Value co-creation in the animal healthcare sector

by Pyatt, A., Wright, G., Walley, K. and Bleach, E.

Pyatt, A., Wright, G., Walley, K. and Bleach, E. 2016. *Value co-creation in the animal healthcare sector. Presented at the 4th International Conference on Contemporary Marketing Issues, 22-24 June 2016, Heraklion.*

Value co-creation in the animal healthcare sector

A. Pyatt*
Harper Adams University
Newport
TF10 8NB, UK

apyatt@harper-adams.ac.uk

G. Wright
Manchester Metropolitan University Business School

g.wright@mmu.ac.uk

K. Walley
Harper Adams University

kwalley@harper-adams.ac.uk

E. Bleach
Harper Adams University

ebleach@harper-adams.ac.uk

Abstract

apyatt@harper-adams.ac.uk

Domesticated animals form an important part of modern life, fulfilling roles as household companions, working animals or food producing livestock. Regardless of the position they realise within contemporary society, their day to day care is now complex and involves a range of animal healthcare practitioners in addition to the veterinary professional, termed paraprofessionals. The discerning nature of the modern client in combination with the developing roles of professionals within the sector has transformed market dynamics and highlighted the need for reflection on measures of service quality and its provision.
This paper presents a conceptualisation of value co-creation within animal healthcare based on an analysis of sector stakeholders' service experiences. Interviews with service providers and clients provide data for content analysis and highlight the dimensions of communication and integrated care as important components of service provision. Exploratory factor analysis of questionnaire data (n=271) following surveying of veterinarians and paraprofessionals, loaded onto seven latent factors, with strong dimensions of trust and communication identified. Disparity between veterinarian and client opinion was of interest and is worthy of further investigation, but results obtained support the application of value co-creation models to develop service quality within the UK animal healthcare sector.

Keywords: *Service delivery Co-creation Value Animal health sector*

1. INTRODUCTION

Two factors underpin the scale of the demand for animal healthcare: consumer demand for animal related products and the propensity of people to keep animals as domestic companions. The animal healthcare sector is an interesting one

because of the current developments in the popularity of some paraprofessional services. Traditionally the domain of vets specialising in farm, equine or companion animal service, other providers have begun to enter the market. This sector has become known collectively as paraprofessionals and includes providers such as physiotherapists, chiropractors, pharmacists, nutritionists and veterinary nurses with differing health care expertise. Whilst some progressive veterinary organisations operate with established multi-disciplinary teams and appreciate the benefits of these, there remains major tensions in the animal health sector. This paper addresses the ways in which key stakeholders see the service provision from a perspective of service quality, and specifically through the lens of the co-creation of value.

The client quest for better value means that enterprises need to be dynamic and able to quickly respond to evolving markets. Industry sectors generally appreciate that service quality and a customer centric ethos enables retention and attraction of clients which impacts on profitability. In the animal health industry client loyalty can no longer be guaranteed and customers will change service providers in the pursuit of higher service quality and better value. Often this sector has failed to maintain pace with developing client demands and has an over-reliance on historically successful delivery models. This is reflected in a lack of applied service quality research in the UK animal health sector in comparison with the parallel human healthcare sector and the US animal health industries. The aim of this paper is to explore the role of value co-creation in the way service provider groups construct their notion of service-quality. Specifically, the objectives are to understand how vets and paraprofessionals view the elements of service delivery; to compare the service perceptions in the context of value co-creation and to assess construct service dimensionality in the context of value co-creation.

2. SERVICE AND VALUE CO-CREATION CONSTRUCTS IN ANIMAL HEALTH

Service quality is accepted as a fundamental driver for sustainability and success (Buttle, 1996; Vargo and Lusch, 2004; Zeithaml, 2009) and service is considered to be the foundation of all economic exchange (Vargo and Lusch, 2008). Service-dominant logic emphasises the interactions between service provider and clients proposing all service to be inherently relational (Lusch and Vargo, 2011) as perceived relationships and cohesive bonds underpin loyalty, leading to co-operation and creating value in service (Grönroos, 2000). To provide excellent service the provider needs to know: What do the clients expect? What is a great service? How can the service be graded? How can the service be measured? These questions are complex and subjective (Lisch, 2014). Knowing what clients expect and managing expectations are pre-requisites for service fulfilment but the lack of empirical service quality research in the animal healthcare sectors presents a distinct challenge.

Animal healthcare practitioners provide functional service to clients but have yet to acknowledge the full importance of service quality to sustainability and success. Comparable human healthcare sectors have long recognised the significance of service quality and the field has been subject to considerable inquiry (Vogus and McCelland, 2016). The failure of the animal healthcare sector to identify with models of service provision is likely to affect advancement of the industry and resultant business viability (Williams and Jordan, 2015).

The notion of value co-creation corresponds to an area of service quality theory which has not been applied to the animal healthcare sector. Improvements in the maintenance of medical recording techniques and accessibility of practices with corporatisation (Lee, 2006; Williams and Jordan, 2015) appears to facilitate client movement from one healthcare provider to another, ultimately diminishing loyalty. Clients are familiar with switching allegiance in other areas of service provision which, with an overall increase in public awareness of veterinary medicine due to a plethora of veterinary television programmes and ease of online searches, diminishes practice allegiance. This is exacerbated by an industry move to larger practices where clients do not have the opportunity to form all-important bonds with a veterinarian (Lee, 2006). Continuity of care in human medicine and the development of strong relationships between the patient and medical practitioner is known to improve treatment compliance and outcomes (Cabana and Lee, 2004). In the animal healthcare industry client loyalty can no longer be easily guaranteed and customers will change service providers in pursuit of better value and higher service quality. In this respect the animal healthcare sector has failed to maintain pace with developing client behaviours and is seen to have an over-reliance on historically successful models of customer loyalty (Lee, 2006; Lowe, 2009) and this is reflected in a lack of service quality research in the sector.

In models of value co-creation, the client is endogenous to and actively participates in the service provision (Vargo and Lusch, 2008) and this notion is suggested as relevant and valuable in the provision of animal healthcare (Grand *et al.*,2013). Value co-creation is a means to maintain long term relationships and build loyalty (Leppiman and Same, 2011) and the extant literature categorises value co-creation into five elements: process environment, resources, co-production, perceived benefits and management structure (Bharti *et al.*, 2015). Resource categorisation encompasses the concepts of relationship and trust, which is an important element of effective co-creation of value (Bharti *et al.*, 2015). The development of bonds, with mutual commitment to the process are essential constituents of trust, mirroring the limited but existing animal healthcare literature (Coe *et al.*, 2008). Active participation by the client has been defined as the "extent to which customers share information, provide suggestions and engage in shared decision making "(Chan *et al.*, 2010). This manifests in the animal healthcare sector as clients wish to be educated and actively involved in the decision-making process (Coe *et al.*, 2008) of animal care.

Trust is identified as a fundamental quality of human interaction and relationships (Grand *et al.*, 2013) and is an essential component in the creation and maintenance of the client-medical practitioner relationship in health care (Trachtenberg *et al.*, 2005). A similar tendency is apparent in the animal health sector as client perception of service

quality and so likelihood of future visits (loyalty) is strongly associated with developing positive interaction and relationships (American Animal Hospital Association, 2009; Brown and Silverman, 1999). Additionally, the development of trust is shaped by the communicative interaction and clients want to voice questions and concerns but be confident in the practitioners' professionalism and overall decision making capabilities (Grand *et al.*, 2013).

3. METHOD

The method underpinning this project comprised a series of semi-structured interviews (n=13), followed by surveys of veterinarians and paraprofessionals (n=271). This coverage represents the key stakeholder providers in the animal healthcare sector. The interviews employed the critical incident technique and the principles of grounded theory informed the approach to analysis utilizing NVivo© software. Each interview was transcribed and scrutinized immediately post-interview so that each discussion informed the next. On completion of all interviews, the matrix word analysis facility in NVivo© was implemented to evidence the areas most closely aligned with theories of value co-creation, communication and integrated care. This analysis was undertaken to facilitate deeper understanding of the nomenclature associated with animal health services and to underpin the construct validity of the survey instrument. The purpose of the survey was to test the predicted value sets that were indicated in the qualitative analysis to develop a conceptualization of service for comparison between the stakeholder groups. The results of the qualitative phase informed the development of the survey instrument which was customised for each of the three stakeholder groups. This customisation involved using the language and terminology to suit each sample group, though comparable items were used for each. The survey instrument comprised 24 items covering nine dimensions identified from the literature and the qualitative phase. Each dimension was covered by two or three items to improve validity (Fowler, 2014). After a pilot study (n=10), the survey was implemented in work places and through attendance at events and venues, including professional training days and conferences. The survey questionnaire was administered face-to-face and the data recorded in SPSS. After scrutiny of descriptive data, exploratory factor analysis (EFA) was used as the focal point of the analysis. This enabled the examination of the themes that represent the maximum variance in the data set, effectively reducing the large number of variables to a smaller number of factors.

4. RESULTS

From the analysis of the interviews, nine underlying themes regarding service delivery in the animal healthcare sector emerged: trustworthiness, communication, value for money, empathy, bespoke, integrated care, tangibles, accessibility and outcome driven service. The matrix coding through NVivo© facilitated examination of the word count analysis (See Table 1).

Table 1 Content analysis of interview data

Dimensions of Service	Content Analysis based on word frequency			Total
	Veterinarian	Client	Para-professional	
Accessibility	2,505	3,558	4,362	10,425
Bespoke	3,597	4,207	3,338	11,142
Communication	2,535	8,194	9,292	20,021 (15%)
Empathy	2,016	4,974	4,375	11,365
Integrated care	5,205	7,951	14,678	27,834 (22%)
Outcome driven service	2,432	5,983	3,491	11,906
Tangibles	630	0	899	1,529
Trustworthiness	2,732	8,216	6,173	17,121
Value for money	7,519	2,448	5,885	15,852
				127,195

Factor analysis enabled identification of the inter-relationship between variables and to, therefore, determine the main factors accounting for the observable relationships within the data. If the questions measure the same underlying dimensions, then it would be expected that these specific questions would have a high correlation, in practice addressing different elements of the same factor. The critical assumptions underlying factor analysis were tested using the Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy for the number of variables (KMO=0.813) which exceeds the recommended value of 0.6 (Kaiser, 1960) to determine the reliability of scale. Values close to one indicate patterns of correlations which are relatively compact, indicating distinct and reliable factors. Bartlett's Test of Sphericity indicates if the correlation matrix is significantly different from the identity matrix (χ^2: 1259.787, df:2; sig: .000); if significant then the overall correlation between variables will be significantly different from zero. Both KMO and Bartlett's tests were supportive of the data being appropriate for Exploratory Factor Analysis (EFA). Thus the variables were subjected to EFA using Principal Component Analysis (PCA) as the extraction method and Varimax

rotation with Kaiser normalization. All factors with eigenvalues greater than 1.0 were extracted. Varimax was chosen to enable for better interpretation, to determine an optimal simple solution and to help to describe patterns observed within the data. Varimax is used to maximise the orthogonality and minimise the number of high loading variables on each factor thus working to make loadings as small as possible. Factor loadings were evaluated on two criteria: the significance of the loadings and the simplicity of the factor structure. Items were excluded from factors according to guidelines developed by Churchill (1979) and Kim and Mueller (1978), namely: loadings of less than 0.5, or cross-loadings greater than 0.35 on two or more factors. The variables loaded satisfactorily on to seven latent factors, explaining 59.43% of the total variance. Table 2 shows the construct strengths for the seven latent factors extracted from the 24 variables, and the loadings for the principal factor to which each variable contributes.

Table 2
Exploratory Factor Analysis: Elements of Animal Health Service

Factor	1	2	3	4	5	6	7
Trust (α = 0.7470)							
Continuity of care	.530						
Equipment	.646						
Animal welfare	.428						
There is time for compassion	.538						
Price reflects service provided	.730						
Clients are not faced with unexpected costs	.705						
Communication (α = 0.7494)							
There is time for compassion		.453					
It is easy to talk to clients		.859					
Clients understand		.805					
Relationship between clients and professionals is good		.625					
Professional rapport (α = 0.7494)							
I actively seek to work with others			.461				
Clients are made to feel welcome			.458				
It is important to stay up to date			.770				
Rapport development			.798				
Responsiveness (α = 0.7494)							
Team working				.418			
Professional appearance				.678			
Prompt response to calls				.688			
Second opinion				.461			
Animal focus (α = 0.7494)							
Expectations of animal handling					.557		
Clients expect out of hours care					.770		
Credibility (α = 0.8531)							
Work within own specialism						.534	
Expectations of animal handling						.430	
Clients expect me to take control of the situation						.650	
I provide health plans						.580	
Access (α = 0.8531)							
Location is important							.795
Clients can contact me by email and text							-.481
% of variance explained	11.68	10.58	9.18	8.05	7.82	6.78	5.34
Cumulative % of variance explained	11.68	22.26	31.44	39.49	47.31	54.09	59.43

Sample: n = 271; all respondents

Further EFAs were undertaken for each of the sub-groups. Each met the criteria for undertaking EFA and the results are summarised in Table 3.

Table 3
Exploratory Factor Analysis: Elements of Animal Health Service by Stakeholder Group

Veterinarians	Paraprofessionals
EIGHT FACTOR SOLUTION	
FACTOR 1 (17.12 of variance)	**FACTOR 1** (11.37 of variance)
12 Easy to talk to clients on their level	15 Price reflects service given
13 Clients able to understand what I am telling them	16 clients not faced with unexpected costs
11 Time to treat clients with compassion	11 Time to treat clients with compassion
20 Expect out of hours care	6 equipment is up to date, clean & works
22 Clients can contact me by text/email	3 Always able to provide continuity of care
19 Clients feel welcome	
10 Animals' welfare always main priority	
16 clients not faced with unexpected costs	
FACTOR 2 (9.71 of variance)	**FACTOR 2** (9.70 of variance)
18 Actively seek to work with others	12 Easy to talk to clients on their level
5 Health professionals work together	13 Clients able to understand what I am telling them
21 I am comfortable with second opinion	*14 My relationship with clients is good*
FACTOR 3 (8.53 of variance)	**FACTOR 3** (9.05 of variance)
9 Location is important to clients	23 It is important to stay up to date
7 Clients expect clean & tidy appearance	24 Developing a rapport with clients is important
14 My relationship with clients is good	18 Actively seek to work with others
FACTOR 4 (8.30 of variance)	**FACTOR 4** (8.86 of variance)
10 Animals welfare always main priority	21 I am comfortable with second opinion
8 Calls or emails are promptly responded to	5 Health professionals work together
3 Always able to provide continuity of care	19 Clients feel welcome
24 Developing a rapport with clients is important	7 Clients expect clean & tidy appearance
23 It is important to stay up to date	*8 Calls or emails are promptly responded to*
FACTOR 5 (7.87 of variance)	**FACTOR 5** (7.86 of variance)
15 Price reflects service given	2 Excellent animal handling skills
6 equipment is up to date, clean & works	20 Expect out of hours care
16 clients not faced with unexpected costs	10 animals welfare always main priority
FACTOR 6 (7.04 of variance)	**FACTOR 6** (7.73 of variance)
2 Excellent animal handling skills	*14 My relationship with clients is good*
1 Work within own area of specialism	17 I provide health plans for animals under my care
23 It is important to stay up to date	4 Clients expect me to take control of situation
	1 Work within own area of specialism
	8 Calls or emails are promptly responded to
	22 Clients can contact me by text/email
FACTOR 7 (5.61 of variance)	**FACTOR 7** (6.57 of variance)
4 Clients expect me to take control of situation	9 Location is important to clients
14 My relationship with clients is good	*22 Clients can contact me by text/email*
FACTOR 8 (5.17 of variance)	
17 I provide health plans for animals under my care	

5. DISCUSSION

The first objective was to understand how the stakeholder groups view the elements of service delivery. The NVivo© and word matrix results indicated extreme differences between the three groups of vets, paraprofessionals and clients on the issues of communication and collaboration. This analysis suggests congruence between paraprofessionals and clients and these two groups expressed opinions that are quite distinct from the perceptions and priorities of vets. Overall, based on data from all three groups of clients, vets and paraprofessionals, the results of the content analysis highlighted dimensions of integrated care (22%) and communication (15%) as the most important factors. An interesting outcome was the strength of the communication focused factors in the vet sub-group (see Table 3). This was somewhat at odds with the emphasis that they placed on this in the qualitative phase (Table 1). This may be explained as clients did not participate in part two of the study and may be suggestive of a mismatch between veterinary perception of client communication and actual client feedback, presenting a distinct area of interest which warrants further investigation. Secondly, the research set out to compare the service perceptions of the role of value co-creation between vets and paraprofessionals as suggested within the existing literature. Dimensions of value co-creation were evident in all three groups surveyed, with factors of trust, communication and professional rapport identified as essential components of service quality within the sector. This is an interesting development and is suggestive of the potential usefulness to service providers in this area who embrace value co-creation within their marketing strategy. The final objective was to propose a construct of service dimensionality in the context of value co-creation for both the vet and the emergent group of paraprofessionals. The role of the paraprofessional allows for more effective involvement of

the client within the service process as this group of practitioners do not appear to be as heavily restricted by time constraints as the veterinarians (Coe *et al.*, 2013). Equally, the paraprofessional may leave activities or actions to be completed by the pet animal owner in between visits, such as monitoring diets or performing exercises, therefore facilitating co-operation, involvement and so co-creating value within the service progress. Successful integration of co-creation within the veterinarian population may prove to be more challenging but unavoidable in client driven service.

6. CONCLUSION

The overarching aim of this investigation was to explore the role of value co-creation in the way stakeholders' construct their notion of service and to assess the potential significance of value co-creation in sector specific marketing models. Business models within the animal healthcare sector are rapidly developing, as are client demands and expectations. To keep pace with the requirements of the modern client the animal healthcare industry needs to advance awareness and application of marketing theory. This study has proposed value co-creation and co-production as significant tools to bridge the potential gap between client experience of service and professionals' perception of the service provided and as a means to enhance business competitiveness.

7. REFERENCES

American Animal Hospital Association (2009). Compliance: Taking quality care to the next level. AAHA.CO.

Bharti, K., Agrawal, R. and Sharma, V. (2015). Value co-creation: Literature review and proposed conceptual framework. *International Journal of Market Research*, 57 (4), pp. 571-604.

Brown, J.P. and Silverman, J.D. (1999). The current and future market for veterinarian and veterinary medical services in the United States. *Journal of American Veterinary Medicine Association,* 215 (5), pp.166.

Buttle, F. (1996). SERVQUAL: Review, critique, research agenda. *European Journal of Marketing,* 30 (1), pp. 8-32.

Cabana, M. D. and Jee, S. H. (2004). Does continuity of care improve patient outcomes? *Journal of Family Practice,* 53 (12), pp. 974-980.

Chan, K.W.; Yim, C.K. and Lam, S.S. (2010). Is customer participation in value creation a double edged sword? Evidence from professional financial services across culture. *Journal of Marketing.* 74 (3), pp. 48-64.

Churchill, G.A. (1979). A paradigm for developing better measures of marketing constructs. *Journal of Marketing Research.* 16 (1), pp. 64-73.

Coe, J. B., Adams, C. L. and Bonnett, B. N. (2008). A focus group study of veterinarians' and pet owners' perceptions of veterinarian-client communication in companion animal practice. *Journal of American Veterinary Medicine Association,* 233 (7), pp. 1072-1080.

Fowler, P. (2014). *Research philosophies - importance and relevance.* Cranfield School of Management. Cranfield.

Grand, J.A.; Lloyd, J.W.; Ilgen, D.R.; Abood, A. and Sonea, I.M. (2013). A measure of and predictors for veterinarian trust developed with veterinary students in a simulated companion animal practice. *Journal of the American Veterinary Association,* 242 (30), pp.322-304.

Grönroos, C. (2000). *Service management and marketing: A customer relationship management approach.* Wiley. UK

Kaiser, H.F. (1960). The application of electronic computers to factor analysis. *Educational and Psychological Measurement,* 20, pp. 141-51.

Kim, J. and Mueller, C.W. (1978). Factor Analysis. Statistical methods and practical issues. SAGE. USA.

Lee, D. (2006). Marketing veterinary services. *Vet. Clinics of N. America: Small Animal Practice,* 36 (2), pp.281-295.

Leppiman, A. and Same, S. (2011). Experience marketing: conceptual insights and difference from experiential marketing. *Regional Business and Socio-Economic Development,* (5), pp. 240-258.

Lisch, R. (2014). *Measuring service performance: Practical research for better quality.* Gower Publishing Ltd. UK.

Lowe, P. (2009). *Unlocking potential: A report on veterinary expertise in food animal production (2009).* DEFRA.UK.

Lusch, R. F. and Vargo, S. L. (2011). Service dominant logic: A necessary step. *European Journal of Marketing,* 45 (7/8), pp. 1298-1309.

Trachtenburg, F.; Dugan, E. and Hall, M.A. (2005). How patients' trust relates to their involvement in medical care. *Journal of Family Practice.* (54), pp.344-353.

Vargo, S. L.and Lusch, R. F.(2004). Evolving to a new dominant logic for marketing. *Journal of Marketing,* 69.pp 1-17.

Vargo, S. L. and Lusch, R. F. (2008). Why "service"? *Journal of the Academy of Marketing Science,* 36, pp. 25–38.

Vogus, T.J. and McCelland, L.E. (2016). When the customer is the patient: Lessons from healthcare research on patient satisfaction and service quality ratings. *Human Resource Management Review.* 26 (March), 37-49.

Williams, S. and Jordan, H. (2015). Veterinary futures; the drivers of changes. VETFUTURES, UK.

Zeithaml, V. A.; Bitner, M. J. and Gremler, D. D. 2009. *Services marketing.* 5th Ed. New York: McGraw Hill.