

PRACTICAL APPLICATION OF BALANCED SCORECARD - A LITERATURE REVIEW

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ABSTRACT

The balanced scorecard (BSC), first created by Kaplan and Norton in 1992, has been developed over the last 20 years, gaining attention all over the world. The purpose of this paper is to review the balanced scorecard (BSC) in regaining the practice relevance in different industries. This paper primarily focuses on the theoretical dissertation. It is almost entirely literature-based. Selection and discussion of theoretical material and descriptive material, in context, and detailed comparison of case studies regarding their applicability is used in this paper. Besides, the comparative content analysis of the Balanced Scorecards of different organisations in 4 industries is discussed. Four organisations from different industries have been brought into comparison regarding the results of implementing BSC as performance measures. The findings prove that BSC practicability in different industries is favourable. It provides a systemic view of the strategy to most of the organisations. It is planned that this simple comparison between the results of implementing BSC concept will prove useful to today's business performances. This paper provides a basis for the substantial further work on the development of the general framework of the Balanced Scorecard in the modern world. The framework presented in this paper can be used as the basis for the development of a general framework of the Balanced Scorecard of different industries in the modern business world. This paper is the first to provide a taxonomy for the different versions of the BSC, through a process of identifying and analysing the practicability of BSC in different industries. This allows a more nuanced analysis of the BSC as a tool for managing performance and its development in the different levels of the management system in different industries.

Key words: Balanced scorecard, financial measurement, performance measurement.



INTRODUCTION

Over the last 20 years, performance management and measurement have been treated as the fundamental building block that permeates contemporary businesses for key stakeholders to assess the achievements of the businesses (Mari & Micheli, 2014). Judging by the number of agendas discussed at major business conferences and number of researches done on performance management (PM) (Neely, 1999), it has become a prevalent topic, reaching the stage of being identified as a vital component in operation management (Pilkington & Liston, 1998).

Performance management is defined as a continuous process of recognising, measuring and developing strategies that align with company's mission and vision (Sawant, 2016). Apparently, by identifying key measure through performance management system, in and of itself, it helps in improving the likelihood of goals being accomplished. According to Pourmoradi et al. (2016), there is three major importance of performance management. Through advanced performance management system, the company can implement strategies to improve the overall performance against key metrics.

However, recent research on the effects of performance management and corporate performances has produced inconsistent and opposite results (Neely, 2005), implying that the impact of performance management is still in constant flux (Pavlov & Bourne, 2011). While Mughal et al. (2014) listed both financial and non-financial benefits of implementing performance management in their recent research, Waal and Kourtiti (2013) discovered the disadvantages of performance management such as information overload, bureaucratic and expensive. Therefore, the objective of this paper is to provide illustrations and a better understanding of the performance management system, particularly the Balance Score Card (BSC), in 4 different industries through reviewing the literature.

Besides, metrics drive organisational actions by identifying the area that is needed to be changed. Kaplan and Norton (1992) emphasised that metrics should always be aligned with a strategy to attain success. Strategic decision processes are shaped by various contextual variables. Researchers on strategic decision making have claimed that the most important variable is performance measurement (Fredrickson, 1985; Elbanna and Child, 2007). Measures help in evaluating alternatives and making a decision. Based on the performance criteria, researchers can arrive different conclusions.

Also, performance management helps the company to manage its performance in line with corporate strategies and goals. Effective performance management acts as a proactive closed loop control system, deploying company's strategies to all business processes and receiving feedback through performance management system (Bititci et al., 1997).

LITERATURE REVIEW

Performance Management Frameworks - Shift from Shareholder Value to Stakeholder

Value

Milton Friedman, the proposer of Shareholder Theory, claimed that company is treated as an asset owned by the shareholders only. Since then, the focus point of measuring the businesses always has on the financial performance such as shareholder return, be this success by profit or failure by bankruptcy (Porter, 2008). Traditional performance management system has relied heavily upon financial measures with the purpose of increasing shareholders value. However, according to the Pourmoradi et al. (2016), traditional financial oriented measurement for performance management does not reflect operational efficiency, ignore intangible assets and is short-term biased. Due to changing the landscape of the business world, these deficiencies prompted researchers and practitioners to develop a new framework for the companies.

Edward Freeman (1984) later proposed Stakeholder Theory, argued that a company do have a responsibility to the whole group of stakeholders that includes shareholders, which is a far cry from Friedman's theory. Although some scholars argue that there is a risk of reducing the influence of one measure if managers have to focus on too many performance measures (Chatterji & Levine, 2006; Jensen, 2001). Others claimed that many performance measures would achieve joint value maximization, across both tangible and intangible factors (Harrison & Wicks, 2013). Thus, more value is created. Starting from the early 1990s, the revolution of performance management has begun.

At the heart of revolution lies a profound verdict: to change the foundation of performance measurement from financial-oriented to broader, more diverse and specialized set of measures (Thekdi & Aven, 2016; Pourmoradi et al., 2016). Table 1 shows the various performance management systems that have been proposed according to the literature survey.

Stakeholder Theory and The Balanced Score Card (BSC)

Among all the performance frameworks as mentioned in table 1, the most frequently cited and discussed framework was Balance Score Card (BSC) framework, with over 168 citations (Neely, 2005). The BSC performance measurement system, which was built on the stakeholder theory, was first introduced by Kaplan and Norton (1992). Gonzalez-Sanchez et al. (2017) claimed that as a result of the technology revolution, the traditional measurement system is only suitable for the industrial-age environment; consequently, qualitative and descriptive data which are covered under BSC will provide a clearer holistic view of organisational performance to the managers (Malgwi & Dahiru, 2014). Since then, BSC has evolved from simple framework to the main component of strategic planning and management system.

| Name of the model | Period of introduction |
|------------------------------|------------------------|
| ROI, ROE, ROCE and derivates | Before 1980s |

| | |
|---|-----------|
| <p>The Gaps Model (Parasuraman, Zeithaml & Berry, 1985) SERVQUAL (Parasuraman et al., 1988). Activity based costing (ABC) – activity based management (ABM, 1988) The strategic measurement analysis and reporting technique (SMART, 1988) Supportive performance measures (SPA, 1989) Customer value analysis (CVA, 1990) The performance measurement questionnaire (PMQ, 1990) Productivity Measurement and Enhancement System (ProMES) (Pritchard, 1990)</p> | 1980-1990 |
| <p>The Performance Pyramid (PPS) (Lynch and Cross, 1991) The results and determinants framework (RDF, 1991) The balanced scorecard (BSC, 1992) The European Foundation for Quality Management (EFQM) (1992) The economic value added model (EVA, 1993) The service-profit chain (SPC, 1994) The return on quality approach (ROQ, 1995)</p> | 1991-1995 |
| <p>The Cambridge performance measurement framework (CPMF, 1996) The consistent performance measurement system (CPMS, 1996) The integrated performance measurement system (IPMS, 1997) The comparative business scorecard (CBS) The integrated performance measurement framework (IPMF, 1998) The business excellence model (BEM, 1999) A dynamic performance measurement system (DPMS, 2000)</p> | 1996-2000 |
| <p>The action-profit linkage model (APL, 2001) The manufacturing system design decomposition (MSDD, 2001) The performance prism (PPR, 2001) The performance planning value chain (PPVC, 2004) The economic capability value of the intangible and tangible assets model (CEVITA, 2004)</p> | 2001-2004 |
| <p>The performance, development and growth benchmarking system (PDGBS, 2006) The unused capacity decomposition framework (UCDF, 2007)</p> | 2006-2007 |

Table 1: List of major PMS models adopted from (Taticchi et al., 2010).
Source: Kurien and Qureshi. (2011).

Use of BSC

According to research done by Taticchi et al. (2010) BSC is adopted by 30-80% of the firms around the world. Over the past 25 years, BSC has become under the spotlight of the whole world, particularly receiving much attention in the management and business community (Hoque, 2012, 2014). Currently, 64% of Fortune 500 companies are adopting BSC as a strategic management tool (Gumbus, 2005). Scholarly evidence showed that BSC is widely used in Europe and Asia is benchmarking (60-70%).



Figure 1: Use of BSC as a management tool
Sources: Kureshi, N. (2014).

Major Perspectives of BSC

Most recently, Razek (2012) has proposed a new model for BSC framework which comprises of 6 perspectives, known as financial, customer, internal process, learning and growth, risk management and social perspectives. However, in this paper, we will only discuss the first four highly relevant perspectives which summarise the leading and lagging performance indicators.

Financial perspectives seek to answer the above question, evaluating the contribution of organisational strategy to the improvement of financial results. According to Niven (2002) and Chintengo et al. (2017), both of the authors claimed that this perspective is the most important perspective as it finances the other three perspectives. However, the author alleged that financial perspective should not be overly focused as it has backwards looking nature, encourages short-termism and unable to reflect current value creating activities (Malgwi & Dahiru, 2014; Carvan, 2009). Under this perspective, two main strategies are emphasised, which are revenue growth and productivity (Kaplan & Norton, 2000). Examples of measures incorporated are Net Operating Income, Return on Capital Employed (ROCE), Revenue Growth, Return on Investment (ROI), Cash Flow, etc.

Customer perspective, based on Kairul et al. (2013), is a perspective that measures the capability of the company to cater customers with quality services and products including the efficiency of delivery and customer satisfaction. Besides, as mentioned by Chintengo et al. (2017) and Lee (2006), both of the authors believe that customer orientation refers to the degree of an organisation to utilise the information generated from customers in developing strategy that satisfies customers' needs and wants. This perspective generally focus on four categories, i.e. quality, time, service and performance

that helps managers to answer the question 'How do customers see organisations?' Some measure indicators of customer perspective are the rate of on-time deliveries, the percentage of market share, rejection, and customer retention (Putri et al., 2017).

The internal business process is the critical process to achieve the two afore mentioned perspectives as it helps in identifying the key business processes at which they must excel (Kairul et al., 2013; Gekonge, 2005). Further elaborated by Al-Najjar & Kalaf (2012), the internal process ensures the performance expectations will be accomplished by developing strong internal control within the organisation. Also, Kaplan & Norton (1992) identified few process value-chains under this perspective, notably innovation, operation and post sales service process. The central theme of the internal process is to achieve financial goals and customer satisfaction. Existing literature also indicates that SWOT analysis should be incorporated with internal business perspective to attain success (Kshatriya et al., 2017). Possible measures of this perspective are through a number of new products, reduced production lead time, units of production, average customer waiting time and more.

As the most basic element of the causal relationship, learning and growth perspectives focus on how employees can improve themselves and create more value to the organisational (Pourmoradi et al., 2016). Without a doubt, learning and growth perspectives such as the effectiveness of processes (quality information system), the ability of employees (experienced and skilful), and degree of firm's alignment (culture, teamwork and congruence) play an important role in accomplishing the company's objectives (Gonzalez-Sanchez et al., 2017). In fact, this perspective is highly related to the sustainability issue of the organisation which can be measured regarding employee motivation, employee empowerment, employees' retention and turnover and information system capabilities (Al-Najjar & Kalaf 2012).

Quantification of the BSC

Under this section, general approaches to calculating the various scores in BSC will be discussed to add more analytical depth into the BSC. Bsc identifies the critical metrics and relate them to strategy formulation process. To normalise different components in BSC, weighting method is applied in each perspective for both literature and industry research (Lohman et. al., 2004; Niven, 2004). The generic form of normalised scores is devised as follow:

$$\sum_{i=1}^n W_i S_i$$

Where:

S = Total Score of the Balanced Scorecard

n = Number of performance measures in the balanced scorecard.

= Relative weight of performance measure i

= Score of performance measure i.

i = the identifier of a performance measure

To calculate the , actual value is divided by target value. Having said that, the feasible ranges for BSC elements have been established by other researches. Therefore, the score of each element is according to the actual value of the performance measure relative to the established feasible ranges. Kaplan and Norton (2001) has suggested that financial perspective should not be more than 22% weight. However, this equation has a weakness as it depend highly on how managers creating the weightage for each elements. Therefore, analytical hierarchy process (AHP) has been proposed to identify relative weightage among performance measures. AHP provides a better structure for weighing the BSC measures. By using the additive multi-attribute utility theory, the equation is as follow:

$$U(S) = \sum_{i=1}^n W_i U(S(i))$$

Where;

U(S): Utility of total Score of the Balanced Scorecard

n: Number of performance measures in the balanced scorecard

W_i : Relative weight of performance measure i

U(S(i)): Utility of score of performance measure i

Benefits of BSC

Kaplan and Norton (1992) has summarised the three major advantages of BSC. Firstly, it provides a comprehensive picture of company's performance with a quick glance since the multiple measures are related to core competencies and strategy of the company in a single report. Besides, local optimisation aims to protect the company is attainable. Improvement in internal processes is promoted by balancing the objective; for instance, set up time is improved by reducing set up process instead of enlarging the batch size. BSC can determine whether an improvement is based on actual process or reduce of another process. Lastly, it keeps only the measures that are related to strategy; thus, avoiding information overload within the company.

METHODOLOGY

This paper is a theoretical-conceptual-based study, particularly using the explicit method through searching and reviewing the case-based research papers and quality journals (Rousseau et al., 2008). Identifying of the key words of this research has served as the starting point. Two main key words "Performance Management" and "BSC" are identified. Secondly, refining of empirical data on the relevant topic has been conducted by searching the most prestigious international academic database, notably Emerald Insights, Google Scholars, Elsevier, and Science Direct.

To obtain the most relevant journals to this paper, the key words "Performance Management" and "BSC" is used to search the abstracts and full journals. In Google

Scholars, there are about 683,000 journals related to performance management and 16,600 journals related to BSC. To narrow down the range, both key words are then combined, and timeframe has been set for the year 2014-2017. The similar steps have been repeated in other databases such as Emerald Insights, Elsevier, and Science Direct. This is to ensure that the literature review in this paper is based on the most current, comprehensive and business-related quality journals.

| Database | Journal related to performance management | Journal related to BSC | Combined |
|--------------------------------|---|------------------------|----------|
| Google Scholars | 683,000 | 16,600 | 16,600 |
| Science Direct | 201,625 | 2895 | 1080 |
| Emerald Insights | 31,616 | 459 | 811 |
| Elsevier | 120 | 7 | 90 |
| Time Frame: The year 2014-2017 | | | |

Table 2: Statistics of BSC research

Two groups of researchers, known as 'conceptual research' and 'empirical research' are classified. Journals which are theoretical-based, reviewing the literature and concept works are classified into conceptual research while journals with case studies, surveys, experimental-based are determined as empirical research. After reviewing the journals, two papers of conceptual research and four papers of empirical research with business cases in different industries are kept as main reference journals while about 30 other journals are used as supporting journals.

After obtaining the main and supporting journals, content analysis of the full journals is carried out to re-organize the structure of this paper. The data from a total of 37 conceptual papers and ten empirical papers are evaluated and further classified into either qualitative method or quantitative method or both. On the other hand, 30 out of 47 papers are literature-based and adopted a deductive approach in their research.

| Research Method | Number of papers (n=47) | Percentage |
|---------------------|-------------------------|------------|
| Nature of Article | | |
| 1. Conceptual | 37 | 79% |
| 2. Empirical | 10 | 21% |
| Research Design | | |
| Quantitative method | | |
| 1. Questionnaires | 17 | 36% |

| | | |
|---------------------------------|----|-----|
| 2. Opinion survey | 10 | 21% |
| 3. Statistical Analysis (scale) | 20 | 43% |
| Qualitative method | | |
| 1. Interview/ observation | 10 | 21% |
| 2. Survey | 27 | 57% |
| 3. Secondary data (Literature) | 30 | 64% |

Table 3: Characteristics of Papers on BSC

FINDINGS

BSC has been widely used in different industries such as higher education industry (Chimtengo et al., 2017), plantation industry (Putri et al., 2017), machine industry (Kshatriya et al., 2017), healthcare industry (Gonzalez-Sanchez et al., 2017), construction industry (Toong & Poh, 2012), bank industry (Al-Najjar & Kalaf, 2012) and more. In this paper, the most recent four case-based journals will be critically evaluated and analysed to study the real application of BSC in different industries.

Recently, tertiary institutions of education are struggling to survive in this modern world. These institutions are, for example, expected to be outstanding in both teaching and research areas. Besides, in the light of increasing global costs, operation efficiency has become a challenge for institutions to attract new students (Purlsglove and Simpson, 2007). In this paper, research was done by Chimtengo et al. (2017) on how BSC has been implemented in Malawi Polytechnic has brought into the evaluation. With BSC, the university can identify the main weaknesses, i.e. internal process and carried out specified measures such as increasing the efficiency of administrative to stay competitive. BSC has successfully overcome the loopholes of output performance measures which has rated the university's performance inaccurately.

Rubber plantation is regarded as the largest GDP contributors to Indonesia. It is, however, facing certain issues such as inefficiency of the marketing system, shortage of initial capital to buy quality first-grade plants and a sharp drop of rubber price (Siregar et al. 2012). To provide a clear illustration on how BSC helps to tackle the challenges, a case analysis on UKM rubber plantation (Putri et al., 2017) is critically evaluated. Before implementing the BSC, the company was performing poorly and suffering loss. BSC has helped the company to identify the main area needed for improvement, i.e. customer perspective. Since then, UKM can know the steps to develop new strategies such as promoting UKM to farmers who are not a member of UKM in future.

As a result of globalisation and technological advancement, machine tool industry has faced issues with the changing business model to sustain. Not only that, the growth of the company is largely depended on the real time improvement changes in both top- and bottom-lines (Letza & Nicholas, 2014). Hence, BSC frameworks have been proposed as a

strategic planning system to deal with the problems (Kshatriya et al., 2017). By comparing the departmental BSC index with organisational BSC index, the company can identify the needs of reinforcements for forthcoming months at the individual level. It acts a more holistic framework that provides two-way control as compared to other performance measures.

Government hospitals have operated for few decades in a stable, protected environment without intensive competition. However, in a surge of improving people's experience of care and confidence level of public towards government hospital, a more autonomy management system is required in current trend (Gonzalez-Sanchez et al., 2017). From reviewing the literature of three countries (Portuguese, Spain and Italy), BSC seems like an essential management tool to the healthcare organisation. For instance, BSC helps to quantify intangible assets of healthcare services that make a huge difference in a competitive market (Santos and Fidalgo, 2004).

DICUSSIONS

After evaluating the previous case studies done by different researchers in different industries by using a cross-industrial comparative approach, the results have shown favourable consensus results of implementing BSC in various industries.

Different from the other three organisations, Malawi Polytechnic has conducted output performance measurement system within the organisation before implementing BSC. Although the performance of an organization is rated as good, it seems to be inaccurate as it focuses only on the grades of students and number of graduate per year. A few loopholes of the output measuring system are short-termism, does not reflect shareholders value and value creating activities. The university then carried out BSC to evaluate the performance from four perspectives. Surprisingly, the performance is rated as poor. BSC acts as a remedy for the old system by accurately identifying the main weakness of the university, i.e. the internal process.

| | Objectives | Perspective Measurement Indicators | Results | Conclusion |
|--------------------|--|--|--|------------|
| Malawi Polytechnic | To overcome the weakness of output-based (grades, no. of graduates) performance measurement system | <u>Financial Perspectives</u> - Fund raising capabilities (Dorweiler and Yakhou, 2005) - Reduce human resource (Chen et al., 2006). <u>Customer Perspectives</u> - How fast students get employed - Number of new students <u>Internal Process Perspectives</u> - Facilities renewal rate | - The university has been rated as performing well under output performance measures, but vice versa under BSC measures. - Through implementing BSC, the university has successfully identified the specific areas that need improvement. - Michigan Technological University (US), University of Massachusetts (US), Chung-Yan University (Taiwan), Warwick Business School (UK), and International Medical School (Malaysia) have concluded that BSC significantly improves their management and operations. | Favourable |
| Rubber UKM | To strengthen the strategic formulation process through accurate identification of problems. | <u>Financial Perspectives</u> - Current Ratio - Total Debt to Total Asset <u>Customer Perspectives</u> - Member customer growth - Customer satisfaction level <u>Internal Process Perspectives</u> - Retention level | - With BSC performance measuring system, UKM can identify the main contributor of failure, which is the customer perspectives. - UKM successfully identified its strongest perspectives, i.e. learning and growth, hence, additional aspect of employee is not needed - UKM can know the steps to develop new strategies such as promoting UKM to farmers who are not a member of UKM in future. | Favourable |

| | | | | |
|----------------|---|---|---|------------|
| Machine Tool X | To achieve continuous improvement and become world class manufacturing organisation | <u>Financial Perspectives</u> - Earning before interest - Machine delivery index (MDI) <u>Customer Perspectives</u> - Mean time between failure - Site plug and play (SPP) rating <u>Internal Process Perspectives</u> - On time delivery - On the time trial | - BSC provides a buttressed measure with accordance to changing the business landscape. - By comparing the departmental BSC index with organisational BSC index, the company can identify the needs of reinforcements for forthcoming months at the individual level. - BSC encourages the team leaders to focus on their respective departments and carry out actions that support the vision of the company instead of single department. - It acts a more holistic framework that provides two-way control as compared to other performance measures. | Favourable |
| Health care | To analyse the development and research of BSC implementation in healthcare sector | Financial Perspectives - operating profit margin - commercial mix - cost per patient - Customer Perspectives - time to treating provider - patient engagement - patient access index - Internal Process Perspectives - antibiotic delivery | - BSC has been adopted by various healthcare organizations, including hospitals, psychiatric centres, and national healthcare institutions. - BSC helps in quantifying the qualitative intangible assets through learning and growth perspective. - From reviewing the literature of three countries (Portuguese, Spain and Italy), BSC seems like an essential management tool to the healthcare organisation. - Scholar journals, articles, literature have widely included BSC and is expected to increase drastically in future. | Favourable |

Table 4: Summarization and Comparison of Four Organizations in Different Industries

On the other hand, UKM plantation and Machine Tool X have similar objectives in implementing BSC which is to enhance strategic formulation and achieve continuous improvement. Both of the organisations use financial ratios to evaluate their financial perspective which is slightly different from Malawi Polytechnic and health care cases. Through comparing the departmental BSC index, UKM plantation and Machine Tool X have

successfully identified the specific areas that are needed to be improved, which are customer perspective and financial perspective respectively. Since the managers of different departments need to work hand-in-hand to have a better BSC score, it helps to boost the integration between departments.

After implementing BSC, both organisations claimed that their business models and performance have improved. BSC method provides two-way control mechanism by completing the loop of control from top to bottom and back to top repetitively. In contrast, the journal selected for the healthcare industry is literature-based by reviewing the healthcare sector in three different countries, namely Spain, Portugal and Italy. Healthcare sector, mainly on government hospitals, is considered to be a non-profit organisation with not much competition. Unlike UKM and Machine Tool, the intent of health care organisations in implementing BSC is not to seek for methods that will boost the profit. Instead, BSC is used to evaluate the learning and growth perspectives as it needs special attention in healthcare organisation because of the intensive utilisation of knowledge.

Besides, from the analysis of four different organisations, it is showed that measure indicators for each organisations under four perspectives are distinct and specialised. Although a few indicators under financial perspectives (financial ratios) appear to be same across four organisations, the others are devised in a way that best suits the organisations' measures. It highlights the high flexibility and wide practicability of BSC to be implemented in various organisations.

All in all, BSC is regarded as a remedy to overcome the deficiencies in using financial or output measures, helps in identifying the cause of company's failure, able to adapt the changing business environment and an essential management tool for strategic planning from the above analysis.

CONCLUSION

In summary, it is a continuous challenge faced by executives, managers, practitioners and researchers in measuring the performance of organisations. Evidence has proven that performance management system, especially BSC, is conducted approximately in 70% of firms in Western countries. A shift of measuring appraisals from solely financial-based to a more holistic framework should always be the main concern of all organisations to adapt themselves in the contemporary business world to survive and achieve sustainability. Although some researchers claimed that BSC lacks cohesive body of knowledge and focuses on top down approach, BSC has undoubtedly become the best-known and useful performance measurement system nowadays due to its wide and holistic applicability in almost all industries as analysed above. As business landscape evolves, it is expected that more and more perspectives under BSC will emerge and grow. Hence, BSC should not be considered as a 'one-size fits all approach' but a 'customised approach' to fit different organisations' characteristics to get the best outcome. Therefore, based on this literature review, it can be concluded by taking the stance that BSC is a powerful and useful tool to all managers, researchers and practitioners in measuring the organisations' performances. However, there is a limitation in this paper. Due to the last two perspectives of BSC (risk

management & social perspectives) are too recent and only a few types of research have done on these two perspectives, so they are not included in the analysis of this paper. As for further research, more researches should be conducted in discovering other important perspectives. With more insight provided, the practicability of BSC is expected to be in widespread use that benefits all.

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