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A Closer Look at German Cost Accounting Methods

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SUESSMAIR

A SURVEY OF THE COST MANAGEMENT SYSTEMS USED BY COMPANIES IN GERMANY, SWITZERLAND, AND AUSTRIA SHOWS THAT USE OF *GRENZPLANKOSTENRECHNUNG* (GPK) WORKS BEST WHEN COMBINED WITH A STRONG, HIGHLY INTEGRATED INFORMATION SYSTEM AND USED WITH OTHER COMPLEMENTARY COSTING PRACTICES.

Resource consumption accounting (RCA) is a blend of advanced German costing methods, specifically Grenzplankostenrechnung methods (translated as marginal planned cost accounting, but known as GPK in the United States), and activity-based costing (ABC). This system is being promoted in the United States as a way to enhance management decision making and control.¹ Understanding the characteristics of German costing systems—and particularly what factors lead to GPK adoption, usage, and success—will help U.S. firms understand whether and how to implement RCA.

In April 2005, Kip Krumwiede reported on 11 site visits to companies in German-speaking countries in a *Strategic Finance* article titled, “Rewards and Realities of German Cost Accounting.” In the article, he related what he learned about German cost accounting systems, specifically that the Germans typically place more emphasis on their cost management systems than American companies do. It is not unusual for German

companies to define and track hundreds or even thousands of cost centers. Also, the management accounting function (known in German as “Controlling”) is often completely separate from financial reporting and has more staff. The purpose of our ongoing research is to move the U.S. discussion of German cost accounting methods from its focus on theory to study of actual practice.

We now present the results of the next stage of that research, a cross-sectional survey of cost management system (CMS) use among companies in Germany, Switzerland, and Austria. The results provide a representative picture of the systems that German-speaking firms are using, particularly GPK. We will address the stages of GPK systems implemented in the surveyed companies, factors affecting GPK usage and success, and the relationship between GPK and other cost management methods. Ultimately this survey indicates that users in German-speaking countries are generally satisfied and successful with GPK implementation. It also

shows that certain contextual, organizational, and behavioral factors distinguish GPK users and are more likely to lead to success.

ABOUT THE SURVEY

The Institute of Management Accountants (IMA®) helped us contact the director of the Internationaler Controller Verein (ICV), who agreed to sponsor our survey of its members. The ICV is a large association of controllers based near Munich and has members primarily in German-speaking countries. From the approximately 3,750 members of the ICV that we surveyed, we received 550 responses (15%), but a substantial number of responses (mostly online) were incomplete, leaving 286 usable responses (8%).² The usable responses tended to be from smaller firms, reflecting the membership of the ICV. Most of the responding firms reported annual sales between €85 million (about \$100 million) and €425 million (about \$500 million). The lack of large manufacturing firms associated with the ICV—especially automotive firms that use GPK—is a limitation of this study, but the average size of ICV members is representative of most German companies, so this sample still provides useful information for U.S. firms. The respondent companies are located primarily in Germany (81%), but Switzerland (10%) and Austria (7%) are also represented. Some are units of larger companies located throughout the world, but 83% of the parent companies are from these German-speaking countries.

GERMAN COSTING METHODS

Literature in Germany suggests that 50%-60% of German companies use some form of marginal costing.³ Still, there is little published information about how many firms are actually using GPK systems or even what precisely constitutes a GPK system. Recent articles have mentioned several common characteristics, but, as is often true when comparing different management accounting systems, developing a working definition is challenging because each application is different.

In the survey, we asked participants to identify the costing method that best describes their system. We then defined the label they chose (e.g., direct costing, ABC, GPK, etc.) as their self-described costing *method*.

A *practice* is a specific action that is taken regularly, such as “Variances are analyzed for each cost center.” A *tool* is a ready-made package that can be purchased or built to implement practices or systems, such as a software package. We define a set of costing practices as a *system*.

Table 1 summarizes the reported costing methods and practices. Respondents could indicate that they employ more than one method because these methods are not mutually exclusive. For instance, 160 firms (56%) answered that they practice direct costing, and 47 of these firms also indicated GPK as the best way to describe their costing system. This combination is reasonable because, with direct costing, only traceable costs are subtracted from sales revenues, a practice that has much in common with the marginal costing aspect of GPK. Eighty-six percent of these “direct costing” firms (and 78% of the total) report using contribution accounting, a key GPK practice. Consequently, the survey confirms the high usage of some form of marginal costing reported in German literature. Also, 104 of the 160 direct costing firms use plant-wide or departmental overhead allocation methods. These numbers suggest that when these firms do have need for full costs, they tend to use simpler methods to allocate the fixed costs.

Relatively few firms indicated GPK as their costing method (24%), which probably reflects the preponderance of smaller companies in the study. Almost all of the 69 firms that described themselves as employing GPK also indicated the use of other costing methods. Other than direct costing, 39 of the GPK firms listed plant-wide or departmental allocation, and 28 indicated activity-based costing. We also found significant differences in costing methods among industry groups. Direct costing is especially strong in manufacturing industries as well as wholesale and retail trade operations.

Plant-wide/departmental allocation methods are widely used in most industries except food and textiles. ABC is quite common in food and textiles industries as well as wholesale/retail trade and the financial industries. GPK appears to be most popular in the chemicals/paper/printing, wholesale/retail trade, and construction/mining industries. We would probably have found higher GPK usage in the machinery and equipment industries if larger auto manufacturers were represented

Table 1: Use of GPK Practices for Each Reported Costing Method

No.		All Firms	Direct Costing	Plantwide Dept OH Allocation	ABC	GPK
	Total Respondents	286	160 (56%)	171 (60%)	72 (25%)	69 (24%)
7e	Indirect costs assigned based on many cost centers and a network of cost assignments.	44%	48%	57% ^H	47%	57% ^H
7f	Each cost center has at least one output measure .	43%	46%	47% ^H	57% ^H	64% ^H
7g	Fixed and proportional costs are separated in relation to the output measure for each cost center.	35%	43% ^H	39%	50% ^H	62% ^H
7h	The cost of idle capacity is identified and computed.	35%	41% ^H	39% ^H	53% ^H	49% ^H
7i	Costs from support cost centers are transferred to primary cost centers while maintaining distinction between fixed and proportional costs.	35%	38%	39%	42%	57% ^H
7j	Planned costs (standard costs) are used for most costing purposes.	58%	61%	64% ^H	72% ^H	77% ^H
7k	Variances are analyzed for each cost center.	77%	82% ^H	82% ^H	82%	90% ^H
7l	The consumption (total demand) is analyzed for each cost center.	56%	61% ^H	63% ^H	71% ^H	71% ^H
2b	Contribution accounting. ^a	78%	84% ^H	80% ^H	88% ^H	90% ^H

Notes:

H = means statistically higher usage of practice than other firms, based on chi-square tests (probability at the 5% level). Percentages based on total respondents for each column.

a The question on contribution accounting used a scale of 1 (not used) to 7 (used extensively), and percentage above indicates responses of 5 to 7. The remaining questions were based on a response of yes or no, and percentage indicates those answering yes.

more strongly in the study.

We also asked respondents to indicate their specific costing practices from a list of practices that previous articles in *Strategic Finance* have associated with GPK.⁴ Because GPK consists of many practices, companies may apply some but not necessarily all of them. Table 1 also illustrates this point. As shown, firms identifying their system as GPK actually use GPK practices to varying degrees. Table 1 also shows that a wide variety of other costing methods and practices is being used in German-speaking countries.

Next, we compared the practices for the various types of reported costing methods. A striking result in Table 1 is the fairly high usage overall for these more advanced costing practices. A third of all companies use all of these practices, reflecting the emphasis that German-speaking firms generally place on detailed cost

management. We would not see anything close to these percentages in the United States, especially among relatively small firms such as surveyed here.

The most widely used costing practices indicated are contribution accounting and analyzing variances by cost center. The survey question translated the term contribution margin accounting as *Deckungsbeitragsrechnung* (DB), which is a very common practice in German-speaking countries. Almost every firm we met with has a very detailed DB income statement that it uses for most management decisions. These DB statements have been discussed in prior *Strategic Finance* articles, so we do not do so here.⁵ Generally, German firms also analyze variances and use planned costing (*Plankosten*), which is important for performing variance analysis.

Contribution accounting and analyzing variances by cost center are also commonly associated with GPK and

are the most widely used practices by firms indicating they employ the GPK method (see Table 1). Here is a list of GPK practices in order of use by those firms:

- ◆ Using contribution accounting (90%)
- ◆ Analyzing variances by cost center (90%)
- ◆ Using planned (standard) costs for most costing purposes (77%)
- ◆ Analyzing the consumption (total demand) for each cost center (71%)
- ◆ Having at least one output measure for each cost center (64%)
- ◆ Separating fixed and proportional costs for each cost center (62%)
- ◆ Assigning indirect costs based on many cost centers and a network of cost assignments (57%)
- ◆ Transferring costs from support cost centers to primary cost centers while maintaining distinction between fixed and proportional costs (57%)
- ◆ Identifying and computing the cost of idle capacity (49%)

These percentages suggest that not all of the GPK practices are used in each case. Many of the firms surveyed have simplified and adapted GPK theory to their own practical needs. For instance, some firms make assumptions that cost centers are either fixed or variable (i.e., no mixed cost centers). Thus, they do not separate these cost types within cost centers.

GPK ADOPTERS

To analyze the implementation of a costing system such as GPK, two steps are necessary: (1) determining who has tried GPK (i.e., “adopters”), and (2) identifying what stage(s) of implementation constitutes usage (i.e., “users”). In the case of GPK, some companies appear to use all the classic GPK practices, but others may only use those they feel are appropriate for their situation. Furthermore, two firms may apply essentially the same GPK practices, yet one might use the information on a daily basis while the other uses it only occasionally. In Table 1, we see that firms identifying their costing method as GPK do not all use all of the GPK practices. We also see that firms not calling their costing methods GPK *do* use many of the associated practices.

To define GPK adopters, we conducted site visits to better understand why some firms that appear to use

most or all of the GPK practices did not label their costing system as GPK. One reason is that some firms associate GPK with the tool in SAP’s CO module developed in association with Plaut Consulting. Another reason is illustrated by AVU, a small utility company in Gevelsberg, Germany. Thorsten Sebo, head of Controlling, explained that many people associate GPK with Wolfgang Kilger, a leading German academic in the field of cost accounting, and, therefore, consider it to be very theoretical. Kilger’s theory is that variable costs have to be strictly proportional with output, as in the marginal cost of the last unit (i.e., the *Grenzkosten* of GPK). Sebo said that AVU’s system is better described as *Plankosten* (planned costs) and is based on an approximate measure of activity (e.g., an operational measure such as hours). This approach is associated with Hans Georg Plaut, the former automotive engineer who founded Plaut Consulting, and is considered more practical.

Another reason is illustrated by Gebrüder Bode GmbH & Co. KG in Kassel, Germany, which makes doors for trains, buses, and cars. Although the company is essentially doing all the GPK practices addressed in this study, its controller said Gebrüder Bode’s costing system is not GPK because almost all of its manufacturing is for specific customer orders. His comment was, “GPK cannot be used because we have many different production methods and a lot of small-scale customer projects.” He explained that bus and train door orders are generally for 300-500 units, and these may vary by color, lighting, features, etc. In his opinion, you cannot do GPK in this situation because you cannot plan future production costs or set standards as you can for a more long-term product.

For these reasons, we did not limit identification of GPK adoption to those firms that labeled their cost system as GPK. Instead, we asked respondents to identify the implementation stage that best described their company’s situation regarding GPK. To define an “adopter” of GPK, we chose the stage, “Implemented then abandoned” (*Implementiert, dann jedoch aufgegeben*) or higher. We chose this stage even though these firms abandoned GPK because it means they did try it, but for some reason (to be analyzed later in the “user” analysis) the implementation was not successful or sus-

Table 2: GPK Adopters by Industry

Region	All Firms	Adopters
Construction & Mining	9	5 (56%)
Food & Textile products	14	6 (43%)
Chemicals, Paper, & Printing	35	23 (66%)
Metal, Rubber, & Plastics	28	16 (57%)
Machinery & Electronics	51	16 (31%)
Total Manufacturing Industries	137	66 (48%)
Transport, Communication, & Utilities	25	9 (36%)
Wholesale & Retail Trade	14	5 (36%)
Finance, Insurance, & Real Estate	25	5 (20%)
Consulting, Software, & other Business Services	56	19 (34%)
Health & other public services	29	9 (31%)
Total Nonmanufacturing Industries	149	47 (32%)
Total	286	113 (40%)

tained. Out of 286 total firms, 113 (40%) met our definition of GPK adopter.

Academic research shows that factors affecting adoption decisions tend to be contextual.⁶ Our study took this into account by first analyzing adopters by geographic region. We thought GPK adoption might be higher in the Southwest region of Germany because of the proximity to SAP AG, the major German enterprise resource planning (ERP) and GPK software vendor, but we found that GPK adoption rates are fairly consistent among all German-speaking regions (32% to 45%).

Next, we analyzed the industries of GPK adopters. GPK was originally developed for manufacturing operations, with service industry applications coming much later, and this factor seems to be reflected in the results.⁷ As shown in Table 2, adoption rates are highest among the manufacturing industries. Overall, the adoption rate among manufacturing industries is 48%, compared to 32% for nonmanufacturing firms.

Besides being higher for manufacturing firms, we also found that GPK adoption is more likely among companies operating with the following characteristics:

- ◆ Higher levels of information system integration and quality
- ◆ Higher proportional (variable) costs

- ◆ Low-cost competitive strategy
- ◆ Emphasis on management accounting
- ◆ Strong use of budgeting systems, benchmarking methods, product and customer profitability analysis, and transfer pricing

In addition, manufacturing firms are more likely to adopt if they use total quality management (TQM) practices, and nonmanufacturing firms are more likely to adopt if they have a higher potential for cost distortions (e.g., diversity in services, processes, and batch sizes). Although several factors differentiated GPK adopters and nonadopters, many other traits did not differ. Remember that adopters do not necessarily *use* GPK; they only decided to try it, so they may not differ much from nonadopters. Next, we analyze which adopters go on to use GPK for decision making and what factors influence their choice to do so.

GPK USERS

After deciding to try GPK, some firms later drop it or use only some GPK practices. That does not constitute a true GPK system. To define GPK users, we started with the GPK implementation stage identified by each respondent. Of the 113 firms that adopted GPK, eight firms have abandoned it, leaving 105 in one of the three

usage stages. Here we felt it important to identify some additional criteria for GPK usage to differentiate it from mere implementation of some GPK practices. Companies identified as “users” in the survey should be applying the key practices of GPK systems.⁸

The *Grenzkosten* part of GPK implies some form of marginal costing, which essentially corresponds to using proportional costs as product costs. The practice closest to this idea treated in our survey is addressed in question 2b, which refers to contribution accounting (*Deckungsbeitragsrechnung*). Contribution accounting relies on marginal costing by subtracting the proportional (i.e., product) costs from sales. *Plankosten* refers to planning costs in every cost center as the result of analytical cost budgeting. Thus, the “plan” part of GPK requires planning the costs for each cost center. In addition, GPK systems should separate fixed and proportional costs and compare planned and actual costs at the cost center level. These practices were quite prevalent in firms identifying GPK as their cost method (see Table 1), suggesting that in German-speaking countries, practice follows theory fairly closely—certainly closer than in the United States.

Thus, to be a GPK user in our study, firms had to meet the following criteria: (1) use GPK at least occasionally for decision making, (2) use planned (standard) costs for most costing purposes, (3) analyze variances for each cost center, (4) use contribution accounting (DB), and, for manufacturing firms only, (5) separate fixed and proportional costs in relation to the output measure for each cost center. We did not require the last constraint for nonmanufacturing firms because only about a third reported following that practice, and it probably applies more to manufacturing firms. Of the 113 adopters, 46 firms (41% of the adopters and 16% of all firms) met our definition of GPK user.

GPK FIRM CHARACTERISTICS

Academic research on implementation of new management systems shows that actual usage often depends more on behavioral and organizational issues than on contextual issues.⁹ We compared the 46 GPK users to the 67 nonusers in several areas. Table 3 shows the characteristics we found that differentiate GPK users from nonusers.

First, it is commonly thought that companies with ERP information systems—and specifically ERP systems by SAP—are more likely to use GPK costing practices. We created an index of questions to measure the level of ERP implementation that related to mapping out all processes and integrating the information system across sales and operations as well as with suppliers and distributors. Even though GPK adopters have a considerably higher level of ERP implementation than nonadopters, users have an even greater level than nonusers (+0.65 vs. -0.05; all of our indexes have a mean of zero).

We also compared groups on overall information system (IS) quality based on an index of questions relating to query capability, data availability, frequency of updates, and relationship with system vendor. The results show that IS quality is also much higher for users. These numbers add credence to the idea that a very strong information system is important for successful implementation of GPK. As one adopter wrote, “The use of the costing method depends on the IT system; hence, it is a question of money and resources which [lead to the] IT system, and subsequently which accounting system is used.” GPK users also indicated slightly higher use of ERP systems—particularly those by SAP AG—than nonusers, but these percentages are not statistically different. It appears to be the level and quality of ERP implementation that make the difference.

Regarding the amount of money and resources available, we asked all GPK adopters about the nonaccounting employee and top-management support they received. Top-management support, often an important determinant for successful implementation of any new system, probably has influence over the nonaccounting support as well. Both were considerably higher among GPK users than nonusers. Certainly if upper management thinks it is important and provides the necessary resources, GPK has a much better chance of being utilized. One measure of resources provided is the amount of training offered, which was higher for GPK users than nonusers, although the generally low scores indicate that more training would have been helpful. Another measure of resources provided is the use of outside consultants. Twenty-four percent of GPK users

Table 3: GPK User Profile

Firm Characteristic	Range	Nonadopters	GPK Nonusers	GPK Users
Higher level of ERP implementation	-2.7 to +2.0	-0.17	-0.05	+0.65 ^{N,A}
Higher information system quality	-3.0 to +1.8	-0.17	-0.03	+0.53 ^{N,A}
Nonaccounting employee support for GPK	-1.5 to +2.0	N/A	-0.44	+0.42 ^A
Top-management support for GPK	-1.8 to +1.8	N/A	-0.39	+0.39 ^A
Adequate training for GPK implementation	1 to 7	N/A	2.54	3.74 ^A
Involved outside consultants in GPK system	Yes, No	N/A	5%	24% ^A
Use budgeting systems for controlling costs	1 to 7	5.84	5.79	6.70 ^{N,A}
Use benchmarking	1 to 7	4.03	4.05	5.00 ^{N,A}
Use product profitability analysis	1 to 7	4.78	5.37 ^N	5.85 ^{N,A}
Use customer profitability analysis	1 to 7	4.04	4.33	5.39 ^{N,A}
Use transfer pricing	1 to 7	4.05	4.49	5.31 ^{N,A}
Use formal strategic planning process	1 to 7	4.87	4.89	5.52 ^{N,A}
Implement new processes/reengineering	1 to 7	4.96	4.58	5.22 ^A
Average tenure of CEO (# years)	0-41	6.66	7.24	10.00 ^A
Internal accounting as important as external accounting	1 to 7	4.82	5.28 ^N	5.38 ^N
Controlling and external accounting separate functions (Nonmanufacturing firms only)	1 to 7	4.46	4.44	5.73 ^{N,A}
Important for mgt. to have precise answers	1 to 7	5.64	5.55	6.20 ^{N,A}
No. of internal cost pools for overhead allocation (Mfg. firms only) (4=6-10, 5=11-20, 6=21-50, 7=51-75, 8=76-100)	1-14	4.02	3.63	4.55 ^A
No. of cost centers (Mfg. only) (4=6-10, 5=11-20, 6=21-50, 7=51-75, 8=76-100)	1-14	6.50	7.90 ^N	7.52 ^N
No. of output measures (Mfg. only) (4=6-10, 5=11-20, 6=21-50, 7=51-75, 8=76-100)	1-14	4.00	4.95	5.34 ^N
Use different cost allocation methods for financial accounting and controlling	Yes, No	32%	28%	59% ^{N,A}
Higher proportional (variable) cost %	0 to 98%	46%	51%	57% ^N

N = statistically greater than GPK nonadopters (5% level, two-tailed).

A = statistically greater than GPK nonusers (5% level, two-tailed).

responded that outside consultants were involved in their GPK system, compared to only 5% for nonusers.

For an expensive system like GPK to be implemented successfully, it needs to be integrated with other management systems and practices. Therefore, it is not surprising that GPK users show higher use of other systems and practices than nonusers. Besides ERP implementation and information system quality discussed

previously, Table 3 shows that users reported higher use of budgeting systems to control costs, benchmarking, product profitability analysis, customer profitability analysis, and transfer pricing. These other practices and systems probably all benefit from the GPK techniques, and having strong budgeting systems almost certainly helps support GPK.

In addition, some management practices differentiate

GPK users from nonusers, such as the stronger employment of formal strategic planning. One user commented that GPK is “important for strategic decisions.” GPK strongly supports strategic decisions such as whether to add or drop product lines, as well as pricing, outsourcing, etc. Use of a balanced scorecard approach to performance measurement was higher at user firms, but the overall mean scores (3.4 vs. 2.6 on a seven-point scale) were so low that it is hard to consider this practice a significant part of a user profile. Similarly, user companies were more likely to use value-chain analysis than nonusers, but overall these scores were also low. In addition, GPK users tend to be those ready and willing to implement new processes or reengineer old ones.

Regarding long-term focus, we found the average tenure of CEOs to be higher at GPK user companies (10 years compared to 7.24 years for nonusers). This difference suggests that these firms focus a bit more on the long term and may consider their costing system to be a long-term investment. Our site visits confirmed that German-speaking companies generally place much more emphasis on management accounting (i.e., controlling) than do firms in the United States. Indeed, controlling is often a separate department in these firms, and they often have a number of employees dedicated to controlling that rivals the number for financial reporting. Consistent with this finding, management accounting (or controlling) is an important feature of most firms in our survey, which correlates with rates of GPK usage. The average percentage of accounting employees doing controlling was 50%, and user firms were slightly higher with a mean of 54%. At nonmanufacturing firms, we found an even higher likelihood that controlling and external accounting are considered separate functions.

GPK use is also more likely in firms where, for cultural or market reasons, management wants to obtain precise answers to questions, as GPK can provide a much higher level of precision than other costing methods. GPK users reported a higher average number of cost pools used for overhead cost allocation than nonusers did (around 10 cost pools on average). They also had significantly more cost centers (around 75 on average) and output measures (between 11 and 20) than nonadopters. Users are also more likely to employ different cost allo-

cation methods for financial accounting and controlling (59% compared to 28%), although we found no other financial reporting method to be dominant.

Firms with more proportional costs may have a greater need for a control system like GPK, which requires more cost centers—and better planning and tracking for each. One nonadopter commented that GPK is “no good [here; because we have] more than 90% fixed costs; control with contribution margins, and management performance evaluation.” The data supports this idea, showing that GPK users have a higher average proportional (variable) cost percentage than nonadopters (57% vs. 46%). Surprisingly, we found no major differences among user companies regarding process flow. User companies include job shop (34%), batch flow (46%), and continuous flow (20%) firms.

Regarding the use of ABC, identified in the survey as *Prozesskostenrechnung*, we found little difference between GPK users and nonusers in the use of ABC for controlling purposes. Both groups reported using activity cost pools for overhead costs at about the same percentage (43%-48%). Thirty-nine percent of GPK users identified their costing method as an ABC system, while 30% of adopters/nonusers labelled it as such.

MEASURING GPK SUCCESS

Of course the big question is whether GPK systems make users more successful. That is always a hard question to answer because success can be measured in many ways and is affected by many variables. Still, the standards for measuring performance are very specific in German-speaking companies. Until recently, German firms did not even use a general word for “business performance” because it was considered too vague. Instead, they would ask, “What do you mean by performance—how is it measured?” These companies prefer to discuss specific measures of performance, such as revenue, profits, ROI, total return to shareholder, etc. But in order to better communicate with the Western world, German companies are increasingly utilizing the English word “performance” to refer to the general performance of a company.

We asked German firms to rate the performance of their firm and costing system based on several criteria, and then we compared these results with their level of

Table 4: Measures of GPK Success

Success Measure	Nonadopters	GPK Nonusers	GPK Users
How well cost management system (CMS) meets the following purposes: (1=poor; 7=excellent)			
Budgeting and planning	5.75	5.95	6.50 ^{N,A}
Performance evaluation	4.55	4.79	5.60 ^{N,A}
Product costing/pricing decisions	4.94	4.94	5.47 ^N
External reporting	4.84	5.09	5.38 ^N
Process improvement	4.20	4.63 ^N	5.09 ^{N,A}
Make-or-buy decisions	4.22	4.40	4.70
Product design decisions	2.81	3.57 ^N	3.40 ^N
Overall needs	5.21	5.74 ^N	5.78 ^N
Business unit's performance relative to your industry competitors over the last three years across the following dimensions: (1=signif. below average; 7=signif. above average)			
Cost control	4.89	4.86	5.24 ^N
Development of new products	4.84	4.52	5.19 ^A
Internal process performance	4.55	4.55	4.91 ^{N,A}
Return on investment	4.52	4.84	4.84
Residual income	4.41	4.81 ^N	4.81
Average gross margin on your business unit's primary products/services? (1=0-5%, 3=11-15%, 5=31-45%, 7=61%+)	3.76	3.61	4.33 ^{N,A}
In your opinion, has GPK been worth the cost?			
Yes/will be	N/A	42%	64%
No	N/A	22%	15%
In the future, do you expect your cost accounting system to become:			
Simpler	28%	24%	35%
More complex	43%	43%	37%
About the same	29%	33%	28%
Do you believe the benefits of GPK have been oversold by GPK advocates?			
Yes	27%	18%	18%
No	24%	35%	42%

N = statistically greater than GPK nonadopters (5% level, two-tailed).

A = statistically greater than GPK nonusers (5% level, two-tailed).

GPK usage (see Table 4). First, we asked them how well their cost management system (CMS) fulfills various purposes. As shown, GPK users rated their CMS considerably higher than did nonusers in almost all areas. Especially noteworthy are the ratings for budgeting and planning (6.50, with 7 being excellent), perfor-

mance evaluation (5.60), product costing/pricing decisions (5.47), and overall needs (5.78).

Next, we asked respondents to rate their business unit's performance relative to their industry competitors over the last three years according to various measures. As shown in Table 4, users report better cost control,

development of new products, and internal process performance than nonusers. In addition, GPK users indicated that their firm's average gross margin on its primary product or service is significantly higher (16%-30%) than did the rest of the respondents (11%-15%). Improved cost control also seems a likely outcome of GPK practices and could easily lead to higher margins. Responses indicating better development of new products and internal process performance suggest that GPK also facilitates process improvement decisions. More than one user commented that GPK aids in sales management, customer analysis, and production decisions (such as when bottlenecks occur).

We then asked GPK adopters and users to provide their opinion about whether GPK had been worth the cost. Table 4 shows that 64% of users indicated that GPK was either worth it or will be. Only 15% answered it was not worth the cost. GPK nonusers were a little less positive, but 42% still indicated it would be worth it if they used it. Considering the level of work involved to implement and maintain the system, these numbers suggest that the majority of GPK user firms feel it is justified. One user commented, "GPK is a relevant part of the overall MIS." Another wrote, "For short-term decision making in a goods-producing company, GPK is essential." On the other hand, not all users think GPK is worth it. One wrote that GPK was "too expensive (man-hours) to calculate the rates." Another adopter wrote, "update of system/data does not justify the results—cost vs. benefit out of balance."

SIMPLER OR MORE COMPLEX?

There is ongoing debate in German-speaking countries regarding whether or not cost systems should be simplified, and two general opinions seem to be emerging. One view holds that German systems are too complex and need simplification; the other contends that because the world is getting more complex, we need more complex costing systems. Table 4 shows that both outlooks are well represented. Considering this issue with reference to GPK use, we can see that nonadopters and nonusers provided similar responses regarding the future direction for their CMS. Twenty-eight percent of nonadopters expect it to get simpler, 43% said more complex, and the nonuser results were

similar. GPK users were almost evenly split on the issue, with 35% saying simpler, 37% saying more complex, and 28% saying about the same.

IS GPK OVERSOLD BY ADVOCATES?

We asked all respondents a question often posed in the United States regarding management accounting systems such as ABC: "Do you believe the benefits of GPK have been oversold by GPK advocates?" As shown in Table 4, 27% of nonadopters and 18% of all adopters responded "yes," while 42% of users (and 24%-35% of the rest) answered "no." Although GPK is intensively taught and discussed in German-speaking countries, it does not appear to suffer from the "hype" that often accompanies consultant-driven tools in the United States.

GPK COMPARED TO OTHER COSTING SYSTEMS

In addition, we compared the success measures of GPK users with those of firms that employ other costing systems, including "simple GPK" systems, ABC systems, and target costing systems (firms could be included in more than one category). To define "simple GPK" systems, we excluded those that meet full GPK criteria and included systems that utilize only the most basic GPK practices, contribution accounting and planned costs. We included ABC systems because they are considered a key ingredient of resource consumption accounting and are currently being promoted in the United States. Finally, although it is not a costing system by definition, we included target costing as a market-based pricing and cost management system.

As evident in Table 5, the combination of GPK and ABC consistently provides the best overall CMS and business unit performance results for manufacturing firms. This group rated their CMS higher than other groups for fulfilling the following purposes (all on a seven-point scale): product costing/pricing decisions (6.50), budgeting and planning (6.83), and overall needs (6.67). These firms also rated their business unit's performance higher than the other systems in terms of return on investment (5.60), cost control (5.83), and gross margin on primary products (4.67). We have to be cautious in drawing conclusions from these results

Table 5: GPK Success Compared to Other Costing Systems

Success measure ¹	"Simple GPK" Users ²	GPK Users	ABC Users ³	GPK + ABC Users	Target Costing Users ⁴
Part A: Manufacturing Industries					
Total number of firms	57	31	23	6	37
CMS meets purposes:					
Product costing/pricing decisions (1-7)	5.88	5.71	5.91	6.50	5.89
Budgeting and planning (1-7)	5.88	6.45	5.83	6.83	6.14
Overall needs (1-7)	5.69	5.74	6.09	6.67	5.89
Business unit's performance:					
Return on investment (1-7)	4.55	5.03	4.95	5.60	4.76
Cost control (1-7)	5.08	5.23	5.14	5.83	5.22
Annual sales (1-6)	2.21	1.90	2.26	1.83	2.35
Average gross margin (1-7)	4.09	4.20	3.91	4.67	4.15
Part B: Nonmanufacturing Industries					
Total number of firms	30	15	23	6	25
CMS meets purposes:					
Product costing/pricing decisions (1-7)	4.97	4.93	4.62	5.00	5.13
Budgeting and Planning (1-7)	6.20	6.60	5.59	6.50	6.40
Overall needs (1-7)	5.43	5.87	5.45	6.33	5.84
Business unit's performance:					
Return on investment (1-7)	4.74	4.43	4.90	4.00	4.50
Cost control (1-7)	5.10	5.27	4.81	5.17	5.56
Annual sales (1-6)	2.33	1.80	2.48	2.50	1.80
Average gross margin (1-7)	3.87	4.60	3.62	3.17	3.77

1 See descriptions in Table 4.

2 "Simple GPK" users defined as using planned (standard) costs for most costing purposes and contribution accounting (questions 7j and 2b on Table 1).

3 ABC users defined as those that allocate indirect costs to activity or process cost pools, then assign to cost objects based on multiple cost drivers, and they named ABC as best describing their costing method.

4 Target costing users defined as answering 6 or 7 out of 7 on their usage of target costing over the past three years.

because only six manufacturing firms used a combination of GPK and ABC, and these varied in industry, sizes, and strategic purpose. The results simply suggest that the GPK/ABC combination can be highly effective among manufacturers, indicating the need for further research using more and better-matched firms that would allow for industry-specific analyses.

Among nonmanufacturing firms, the story is somewhat different. Here the ABC/GPK combination received the high score for meeting overall CMS needs and was strong in other measures, but the other systems also earned high success scores. Target costing users gave the highest rating for product costing/pricing decisions and business-unit cost control. GPK (without

ABC) rated highest on budgeting and planning and gross margin. ABC was highest on business-unit return on investment. These groups varied even more than the manufacturers in terms of industry and other characteristics, so the results should also be used with caution.

WHEN IS GPK MOST SUCCESSFUL?

We also tried to determine the circumstances that make GPK most beneficial. This is an important question for U.S. firms contemplating RCA adoption because of the significant investment required to implement it. We based this analysis on two measures of success. The first measure is how well the firm rated its CMS for meeting overall needs. Tables 4 and 5 indicate the aver-

age ratings for meeting overall needs among GPK users and how these compare to assessments of other costing systems. In Table 6, we split GPK users into two groups: low and high. The “low” group rated their CMS less positively (i.e., 4 or 5 on a seven-point scale), while the “high” group rated it quite favorably (i.e., 6 or 7). As shown, many differentiating factors were consistent with the GPK user profile as a whole (Table 3): higher level of ERP and information system quality, benchmarking, transfer pricing (manufacturing firms only), and strategic planning generally correlated with positive GPK assessment. Also, a few new factors showed up, namely use of ABC, Just-in-Time (JIT), target costing, and the potential for cost distortions (the latter two are for manufacturing firms only). Thus GPK

Table 6: When Is GPK Most Successful? (based on GPK users only)

Success Factor	CMS meets overall needs ¹		GPK worth the cost? ²	
	Low (4–5) (N=11)	High (6–7) (N=20)	No / Too early to tell (N=14)	Yes / Will be (N=10)
Higher level of ERP implementation	+0.14	+0.91 ^L	+0.41	+0.64
Higher information system quality	-0.05	+0.84 ^L	+0.61	+0.24
Use benchmarking	4.07	5.47 ^L	5.17	5.14
Use transfer pricing (Mfg. only)	4.00	6.15 ^L	5.22	5.33
Use formal strategic planning process	4.88	5.87 ^L	5.42	5.43
Just-in-Time inventory practices (Mfg. only)	-0.15	+0.44 ^L	-0.07	+0.43
Potential for cost distortions (Mfg. only)	-0.27	+0.32 ^L	-0.06	+0.10
Use activity-based costing (ABC)	0%	40% ^L	25%	24%
Use target costing	6%	40% ^L	25%	29%
Nonaccounting employee support for GPK	+0.16	+0.55	-0.48	+0.82 ^N
Top-management support for GPK	+0.28	+0.45	-0.54	+0.69 ^N
Adequate training for GPK implementation	3.50	3.88	2.88	4.11 ^N
Important for mgt. to have precise answers	5.94	6.33	6.50	5.76 ^N
Low-cost strategy (1 = most important)	5.25	5.34	6.58	4.76 ^N

1 The question was worded as: “How well cost management system (CMS) fulfills the following purposes: Overall needs (1=poor; 7=excellent; all GPK users indicated 4 or above)”

2 The question was worded as: “In your opinion, has GPK been worth the cost?”

L = statistically greater than “Low” group (5% level).

N = statistically greater than “No / Too early to tell” group (5% level).

is rated higher as an overall costing system when there is a strong, highly integrated information system and when it is used with other complementary costing practices and systems, such as ABC and target costing.

Our second measure of success was whether the respondent felt GPK had been worth the cost. This analysis must likewise be viewed with caution. As illustrated by the range of comments we received on the topic, opinions about GPK among controllers in Germany are quite divided, so responses may reflect the biases of the respondents. The differentiating factors that emerged under this query are completely different from those prominent in the first measure of success. Here we see that organizational factors including nonaccounting employee support, top-management support, GPK implementation training, management need for precise answers, and low cost suggest strategy were statistically stronger for the “Yes/Will be” group than for the “No/Too early to tell” group. These findings seem to show that for GPK to be deemed “worth it,” top management has to want it, almost regardless of how well it meets costing needs.

To summarize, there is consistent evidence that GPK users are quite satisfied and successful when applying this advanced costing approach. Yet GPK is rated higher in meeting overall costing needs when implemented within a strong, highly integrated information system and when it is used with other complementary costing practices, such as ABC and target costing. In addition, it is more likely to be deemed worth the cost if top management strongly supports it in the organization.

SATISFACTION LEVELS

This survey of German-speaking firms regarding cost accounting practices and organizational characteristics indicates that GPK users are generally satisfied and have experienced success with this advanced costing system. It also shows that certain contextual, organizational, and behavioral factors distinguish GPK users from nonusers and the measures of success they report. Users rate the quality of the costing system higher when there is a strong, highly integrated information system and it is used with other complementary costing practices, such as benchmarking, JIT and transfer pricing (for manufacturing firms only), strategic planning,

ABC, and target costing. It is more likely to be deemed worth the cost, however, if top management is supportive.

How might this analysis help U.S. firms in their consideration of RCA, a blend of GPK and ABC? Although based on a limited number of firms in different industries, the survey provides evidence that German manufacturing firms using both GPK and ABC rate their cost system and firm performance higher than other firms. The results are less clear among nonmanufacturing firms, and this sector needs to be researched further. The results for manufacturers suggest that RCA can provide the best features of both GPK and ABC. This study also indicates a number of important issues that firms should take into account before adopting RCA. Above all, they should consider whether they have the complementary systems and top-management support necessary for success. ■

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ENDNOTES

- 1 For example, see Kip Krumwiede and Augustin Suessmair, “Getting Down to Specifics on RCA,” *Strategic Finance*, June 2007, pp. 50-55; Gunther Friedl, Hans-Ulrich Küpper, and Burkhard Pedell, “Relevance Added: Combining ABC with German Cost Accounting,” *Strategic Finance*, June 2005, pp. 56-61; and Anton van der Merwe and David E. Keys, “The Case for Resource Consumption Accounting,” *Strategic Finance*, April 2002, pp. 31-36. There is even a new RCA Institute (www.rcainstitute.org).
- 2 The low percentage of usable responses is a limitation of this study and is probably due to the frequent survey requests received by members of the ICV and the length of the survey (43 questions). Almost all respondents are from controlling or accounting areas.
- 3 See Wolfgang Kilger, Jochen Pampel, and Kurt Vikas, “Chapter 0, Introduction: Marginal Costing as a Management Accounting Tool,” *Management Accounting Quarterly*, Winter 2004, p. 15. Reprinted and translated from Kilger, Pampel, and Vikas, *Flexible Plankostenrechnung und Deckungsbeitragsrechnung*, 11th edition, GmbH, Wiesbaden, Germany, 2002.
- 4 See Friedl, Küpper, and Pedell, June 2005; Kip Krumwiede,

- "Rewards and Realities of German Cost Accounting," *Strategic Finance*, April 2005, pp. 27-34; and Paul A. Sharman, "Bring on German Cost Accounting," *Strategic Finance*, December 2003, pp. 30-38.
- 5 See Friedl, Küpper, and Pedell, June 2005; and Sharman, December 2003.
- 6 Studies include R.B. Cooper and R.W. Zmud, "Information Technology Implementation Research: A Technological Diffusion Approach," *Management Science*, vol. 36, no. 2, 1990, pp. 123-139; and Kip Krumwiede, "The Implementation Stages of Activity-based Costing and the Impact of Contextual and Organizational Factors," *Journal of Management Accounting Research*, vol. 10, 1998, pp. 239-277.
- 7 Paul Sharman and Kurt Vikas, "Lessons from German Cost Accounting," *Strategic Finance*, December 2004, pp. 28-35.
- 8 To identify key practices of GPK systems, we relied primarily on two sources. The first is the *Controller-Wörterbuch* (or Dictionary for Controllers), International Group of Controlling [IGC], Schäffer-Poeschel Verlag, Stuttgart, Germany, 1999. It is a helpful dictionary for German controllers, providing both German and English translations. The second source is Friedl, Küpper, and Pedell's June 2005 *Strategic Finance* article.
- 9 Cooper and Zmud, 1990; and Krumwiede, 1998.