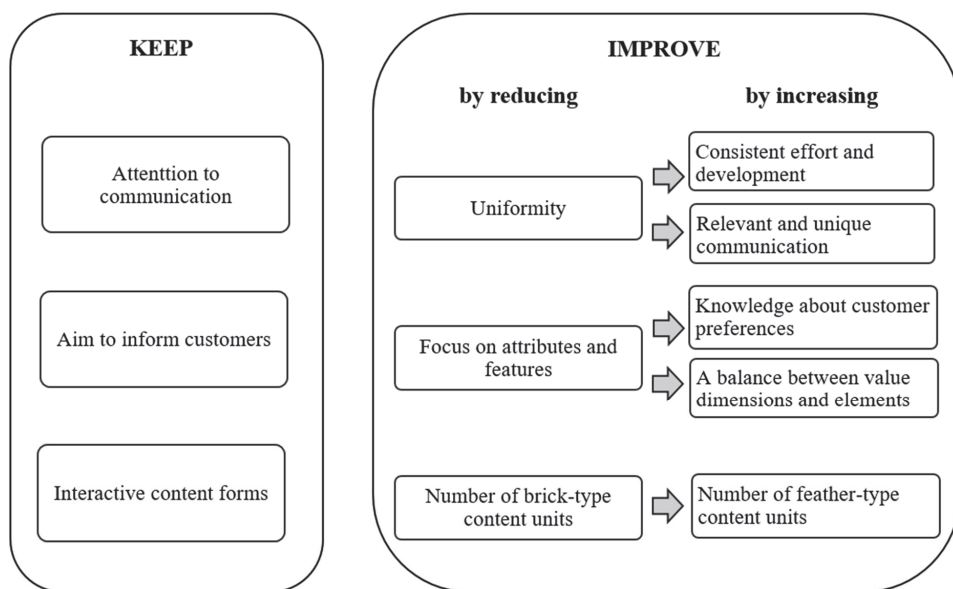
Comparing our results with other studies, the most common directions of communication become apparent. Foremost, the functional dimension of value is overwhelmingly considered (Gargasas & Mūgienė, 2017). This connects with the finding that functional features are considerations which influence customers' decisions in choos-

ing and adopting green products, services or ideas (Amin & Tarun, 2021). Thus, existing communication about attributes and features is important in the context of customer behaviour (Budraite, 2015). Predominance of informative content meets waste management communication goals (Vasconcelos et al., 2022). Meanwhile, its usage for functional features reflects website communication practices (Gafni & Dvir, 2018). Detected patterns of content solutions align with the observation that the content form induces guidelines for the content and vice versa (Zheng et al., 2019). The overall results support the applicability of the website to promote CV in the context of CM (Gafni & Dvir, 2018) and WM (Lee & Krieger, 2020). Therefore, effective communication is crucial for maintaining consistent interaction with society.

The performed content analysis and comparison with previous research suggest managerial guidelines for more effective communication (Figure 1).

Figure 1

Managerial Guidelines for Communicating Value of WM Through the Website Content



First of all, it is worth continuing to pay attention to communication, because positive impacts of communication in WM have been demonstrated (Kala & Bolia, 2020). Informing consumers should not be a priority either. Previous studies have confirmed that informative content is useful for introducing customers to WM (Lee & Krieger, 2020) and reducing uncertainty or dissatisfaction with innovation (Kirkman & Voulvoulis, 2017). This is particularly relevant because more than a fifth of Europeans believe they have a lack of knowledge regarding waste issues (Eurobarometer, 2020). Milute-Plepiene et al. (2016) study shows that uninformed individuals lack motivation

to participate in WM activities. Therefore, websites with interactive content facilitate spreading the message (Du Plessis, 2017) and increase its appeal to content users (Delgado-Ballester & Fernández-Sabiote, 2016).

Secondly, the detailed analysis, broken down into a large number of research units, and systematisation of obtained results allowed us to identify the dominant combinations of WM value communication solutions (e.g., informative content about functional value). It can be pointed out that the few patterns used to generate content cannot be equally useful, engaging, and effective for all societal needs. This insight is reinforced by the results achieved by other authors showing the importance of diversity (Du Plessis, 2017) and engagement elements (Alam & Wulandari, 2019). Emerged need for variety reflects the United Nations Environment Programme (2015) proposal to develop an integrated and comprehensive communication style. Reducing communication about WM features and attributes could be a start, while focusing on the functional dimension is potentially the simplest way to communicate value (Pektas & Hassan, 2020), other dimensions, unfortunately underused, may be more important for customer behaviour. In line with Zheng et al. results (2019), this study also shows that brick content dominates the websites of WM organisations. Meanwhile, effective communication trends (Lopes et al., 2022) presuppose the reduction of larger volume content.

Thirdly, the findings indicate that there is a need to increase some aspects of communication. Typically, the low amount of communication on the website does not sufficiently explain the value. Individuals are more aware and committed if WM messages are consistently communicated (Nmere et al., 2020). However, ensuring consistency requires daily efforts and development rather than simply increasing the number of uniform content units. To achieve positive changes, communication should meet more customers' informational needs (Lopes et al., 2022), such as content uniqueness (Du Plessis, 2017) and relevance (Bouchra et al., 2020). Also, communication should be expanded to include more diverse value picture, especially considering that different CVDs have different roles in customer decision (An & Han, 2020). Before communicating the WM value, it is important to examine the CV expectations and determine which value elements are relevant (Leroi-Werelds, 2019). Previous research on the WM area indicates that various aspects are important: convenience (Kala & Bolia, 2020), the belief that other individuals recycle (Miliute-Plepiene et al., 2016), moral benefits (Nguyen et al., 2017), trust (Kirkman & Voulvoulis, 2017), social norms (Huber et al., 2020), awareness of consequence (Fan et al., 2019), desire to maintain a social image or express beliefs (Budraite, 2015).

Previously mentioned reductions open up opportunities for new solutions. It is significant to focus on more comprehensive and balanced communication of other value dimensions. Studies have shown that emotional appeals work better (Meneses, 2010) and highlighting social benefits encourages environmental behaviour (Gao et al., 2021). People are motivated by emotions emerging from many stimuli, including environmentally friendly behaviour (Nguyen et al., 2017), awareness about the prob-

lem (Miliute-Plepiene et al., 2016) and inner satisfaction (Budraite, 2015). Although Huber et al. (2020) indicated the expediency of social dimension, the results of this study do not identify its frequent use. This suggests that purposeful communication of social or emotional values should be increased. From a CM perspective, the brick-type may be replaced with the feather-type, which is considered easily consumable (Diachuk et al., 2021) and user-friendly (Bouchra et al., 2020).

Given the complexity of understanding value, the results of the study suggest that the use of more content combinations would facilitate a greater diversity of communication and prevention of content from being diluted or ignored. It is worth noting that the presented guidelines can be valuable for both developing effective communication combinations and for evaluating the effectiveness of current WM value communication.

5. Conclusion, Limitations and Future Research

The importance of customer attitude, lack of information, and need for marketing activities in the circular economy field explain the relevance of CV communication. The theoretical analysis confirmed that a particular issue is significant for positive changes in WM. CV is a meaningful and multifaceted concept, and CM, which is a closely related concept, can be used for communicating and creating CV. Furthermore, dividing value into dimensions makes it possible to single out aspects of WM that can become the subject and focus of communicative content.

Content analysis revealed that current communication about WM on websites can be described as purposeful but unilateral. There is sufficient coverage related to functional value, especially with the communication of functional attributes and features of WM. The results also showed that organisations have mastered informative and article-based content. Unfortunately, the remaining CVDs do not receive the necessary attention, even though the emotional and social needs of the customer play important roles in WM. Moreover, the discussion emphasised that the tendency of certain content ideas and forms limits the attractiveness and potential of the communication.

This research connects the customer value with waste management, communication, and content marketing solutions. Furthermore, this study contributes to the WM practice by determining current communications patterns and proposing directions for future website content development to gain advantages from higher value communication. There are some limitations. The study does not include customers perception; a theory-based deductive coding provides a clear vision of data but restricts the ability to find new categories; the results of the study include content units that existed at a certain time. It is therefore worth repeating the study with regard to both the new content and reactions of users to it. Future studies could be extended by investigating WM value communication through various channels (e.g., social networks, mass media). Accordingly, content analysis could be supplemented by an experiment or a survey. It would provide a more comprehensive understanding of the impact of WM messages on individuals' awareness and commitment.

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Appendix A

Organisations and Websites Included in the Research Sample

Organisation	Field of Activity	Sector	Coverage	Website	Website Type
O1	WM	Public	Regional	W1	Business website (BW)
O2	Educational project (EP)	Public	National	W2	Informational web-site (IW)
O3	EP	Public	National	W3	IW
O4	WM	Private	National	W4	BW
O5	WM	Private	National	W5	BW
O6	WM	Public	Regional	W6.1	IW
				W6.2	BW
				W6.3	Non-profit e-commerce website
O7	Recycling	Private	National	W7	BW
O8	WM	Private	Regional	W8	BW
O9	WM	Private	National	W9	BW
O10	Recycling	Private	National	W10	BW
O11	WM	Public	Regional	W11	BW
O12	WM	Public	Regional	W12	BW
O13	WM	Public	Regional	W13	BW
O14	EP	Public	National	W14	IW
O15	Recycling	Public	National	W15	BW
O16	EP	Public	National	W16	IW
O17	WM	Public	Regional	W17	BW
O18	Recycling	Private	National	W18	BW
O19	WM	Public	National	W19	BW

Appendix B

Codes Included in the Content Analysis

	Code	Description
Content idea	A	
Informativeness	A1	Content is informative and provides its user service-related knowledge or answers.
Reliability	A2	Contents is trustable and provides its user adequate information in a reasonable manner.
Relevance	A3	Content is suitable for a particular context and provides helpful information for its user and meets his/her needs.
Emotions	A4	Content is touching or entertaining and appeals to its user's feelings.
Uniqueness	A5	Content stands out from other units and is characterized by creativity or an unusual subject or expression.

	Code	Description
Content form	B	
Article	B1	Medium or large volume (>300 words) piece of writing on a particular subject
Quiz/questionnaire	B2	Interactive set of questions with the function to submit answers
Small text	B3	Short piece of writing (<300 words) that quickly delivers a message
Checklist	B4	Bullet-pointed list of important information or steps
Q&A	B5	Section with answers typically associated with frequently user-asked questions
Infographic	B6	Graph/illustration presenting or explaining information
Picture	B7	Photo/illustration or a set of them
Video	B8	Short film or animation on a particular subject
Research report	B9	External file with information based on research data and result analysis
Presentation/guide	B10	External larger volume file with guided or presenting information about a topic
CVDs	C	
Functional	C1	Content related to:
Features, attributes	C1.1	characteristics, quality or features that describe a services
Expected result	C1.2	how services meet customer expectations for functional aspects of services
Professionalism	C1.3	organisation skills, competencies or working culture
Assortment/additional services	C1.4	range of offered services and their variations
Technological solutions	C1.5	organisation-implemented technological solutions in a service provision
Convenience	C1.6	how services do not require a lot of customer effort or do not cause difficulty for customers
Applicability	C1.7	how services could be applied to customer needs or given purposes
Staff	C1.8	organisation staff and its ability to provide services
Flexibility	C1.9	how services could vary and change to customer needs or given purposes
Emotional	C2	Content related to:
Positive emotions, hedonics	C2.1	ability of services to raise positive feelings or give pleasure to a customer
Expected outcome	C2.2	how services meet customer expectations for the emotional state raised by services
Safety	C2.3	assurance that services do not harm or raise any danger to customer
Affective reactions	C2.4	ability of services to elicit strong positive or negative emotional reactions
Continuity	C2.5	services' consistency, continuity or desired stability
Satisfaction	C2.6	services' ability to satisfy the customer with a proposition or services themselves
Freedom of choice	C2.7	feelings of free will and independence that belong to the customer
Aesthetics	C2.8	service or organisation itself ability to please customers aesthetically
Trust	C2.9	assurance that the organisation and its services are reliable
Social	C3	Content related to how services fulfil
Image	C3.1	customers' wish to be seen in a particular way by the society
Self-concept	C3.2	customers' perception of who they are or willing to be
Status	C3.3	customers' wish for certain status in society
Recognition	C3.4	customers' wish for acceptance and respect from society
Affiliation	C3.5	customers' wish to belong to a particular society
Prestige	C3.6	customers' need to raise their value and prestige in a society