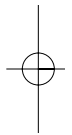


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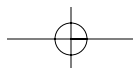
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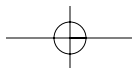
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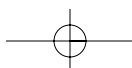
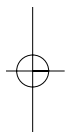
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Chapter 11

Retirement Security in a DC World: Using Behavioral Finance to Bridge the Expertise Gap

Jason Scott and Gregory Stein

Defined contribution DC plans can provide real retirement security, but only if participants utilize them appropriately and make informed investment decisions. Yet, it has proved to be a challenge to provide the necessary expertise to support good decisionmaking in the DC context. Many employers have offered educational materials with fairly limited success, partly because these educational materials have often been relatively generic and difficult for people to apply to their own circumstances and situations. To make things a bit easier for employees, some employers have considered purchasing advisory services for their employees. An obstacle to this approach, from the employer's point of view, has been legal liability: Companies feared that if they selected advisers for their employees, then the company might be liable for any losses employees sustained.

Three factors have contributed to a dramatic shift in employer opinion regarding the provision of advisory services for employees. First, the US Department of Labor (USDOL) issued an advisory opinion in May 1998 which stated that it was legal for sponsors to offer advice. The DOL then reaffirmed that employers had the responsibility of selecting and monitoring the advice provider; then, assuming prudent selection and monitoring on the part of the employer, the advice provider was liable for the actual advice given. A second contributing factor was a spate of Enron-like corporate scandals. These scandals, and resulting lawsuits, demonstrated that employers bore some degree of responsibility for helping their employees manage their pension plans. A third factor contributing to changing attitudes was simply that more large employers began to offer advisory services, so subsequent employers did not have to be the first to offer advice.

The combination of these three factors has produced a dramatic change in the willingness to offer advice, so that today, many plan sponsors now believe that offering advisory services actually *reduces* their legal liability. Nevertheless, even while employers have grown more comfortable with the

208 Jason Scott and Gregory Stein

notion of providing advice, changing employee behavior remains a difficult task. This chapter explores some of the different techniques used to provide advice to employees and relates the experiences of Financial Engines, Inc., a provider of advisory services to sponsored retirement plans, to some of the current issues and hypotheses in behavioral finance.

In what follows, we first describe the market background associated with advisory services to pension-covered employees. We explore the two main employer goals for advisory services, namely disclosure and retirement security. Next we provide some background on how the services and products from Financial Engines fit into this general marketplace, and we discuss reaching the employee for disclosure purposes: What approaches have been used, their relative performance, and what explains the differences. Corroborating a hypothesis from the behavioral finance literature, we show how even seemingly small improvements in convenience can have a significant impact on the ability to reach employees. Finally, we analyze evidence on the impact of adviser and personal statements on participant behavior. The Adviser, in particular, went through a significant redesign that focused participants on fewer choices.

Market Background

Before diving into the specific details, it is important to understand the key features of DC-related advisory services. When employers hire a company to provide advisory services to their employees, they are generally looking to accomplish one or both of the following goals:

1. *Disclosure.* Disclose to employees regarding their DC plan, help employees understand how much risk they are taking, what their retirement prospects are, and how much or how little they should expect from their DC plan.
2. *Retirement security.* Help employees make better decisions regarding investment risk and savings levels; employees should have sufficient saving and diversification to maximize their chance of a secure retirement.

The first goal arises from concerns regarding legal liability. Employers may be concerned that their employees might make saving and investment mistakes, so the fundamental requirement for the first goal is communication. The second goal involves changing individual behavior to improve retirement prospects. There are both legal liability and paternalistic aspects to this goal. If poor retirement finances might result in lawsuits, then changing behavior to improve retirement outcomes could reduce legal liability. Of course, some companies are primarily motivated by liability considerations, but many others genuinely want to help employees secure their retirement futures. For the latter employers, altering behavior is the success metric for advisory services.

The Financial Engines Approach

Financial Engines, Inc. seeks to help companies with these two objectives, by applying to the individual's retirement problem some of the best practices used by pension asset managers (fund style and performance attribution, Monte Carlo simulation, mean-variance optimization, etc). In practice, this has meant giving employees two things. First, the approach provides employees with a retirement forecast to help them set realistic expectations. Based on their current saving and investment decisions, the forecast shows employees how much money they can expect annually in retirement if their investments perform well, average, or poorly. Communicating the forecast and related information to employees delivers on the employer's disclosure objective. Second, the company provides specific recommendations for saving and fund allocation to help employees improve their retirement forecasts. Persuading individuals to act on these specific recommendations helps to accomplish the second employer goal of improving retirement security.

"Personal Statements" and "Online Advice" are two core services that Financial Engines currently offers.¹ Personal Statements are sent to investors via electronic or regular mail, aimed at reaching all employees. Personal Statements first provide each participant with a personalized forecast of the reasonable range of outcomes he can expect given his specific investments, saving rate, and time horizon to retirement. Though analogous to a social security projection, this forecast also includes an assessment of the range of likely outcomes (upside, median, and downside), instead of just a point estimate. Additionally, the statement indicates how to improve the forecast, in ways that depend on the particular participant. For example, participants who do not fully take advantage of an employer match receive an analysis that shows the forecast improvement as a result of additional saving. Participants who take an extreme risk position (either conservative or aggressive) are shown the impact of a more diversified portfolio. As a result, the Personal Statement provides both an educational forecast and suggestions for change.

Our second tool, the Online Adviser, allows employees to get a realistic forecast of the range of income they can reasonably expect from their current retirement benefits. In addition it offers specific saving and investment recommendations to help improve the retirement forecast; and monitors progress to retirement and sends alerts if changes are necessary. Since Personal Statements are relatively new (released broadly in the Fall of 2002), there was yet little information available for analysis. In contrast, more information is available on the Adviser.

Reaching the Participant

It would be that assessing participants' current situation was described as one of the key goals in this marketplace. In the present context, the participant must currently log on to the Financial Engines website.² Adoption of

210 Jason Scott and Gregory Stein

the Online Adviser, therefore, occurs when the participant registers for the Adviser service. To analyze adoption patterns, we drew a sample of companies from the Financial Engines' data warehouse. The sample was limited to corporations with 10,000 or more participants in their 401(k) plans, to avoid the issue of mixing data from very large and very small organizations. It should be noted that adoption does not all occur on the first day the Online Adviser is made available; rather the online medium is on-demand, adoption occurs fairly uniformly over any given time period. To address this issue, the sample was restricted to corporations that had made the Adviser available for at least one year as of the end of 2002.³

Overall adoption results at these large firms are reported in Table 11-1. The adoption percentage for each company is defined as the number of participants adopting the Adviser service, divided by the total number of plan participants (including terminated and retired participants). These are fairly significant barriers that limit the maximum adoption that reasonably can be expected. Financial Engines currently has no ability to communicate effectively with participants who are terminated or who are retired employees. In addition, Internet and plan provider access are sometimes difficult to measure, and in some cases, these barriers can exclude half or more of the eligible population from adopting the Adviser service. No adjustment has been made for Internet or plan provider access.⁴

Adoption rates average 18 percent in the 15 companies that have offered the service at least one year. Restricting the sample to companies that have offered the service at least 2 years boosts the average adoption rate to

TABLE 11-1 Current Adoption at Large Corporations^a

	<i>Average Adoption (%)</i>	<i>With Electronic Communication (%)</i>	<i>Without Electronic Communication (%)</i>	<i>Sample Size (Companies)</i>
<i>Years since rollout^b</i>				
1+	18.2	24.4	8.9 ^c	15
2+	28.0	33.9	10.1 ^c	4
3+	40.3	40.3	N/A ^{3c}	2
<i>Adoption measured at^d</i>				
6 months	10.1	13.5	4.9	10
1 year	13.2	17.3	7.2	10
2 years	21.1	27.1	9.1	3

Notes:

^a Large is defined as 10,000 or more DC plan participants.

^b Sample: 15 companies, ~450,000 participants, rollout date prior to 1/1/02.

^c All companies with 3 or more years of data have electronic communication.

^d Sample: 10 companies, ~379,000 participants, rollout date prior to 1/1/02.

Source: Authors' computations.

11 / Retirement Security in a DC World 211

28 percent, while companies with 3 or more years have adoption rates of 40 percent. Of course, as the sample gets smaller, there is a large potential for company idiosyncrasies to skew the results. Corporations with three or more years of history are on average smaller in our sample (18,000 participants versus 30,000 for the larger sample). In addition, as “early adopters,” these firms may be different from other large corporations. Such caveats aside, adoption does seem to significantly increase with time since the Adviser was first made available.

One of the most effective ways of encouraging employees to utilize the Financial Engines website is to send participants an email announcing the availability of the service. Including a link in this email that immediately brings the participant to the Financial Engines website makes trying the program extremely easy. By contrast, sending the participant a hard copy via regular mail means he must locate a computer, access the Internet, and type in a URL to achieve the same results.

One of the findings from the behavioral finance literature is that apparently small barriers can have large effects on behavior. It might be thought that employees would be willing to spend a bit of time to arrive at a proper plan for retirement investment, and saving decisions. But plan design can have a potent impact. For example, a DC plan could be structured to allow any employee who wishes to enroll in the plan (positive election enrollment), or plan rules could state that every employee is automatically enrolled unless he actively chooses to exit the plan (negative election enrollment). Companies tend to go to great lengths to inform employees about their choices and make reversing the default straightforward. Yet, this small change in plan design has a huge impact on participation. One hypothesis is that employees follow the “path of least resistance,” and thus any barrier can cause employees to stick with the default choice (Choi et al., 2002).

Three alternatives have been proposed to explain this result (Duflo and Saez, Chapter 8, this volume). First, the result could stem from employees inferring some information from their employer’s selection of the default. Second, employees may just not take the time to think about retirement. Finally, the default may be a commitment device to protect individuals from themselves. Table 11-1 provides evidence on the impact of reducing the barriers to adoption. Some companies provide an email with a link to the Online Adviser, while others do not, and the startling differences in behavior emerge. Of the 15 large sponsors, nine allow electronic communications while six do not. At those using electronic communications, adoption rates are almost 25 percent, while they are 9 percent if electronic communications are not used. The sample gets extremely small when examining companies that offered the Adviser more than 2 years, but the effect appears to be magnified.

Levels of adoption appear to be higher the longer the time since the Adviser service has been offered. It is possible that the effect of electronic communications could be due to differences in the amount of time since the service was first offered. For example, participants in companies with electronic

212 Jason Scott and Gregory Stein

communications have exposed about 7 months longer than those in companies lacking electronic communication. The bottom panel of Table 11-1 looks at interim adoption results to assess the impact of this difference.

Interim adoption results are also available for a sub sample of the main data set. Ten of the 15 companies in the base sample had interim adoption data available, corresponding to certain points in time (e.g. 6 months after rollout, one year after rollout, and 2 years after rollout), as opposed to current adoption rates. For the ten companies with available data, the average adoption rate at the 6-month point was about ten percent, which rose to 13 percent at the 1-year mark. The impact of electronic communication does not change after controlling for time since rollout. Firms having electronic communication averaged 13 and 17 percent adoption at the 6-month and 1-year mark, respectively. In contrast, companies without electronic communication averaged only 5 and 7 percent adoption at the 6-month and 1-year mark, respectively.

Clearly, electronic communication can have a significant impact on adoption rates.⁵ Since barriers are relatively low for an employer-provided website for financial advice, the results seem to corroborate the “path of least resistance” hypothesis. They also support the hypothesis that employees simply do not take much time to think about retirement. It is hard to believe that the signaling mechanism is somehow dramatically stronger for an employer that offers online advice and allows electronic communication as compared to one that simply offers online advice.

Data from Financial Engines participant satisfaction surveys also corroborate the lack of time hypothesis. While these surveys dealt with many issues, they are very interesting for examining the question of non-adoption. Table 11-2 reports results on non-adopters in three recent surveys. The

TABLE 11-2 Non-Adopter Survey Results

<i>Reasons why have not tried FE</i>	<i>Survey Date</i>		
	<i>June 2001</i>	<i>March 2002</i>	<i>June 2002</i>
Didn't know it was available			
as an employee benefit (%)	25.1	48.6	37.8
Haven't had time to try it (%)	53.3	33.3	43.3
Don't think I need help with my			
investments (%)	3.8	3.5	3.7
Don't want to use an Internet-based			
service (%)	4.8	2.4	3.9
Other (%)	13.2	12.3	11.4
Non-adopter (number)	827	869	1,787

Source: Authors' computations.

11 / Retirement Security in a DC World 213

results are remarkably consistent across waves: between one quarter and one half of the non-adopters surveyed indicated they did not know the benefit existed. An additional one-third to one half indicated they just had not found the time to try the Adviser. Averaging across all surveys, lack of time is reported as the single largest barrier. Interestingly, fewer than 5 percent listed the reason as not needing financial advice, and a small similar number indicated they were unwilling to use the Internet.

If convenience can have such a large impact, it implies that many participants are simply unwilling to spend time planning for retirement. These results are broadly consistent with MacFarland, Marconi, and Utkus (Chapter 6, this volume), who find that many people are “disinclined to be interested in the key activities or attitudes needed to make informed choices.” Their analysis suggests that one-third or more of the working population may be avoiding thinking about retirement issues.

The survey results, and the prominence of small barriers, imply that providers must either improve convenience or eliminate the need for participants to proactively go online. Two approaches have been explored to incorporate these insights, one involving improving communication and convenience through enhanced provider integration, and a second which removes the online barrier altogether, by repackaging information available in the Adviser service in an offline format like a Personal Statement. Our data are still preliminary, but indications are that both approaches can enhance the reach of advisory services.

Provider Integration

Though electronic communication does seem to enhance adoption, sending information via email has two significant shortcomings. First, some employers will not or cannot communicate with their employees via email. Second, participants who receive an email communication may not be interested in delving into their retirement planning when they get the email at work. For these reasons, provider integration is one form of electronic communication that overcomes both of these shortcomings.

Provider integration can mean a variety of things. When participants use a 401(k) provider website, they usually check their account balances, update their contribution rates, or adjust their investment mixes. In its simplest form, provider integration means alerting a participant to the availability of financial assistance at a relevant juncture so participants who are updating their investment mix could be asked if they would like to view the recommendations from the advice provider. Or participants who are updating their saving rates could be presented with an analysis that illustrates the impact of increasing saving on retirement wealth. The appeal of provider integration is that it overcomes the two main weaknesses of email communication. Even if a company does not actively communicate with employees

214 Jason Scott and Gregory Stein

electronically, many of these employees will still visit provider sites to maintain their accounts. Also, offering an analysis when the participant requests a change ensures that the participant has at least overcome the mental barrier of finding time to update his 401(k).

We have recently launched a pilot version of a provider integration approach which links to the Adviser, conducted at a Fortune 500 company. The pilot was started when roughly 9 percent of participants had adopted the Adviser service, several months after making the Adviser available. Projections suggested that the likely adoption rate after another year would have been 14 percent, assuming no other communication programs. Just 3 months into the pilot, adoption had risen from 9 to 13 percent, a 44 percent increase, and adoption expected to exceed 20 percent, a year into the pilot. It should be possible to enhance rates further, since participants currently must accept an Investor Services Agreement during the transfer from the plan provider to Financial Engines, yet some participants fail to do so. A small adjustment to this practice could have a significant impact on the number of participants that receive advice. Importantly, the potential improvement would be greatest for sponsors without electronic communication, since "path resistance" is dramatically reduced for their employees. Further, since provider integration levels the playing field between sponsors that do and do not allow electronic communications, it provides an opportunity to test the hypothesis that electronic communication results stem from sponsor selection bias rather than a differential effect from the communication method.

Personal Statements

Another approach to improving reach is Personal Statements, which eliminate the online barrier by offering much of the information in a paper format. The benefit of this approach is that participants need not actively request an online financial analysis; instead, participants are mailed, or emailed, a Personal Statement for their own 401(k) plan. The statement provides each participant with a retirement forecast, and also illustrates how the participant could improve his retirement situation through saving more, diversifying, etc. since Personal Statements are relatively new, first released in 2002, little data are available to date. Table 11-3 reports some initial survey information collected by a company currently using Personal Statements, which indicates that about two-thirds of the participants can recall receiving a Personal Statement. This represents a substantial increase in reach, relative to the Online Adviser.

Changing Participant Behavior

Reaching the participant satisfies the employer's disclosure requirement, and it also provides useful information to help him make informed decisions. In

11 / Retirement Security in a DC World 215

TABLE 11-3 Personal Statement Survey Results^a

	<i>Responses (%)</i>
<i>Recently, you were sent a Personal Retirement Forecast^b from your employer. Do you recall receiving your Personal Forecast?</i>	
Yes	66.2
No	17.6
Not sure	16.2
<i>Since reviewing your forecast,^b have you made any changes to your 401(k) account (such as increasing your savings or changing your investments)?</i>	
Yes, I have already made some changes.	16
No, but I plan on making some changes.	52
No, I do not plan on making any changes.	32

Notes:

^a 3,138 surveys were mailed, and 142 were completed and returned.

^b "Forecast" in this context refers to the Personal Statement.

Source: Financial Engines.

addition, some firms seek to change participant behavior to improve actual retirement security.

Behavioral finance, as a field, is concerned with understanding the behavior and biases of individuals as they relate to financial decisions. In the present context several studies are relevant. For instance, Iyengar and Lepper (2002) examine the relationship between the number of choices offered to consumers and their resulting decisions. They found that extensive choice attracted more attention, but that limited choice motivated actual purchases in a food context. Iyengar, Huberman, and Jiang (Chapter 5, this volume) relate the impact of choice to 401(k) participation. They show that the number of fund choices negatively influences the participation rates after controlling for a number of other factors. This is probably because a large and confusing number of choices may create a barrier sufficient to discourage participants from enrolling in the 401(k).

The Adviser Redesign

To test these ideas, Financial Engines redesigned the Online Adviser in late 2002. The major change was how choices were communicated to participants. Prior to the redesign, the participant was given a range of choices for each of the major retirement decisions: Saving, investment risk level, and allocation to company stock. For example, suppose a participant was currently contributing \$2,000 a year to his 401(k) plan. Prior to the redesign, the participant would have been encouraged to choose from five potential saving levels: (\$0, \$2,000, \$3,000, \$5,000, and \$10,000). The impact of the

216 Jason Scott and Gregory Stein

retirement forecast was described for each level of saving. A participant also could input his own level of saving if his was not one of the five choices given.⁶

The redesign completely changed this framework. Instead of offering a range of choices, the participant is now provided with a single alternative to consider. Continuing with the saving example, suppose the employer matches employee contributions up to \$3,500 for this participant. In that case, the initial saving choices would be limited to staying at the worker's current level of saving (\$2,000) or switching to a level of savings that fully utilized the employer match (\$3,500). A wider range of choices was still available, but the participant had to actively request the range. For each of the major retirement decisions, the redesign presented a single focal alternative and concentrated the participant's attention on the binary decision of staying where he was switching to a single alternative.

Another part of the redesign involves the Advice Action Kit (AAK), a screen in the Adviser service that summarizes changes between the participant's current situation and the new strategy he or she has selected. The AAK is a strong measure of impact, because it is only requested to facilitate implementation. It is not interactive, and it is rendered as a printable list of instructions necessary to implement the plan. For this reason, AAK data is believed to represent a serious retirement plan on the participant's part.

Our analysis of over 34,000 AAKs roughly split between pre- and post-redesign, appears in Table 11-4. The top row 4 reports results for the saving

TABLE 11.4 AAK Analysis

<i>Action</i>	<i>Percentage of Sample (Prior to Redesign)</i>	<i>Percentage of Sample (Post-Redesign)</i>	<i>Sample Size</i>
Save more ^a	31 ^b	45 ^c	24,040
Adjusted risk ^d	35	51	33,427
Reduced stock, full sample ^e	14 ^f	30 ^g	34,589
Reduced stock, initial stock level > 0%	28 ^f	60 ^g	17,412

Notes:

^a Approximately 6% of the sample decided to save less in both cases.

^b Median saving increased from \$3,240 to \$5,468 per annum.

^c Median saving increased from \$2,700 to \$5,551 per annum.

^d "Adjusted Risk" implies a change in portfolio volatility in excess of 5% of market volatility. (~55 bps as of April 2003).

^e Less than three percent of the sample actually increased company stock in both cases.

^f Median ending stock allocation is 37%. Median stock reduction was 69%.

^g Median ending stock allocation is 28%. Median stock reduction was 82%.

Source: Authors' computations.

11 / Retirement Security in a DC World 217

decision.⁷ Prior to the redesign, 31 percent of the sample decided to save more, and after the redesign, 45 percent were saving more. In addition, while ending saving levels were comparable, the increase in savings was about \$500 more in the post-redesign sample. The redesign also influenced the number of participants willing to change their investment risk level. Prior to the redesign, about one in three participants created an action plan with a materially different risk level from their original portfolio. After the redesign, this proportion increased to one in two.

The largest change perceived related to the company stock decision. Prior to the redesign, 14 percent of AAKs identified a desire to reduce company stock; after the redesign, this proportion increased to 30 percent. The magnitude of proposed changes also increased after the redesign. Before, the median ending level of company stock was 37 percent and after the redesign, the median ending stock allocation was 28 percent. The company stock results are somewhat understated, in that only half the available sample actually started with a positive amount of company stock. Limiting the sample to these participants, the fraction that reduced company stock pre- and post-redesign was 28 and 60 percent, respectively. This evidence corroborates the hypotheses that fewer and more direct choices are much more likely to generate action, compared to “choice overload.”⁸

The pilot also allowed us to explore the effectiveness of this approach on changing participant behavior via provider integration. Preliminary data indicate that it is very important to be able to process fund transfers and savings adjustments directly from the Financial Engines website, without having to print the instructions and then go to the provider website to effect the change. In 3 months of data available from the pilot, the transaction incidence is *five times* higher for participants using the integrated approach as compared to those using other sources.

Limited survey data are also available to address the reach of Personal Statements, shown in the lower panel of Table 11-3. The results prove interesting. Of those surveyed, 16 percent had already made a change, and another 52 percent intending to make a change to either their saving level or investment mix. Of course, there is a gap between intending to make a change and actually making a change, when self-control and procrastination problems play a significant role (Benartzi and Thaler, 2004).

Conclusions

Our research shows that communication methods can alter fundamental life decisions such as saving and investment levels. We corroborate this by examining the likelihood that employees utilize an employer-provided online advisory benefit. We find that employees who receive an email regarding the availability of the advisory service are much more likely to use it, than to those who receive a hard copy version in the mail. Also we

218 Jason Scott and Gregory Stein

find that the reason participants do not avail themselves of the service is primarily due to lack of time, since they readily admit the need for help. We further explored the impact of a redesign of the online advisory service. Reducing the number of choices employees were given from five to two increased by 40–100 percent the frequency with which individuals altered their behavior. Last, we evaluated data from a pilot version of provider integration, which reduces the barriers to action by offering services when individuals are most likely to be receptive. We find that lower barriers are associated with roughly double the adoption rate, and roughly five times the action rate.

Clearly, there is still work to do to help ensure retirement security in DC plans. Nevertheless, we conclude that insights from behavioral finance can have a large real-world impact on the decisions people make, and ultimately on their retirement well-being.

Notes

¹ Discretionary asset management may also be useful for addressing the needs of many investors with little time for or interest in investing, but our focus is not that market.

² Integrating the forecast on the provider website could overcome this constraint.

³ One company was excluded from the analysis because participants were required to enter credit card information prior to adoption. These “participant pay” arrangements are no longer offered because the barriers were too large for participants to reasonably overcome.

⁴ In some situations, participants first have to create an account with their plan provider before using the Adviser.

⁵ We acknowledge that, the fact that a sponsor allows electronic communication could proxy for other factors influencing adoption. For example, those sponsors may be more likely to have an Internet-enabled workforce, or they may have a higher percentage of white-collar workers.

⁶ The saving level choices were selected to be “focal” in some way. Typical choices included the participants’ current saving level, a level that exhausted the employer match, and the maximum saving level allowed.

⁷ All AAK data is not available since easily accessible AAK logs have only recently been created. In addition, not all AAK logs have complete saving information.

⁸ Fund transactions and savings adjustments are enabled directly from the Financial Engines website (without having to go to the provider site) for a few providers. The “transaction enabled” AAK data corresponds to approximately a 5% subsample. Results from this subsample did not materially differ from results in Table 11-4.

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11 / Retirement Security in a DC World 219

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