

# Curriculum Requirements for Entry-Level Management Accounting in Australian Industry and Commerce

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## Abstract

*Universities are not only under pressure from constrained funding but also under pressure to meet employers' needs. In this environment, specialist university accounting programs which meet the needs of different employers are increasingly common.*

*This paper reports on a study using the SERVQUAL model of perceptions of senior accountants in Australian industry and commerce (n=365) of the educational requirements for entry-level management accounting positions and whether there is any gap between these requirements and the actual preparation of graduates. The study found that there is a difference in the perceived requirements of management and public accounting positions and that graduates are significantly under-prepared in a number of important management accounting topics.*

## Keywords

**Management Accounting Curriculum  
Australian University Accounting  
SERVQUAL**

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## Introduction

University accounting programs and the accounting curriculum have been under pressure to remain relevant for a considerable time (e.g. AECC 1990, ASCPA/ICAA, 1996, Albrecht & Sack 2000). The pressure continues with the publication by IFAC of a series of International Education Standards for Professional Accountants (IFAC, 2003), and concerns expressed about the supply of accounting graduates (including those expressed by recruitment firms, e.g. Robert Half International 2005). In Australia, as long ago as 1990, the review of accounting education by the Mathews Committee (1990) concluded that funding for accounting departments was inadequate (p. xix) and recommended that a fourth year be added to accounting programs in order to cover the necessary curriculum (p. xxiv). Subsequently, Australian research by Perera and Harrison (1995) found that the restrictive length of degree programs is perceived as an impediment to introducing needed topics in the management accounting (MA) curriculum. In the interim, despite this work, financial support for lengthening accounting courses has generally not been forthcoming. As a consequence, curriculum content must be optimised to match the available resources.

As the accounting and finance professions have fragmented into specialised areas, students are now able to follow specialised university programs in areas such as finance, information technology or MA, or double degrees which combine specialisations, all of which may be seen as a preparation for an 'accounting' career.

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Indeed, the accreditation guidelines of the professional bodies (ASCPA/ICAA 1996, p. 3) encourage diversity and allow for such specialisations in accredited university courses.

University accounting programs offer different specialisations because the destinations of graduates from different courses are likely to vary. Graduates of some courses may predominantly pursue careers in industry and commerce, whilst employment in public practice firms is more likely for graduates of other courses.

However, if specialisations are to improve the employability of graduates, they should fit the needs of those employers at which programs are targeted. A model useful for investigating the curriculum requirements of employers and, in particular, whether these needs are being met by universities, is a form of the SERVQUAL model, developed by Parasuraman et al (1985, 1988, 1991, 1994). This model is a perceptions-minus-expectations construct which compares expectations of customers with their perceptions of the level of service. The model has been used extensively in the marketing service research area (see Teas, 1993 and Oliver, 1993). Although there are some criticisms on the use of the model (see Babakus, and Boller, 1992; Carman, 1990 and Cronin and Taylor, 1992), it has had overwhelming support in general (see Bolton and Drew, 1991a and 1991b; Boulding, et.al. 1993 and Zeithaml, et.al., 1990). In the area of service quality, customer perceptions become important, and a number of studies have sought to obtain and analyse these perceptions (see Donabedian, 1980; Hawes, and Glisan, 1983; Kettinger and Lee, 1997; Donabedian, 1982; Hall, 1997; Devlin and Dong, 1994; Ratnatunga, and Waldmann, 2000; Waldmann and Raghavan, 2002 and Waldmann and Ratnatunga, 2003).

Ratnatunga and Waldmann (2000) in particular, use employers as 'customers' in their study of service quality in accounting education.

Based on the above literature therefore, it could be argued that considering employers

as 'customers' of university teaching departments is not only valid, but also that the SERVQUAL model forms an appropriate basis for understanding employers' perceptions of the coverage of topics in the university curriculum, and whether there are any gaps in the preparation of graduates for, say, entry-level positions.

As a basis for optimising MA curriculum around the requirements of MA employers in Australian industry and commerce, this paper outlines a study using the SERVQUAL methodology in the area of the MA curriculum. This investigation tests whether the accounting knowledge and skills areas (AKSAs) required by employers of MA graduates receive appropriate attention in the accounting curriculum. The study also extends previous research in the area, in particular to address some methodological concerns.

## Background and Research Questions

As a consequence of concerns about insufficient MA content in accounting courses, the US Institute of Management Accountants (IMA) funded an extensive survey by Siegel and Sorensen (1994) of the required AKSAs for entry-level management accountants working in areas other than public practice firms. That study found there was a perceived difference between the AKSAs necessary for entry-level management accountants and accountants in public practice, and that university programs did not emphasise sufficiently the AKSAs required by management accountants. A subsequent IMA position statement (1994) stated that, because of the proportion of graduates entering the corporate sector, MA needs to receive more attention in accounting courses.

The study for the IMA was not the only research study to consider the content of MA courses. Other research has included a variety of surveys on curriculum topics relevant to MA practice (e.g. Lander and Reinstein 1987, Lin, et al 2004), proposed frameworks for teaching MA (e.g. Bitner

1991, Brewer, 2000) and articles which consider pedagogy or technical issues (see Rebele, et al 1998).

Siegel and Sorensen (1994) surveyed the perceptions of employers of entry-level management accountants using the SERVQUAL model (Parasuraman et al 1985, 1988, 1991, 1994). Siegel and Sorensen surveyed employers' perceptions of the coverage of AKSAs in the university MA curriculum, and whether there were any gaps in the preparation of graduates for entry-level positions. They concluded that there was a gap between the preparation of graduates and the expectations of employers in a number of MA AKSAs, while graduates were over-prepared in a number of public accounting areas. The emphasis in university accounting programs was seen to lack balance. Siegel and Sorensen suggested that some universities could consider focussing on preparing students for accounting careers other than those in public practice.

Subsequently, Hartman and Ruhl (1996) expressed a number of concerns about the methodology adopted in the Siegel and Sorensen study. They criticised the Siegel and Sorensen study for limiting AKSAs to the 15 topics covered in professional examinations without determining if these were sufficient or testing for extraneous and redundant items (1996, pp. 8-9). This is important since there may be topics of emerging importance which are not currently part of the curriculum. Hartman and Ruhl also criticised the ambiguity in some of the definitions used by Siegel and Sorensen (1996, pp. 10-11), and the use of scales with no reference point to allow respondents to indicate their perceptions (which meant perceptions had to be interpreted subjectively) (1996, pp. 11-13).

Siegel and Sorensen surveyed accountants employed in "Corporate America" - private sector business firms other than public accounting firms. The equivalent group in Australia is the "industry and commerce" area of employment, which represents a sizeable proportion of the accounting profession.

In line with the concerns of the US IMA, the following research questions were asked about university accounting courses in Australia:

1. How do employers of entry-level accountants in industry and commerce rate the performance of university accounting courses in:

- preparing students for working in a business organisation,
- preparing students for management accounting careers,
- teaching students quantitative skills, financial accounting, management accounting, and communication and interpersonal skills?

2. In the opinion of employers of entry-level accountants in industry and commerce, is there an appropriate balance between MA and external reporting in current university accounting courses?

3. Of the AKSAs covered as topics in university accounting courses, what is the relative importance of different AKSAs for entry-level management accounting positions working in industry and commerce?

4. Is the coverage of different AKSAs appropriate? Importantly, is there any gap between the expectations of employers of entry-level management accountants and the actual preparation of graduates? Are graduates over-prepared or under-prepared in any areas?

Note that these research questions focus on requirements for entry-level MA positions in industry and commerce. Public accounting work may require a different balance of topics and courses may have a different degree of "success" in meeting the expectations of different employers.

### Survey Participants and Procedure

The Australian Society of CPAs provided names and addresses for a random stratified sample of its members drawn from those registered as employed by firms in industry or commerce from all states. In order to

gather the perceptions of those likely to employ entry-level management accountants, the sample was chosen from ASCPA members qualified CPA or FCPA, with a responsibility level of manager or above. To increase the possibility that the firm would have entry-level accounting employees, firm size was restricted to 51 or more employees.

Questionnaires based on the SERVQUAL model were developed and tested with a pilot survey<sup>1</sup>. Revised questionnaires were then mailed to a sample of 1000 ASCPA members (N = 4500 members) with a follow-up mailing a month later. Of the 388 responses received in total, 365 were deemed useable.

Characteristics of the industry and size of firms employing respondents are provided in Table One. The criteria of 51 or more employees meant that manufacturing firms represented a high proportion of responses.

**Table One: Industry and Sales Profile**

<b>Industry</b>	
Mining, Construction, Agriculture	12.1%
Manufacturing	41.1%
Transport & Community Services	6.3%
Retail/Wholesale Services	9.9%
Other	26.8%
	3.3%
<b>Sales</b>	
Less than \$20 m	15.1%
\$20 – 50 m	14.0%
\$50 – 100 m	15.1%
\$100 m plus	52.9%
No response	3.0%

Table Two shows the percentage of respondents who had "a lot" or "some" involvement in hiring decisions and contact with or supervision of graduates. This indicates that most respondents should be familiar with the work of entry-level management accountants and the survey results should therefore be useful.

**Table Two: Involvement with New Accountants**

Percentage of respondents who had "a lot" or "some":	
Involvement in hire decisions	70.6%
Daily professional contact with graduates	57.1%
Supervise or review work of graduates	45.7%

### Survey Instrument

In addressing the research questions, the Siegel and Sorensen survey instrument was heavily adapted in order to address the methodological concerns of Hartman and Ruhl (1996) and to suit Australian terminology.

*AKSAs terminology:* The list of expected AKSAs (referred to as "topics") was improved in the present study by (1) discussions of terms used on the list with colleagues and reference to their subject outlines, (2) incorporating terminology from literature discussing the MA curriculum (e.g. Bitner 1991, Rebele et al 1998, Brewer, 2000), and (3) tested with a pilot group of practising management accountants. In addition, respondents could add up to two "other" items of their choice to the list with an open-ended question asking why they felt these should be added, and to indicate which topics could be omitted from courses and why (questions which also provided valuable qualitative data). AKSAs were also modified to reduce redundancy and clarify topic areas (eg product costing vs. ABC vs. strategic cost management as used by Siegel and Sorensen). Arguably, these changes considerably improved construct validity.

The list of AKSAs used in the questionnaire is provided in Appendix A (they are ranked by importance as per the responses in Appendix A for subsequent comparison of the preparation gap in Appendix B). This list did not specifically include generic skills topics such as communication and interpersonal skills. Because the focus of the questionnaire was on curriculum content, respondents were asked to presume that generic skills such as communication



and interpersonal skills are integrated within various topics. This was based on the presumption that the development of generic skills depends on instructional processes and methods, not topics in the curriculum, as noted by the professional bodies in their accreditation requirements (ASCPA/ICAA 1996, pp. 5-6).

*Scaling and definitions:* Perceptions were determined using a 7-point Likert scale (e.g. 1 = "poor" through to 7 = "excellent") which allowed a subtlety of variance to be gauged<sup>2</sup> To avoid ambiguity, entry-level accountants were specifically defined for the present study as "people who join your company directly from university or with up to two years work experience". The study also specified that respondents should view their expectations as "the degree of preparation they would reasonably expect an entry-level management accountant to have" (not the degree of preparation they would "like" as used by Siegel and Sorensen).

**Summary of Findings**

Data was analysed using SPSS for Windows (6.1). Descriptive statistics and one-way ANOVAs were used to gauge differences among responses.

*Perceptions of performance (Research Question 1)*

Respondents were asked to indicate their perceptions of university teaching, using a 7-point scale (1 = poor, 7 = excellent). Mean scores are shown in Table Three.

It seems that universities seem to perform better at teaching financial accounting and quantitative skills than MA. If mean scores are expressed as a percentage and a grade awarded, universities only receive a "pass" for preparing students for MA careers (51%) and for teaching MA (56%), but receive a "fail" for preparing students for work in business (46%) and for teaching interpersonal skills and communication (45%). However, universities receive a "credit" for teaching financial accounting (66%) and quantitative skills (61%).

**Differences in requirements (Research Question 2)**

Table Four shows that there is a perceived difference in the knowledge and skill requirements of industry/commerce and public accounting. Table Five indicates that this difference is not catered for as there is a perceived imbalance in the courses attended by entry-level management accountants.

**Table Three: Performance of Universities**

Based on what you observe in the job preparedness of recent entry-level accountants in your company, how well do you think universities perform at each of the following? (Mean scores on 7 point scale, 1 = poor, 7 = excellent)	
Preparing for work in business	3.25
Preparing for management accounting careers	3.54
Teaching quantitative skills	4.29
Teaching financial accounting	4.64
Teaching management accounting	3.92
Teaching interpersonal skills, communication	3.17

Respondents classified by "Course Balance" were examined in relation to "skills required in industry and commerce vs. public accounting". One-way ANOVAs and Scheffe post-hoc tests revealed that a difference (F = 4.4058, df = 3, p = .0047) existed between respondents who indicated "not enough emphasis on MA" and "don't know".

Respondents who indicated not enough emphasis on MA were more likely to believe there was a major difference in the skills required in industry and commerce versus public accounting (mean = 2.04, where 1 = major difference, 4 = no difference).

In contrast, respondents who indicated "don't know" on the balance in courses were more likely to indicate little difference in the requirements (mean = 2.43).

**Table Four: Requirements - Industry and Commerce vs. Public Accounting**

"Do you think there is a difference in the skills and knowledge required by entry-level accountants in industry and commerce and public accounting firms?"		
	<i>Australian response</i>	<i>US survey response</i>
"Major" or "some" difference	61.3%	63.4%
"Little" or "no" difference	33.0%	34.7%
Don't know	5.7%	1.9%

**Table Five: Balance in Courses**

Based on what you observe in the job preparedness of recent entry-level accountants in your company, how would you describe the current balance of the university course they attended?		
	<i>Australian response</i>	<i>US survey response</i>
Not enough emphasis on mgt. accounting	40.7%	54.8%
Correct balance MA & ext reporting	20.8%	20.9%
Not enough external reporting	5.8%	3.7%
Don't know	32.7%	20.6%

The data presented in Table Six emphasises the concern that programs are lacking in coverage of specific areas and confirms the significance of the research questions. Undergraduate MA subjects (especially against financial accounting subjects) appear to be more important for entry-level industry and commerce positions.

**Table Six: More Likely to Hire**

Which graduate would you be more likely to hire for an entry-level management accounting position? A graduate who has studied:	
More general business subjects	32.1%
More management accounting subjects	46.5%
More computing subjects	9.3%
More financial accounting subjects	7.9%

#### ***Importance of AKSAs and the preparation gap (Research Questions 3 & 4)***

The importance of AKSAs is shown in columns A and B of Table Seven. Budgeting and performance evaluation ranks first in importance followed by standard costing and variance analysis, and internal control. Indeed, no respondents indicated these topics could be omitted from courses (which was also the case with long-term financing and capital structure, ranked 14th). Generally, AKSAs which cover compliance issues in accounting such as statutory reporting, income tax law,

consolidated financial statements and external auditing are seen as less important, together with areas such as organisational behaviour and long-term finance and capital structure (which may have been regarded as specialist or theoretical areas).

Six respondents indicated that external auditing and four respondents indicated that organisational behaviour could be omitted from courses. All other AKSAs would be omitted by one or two respondents in each case.

The "preparation gap" was calculated by (1) taking the difference in mean scores of perceptions of skills that graduates "actually bring to the job" and perceptions of the preparation respondents would reasonably expect an entry-level management accountant to have ("expectation"), and (2) expressing these differences as a percentage of the "expectation" score (all responses were based on a 7 point Likert scale). The preparation gap is shown in column C of Table Seven. A chart of the preparation gap is provided in Appendix B, ranked from over to under preparation. These results, when compared to the level of importance rankings in Appendix A, indicate a need for more emphasis on some MA AKSAs and in many respects reflect the results of Siegel and Sorensen (1994) with graduates being under-prepared in many MA AKSAs.

**Table Seven: Importance of Aksas and Expectations - Preparation Gap**

(Listed in order of perceived importance)	<i>A: Importance</i>	<i>B: Depth of knowledge</i>	<i>C: Preparation Gap (%)</i>
Budgeting & perform. evaluation	5.57	5.10	-23.66
Std costing & variance analysis	5.16	4.72	-20.70
Internal control	5.03	4.31	-19.3
Working capital management	4.99	4.49	-21.17
Product costing	4.90	4.19	-21.73
Advanced cost management	4.87	4.41	-19.46
Info syst design & implementation	4.82	4.28	-16.10
Capital budgeting	4.66	4.15	-15.62
Statutory financial reports	4.49	4.20	-3.07
Strategic management	4.30	3.85	-14.50
Income Tax Law	4.09	3.81	-6.94
Consolidated financial statements	4.00	3.79	0.56
Organisational behaviour	3.96	3.58	-5.23
L-t financing & capital structure	3.74	3.38	-7.64
External auditing	3.13	2.90	7.50

A & B = mean scores (A: 1 = not important, 7 = most important; B: 1 = very basic, 7 = deepest level). Preparation gap = difference in mean scores of "brings to job" and "expectations", expressed as percentage of expectation score.

Whilst respondents perceive an imbalance between management and financial accounting, they place a relatively high priority on statutory financial reporting and indicate that graduates are slightly under-prepared on this topic. Although respondents perceive an imbalance in courses (Table Five), employers in industry and commerce may not want a "niche" degree with only MA and no external reporting content. However, the compliance areas of consolidated financial statements (where students are perceived to be marginally over-prepared), and, especially, external auditing (with a significant degree of perceived over-preparation) could be given less emphasis. The current and emerging topic of internal control is perceived as needing more emphasis. While income tax law is ranked 11th in importance, students are perceived as more under-prepared in it than in statutory financial reporting, and the general area of strategic management is perceived as more important and students more under-prepared.

The basis of the concern for the preparation for entry-level positions appears to be undergraduate programs since a bachelor's degree is the entry requirement in the majority of cases (see Table Eight). The

survey of undergraduate AKSAs is therefore appropriate.

**Table Eight: Educational Requirements (Entry-Level)**

What educational background would your company prefer that a suitable applicant possess?	
Bachelors degree	71.2%
Double degree	22.0%
Masters degree/Grad Dip	3.0%

***Perceptions of other topics that should be included***

The list of topics was generally regarded as complete and relatively few respondents (12%) added "other" topics to the list. The most common topic added (17 responses) was computing skills, especially PC and/or spreadsheeting skills, which is probably indicative of the current nature and future direction of accounting work. These skills were not highlighted as a generic skill in the preamble to the question but are probably incorporated in a variety of topics in accounting courses. Others added practical skills such as human resources, time or project management and problem solving skills (9 responses). Logistics, inventory control, MRPII, time and motion, or

business processes topics were listed by 6 respondents. Capital markets, forex management, treasury and financial instruments were added by 5 respondents. Other topics included TQM, sales tax, political science, marketing and risk management.

## Discussion

The present study was aimed at evaluating the relevance of topics in the existing MA accounting curriculum to provide guidance for revising accounting curriculum and course design (including the balance between financial and management accounting topics). It should be noted that understanding the work of entry-level accountants was not an objective of the present study. The survey results must also be interpreted as perceptions of employers of the preparedness of graduates and only a proxy for whether graduates are actually under-prepared or over-prepared.

The Siegel and Sorensen study and the present study examine only one dimension of service quality. It is possible to specify other dimensions of service quality which represent other objectives for university courses that go beyond serving the needs of employers - eg developing analytical, critical thinking and evaluative skills of students as a service to the wider community. Defining all the dimensions of service quality is a complex task and since they involve perceived objectives of courses, given the different stakeholders involved, they would be open to considerable debate.

In the current political-economic climate, however, such objectives may be seen as luxuries. University courses are required to be viable and universities more self-sufficient in generating funds. This requires a focus on service quality as defined by the market but may extend beyond the expectations of those who employ accounting graduates to the expectations of students as clients of universities.

## Conclusions

The survey reported in this paper has investigated the perceptions of senior accountants in Australian industry and commerce. The study found that there is a difference in the perceived requirements of management and public accounting positions. Significantly, the study shows that employers of entry-level management accountants in Australian industry and commerce place importance on management accounting topics but that graduates are currently under-prepared in many of these areas.

The results confirm a need for change in Australian university accounting courses, especially in a context where diversity and flexibility are being encouraged. Those universities whose graduates move into industry and commerce rather than public accounting practices should be especially interested in the results, perhaps with a view to incorporating the results into course and curriculum design to allow programs to be targeted towards that segment.

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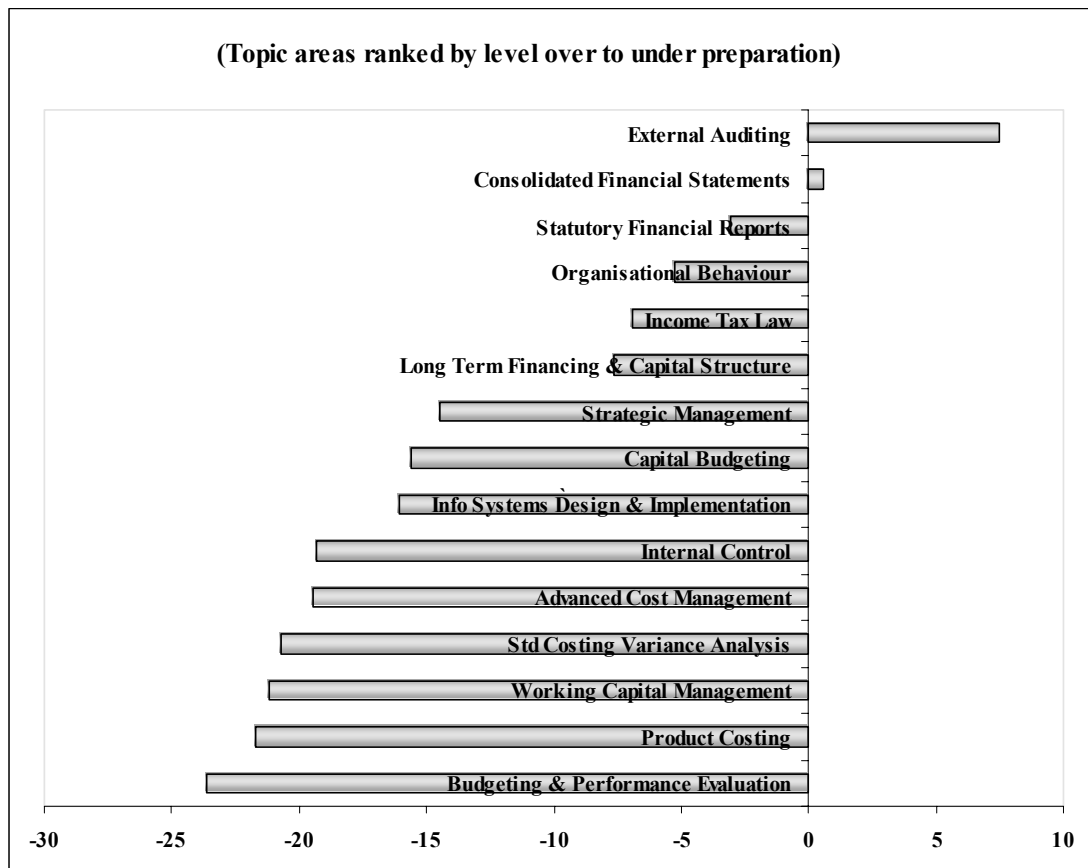
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**APPENDIX A:  
ACCOUNTING KNOWLEDGE AND SKILLS AREAS  
(Topic Areas Ranked by Importance)**

1	Budgeting & Performance Evaluation
2	Std Costing Variance Analysis
3	Internal Control
4	Working Capital Management
5	Product Costing
6	Advanced Cost Management
7	Info Systems Design & Implementation
8	Capital Budgeting
9	Statutory Financial Reports
10	Strategic Management
11	Income Tax Law
12	Consolidated Financial Statements
13	Organisational Behaviour
14	Long Term Financing & Capital Structure
15	External Auditing

**APPENDIX B: PREPARATION GAP**



## Endnotes

<sup>1</sup> This was introduced to overcome the concerns of Hartman and Ruhl (1996) about scaling using a 0-100 scale. However, because of the revised scaling, it is not possible to compare perceptions of the performance from the Siegel and Sorensen survey and the present study with any validity.

<sup>2</sup> Earlier versions of the questionnaire were reviewed by the author's colleagues and piloted with participants in the ACMAD Victoria KPIs discussion group.



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