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This is Part I of a three-part series on sales force management written specifically for the sales rep audience. Part I focuses on sales force sizing strategy, Part II on territory alignment, and Part III on incentive compensation.

Introduction

What sales force strategy your company deploys impacts your life profoundly and on a daily basis. A sales force expansion, for instance, means you will have a smaller territory along with lost relationships and accounts, not to mention a potential blow in your ability to make money, or on a brighter note that district manager promotion position you’ve longed for. If your company signs up a contract sales organization, you may lose the privilege of being the only one to call on your top physicians and accounts. A co-promotion agreement, depending on the terms of the deal, could mean you have to synch your call activity with your co-promotion counterpart. Because of the immediate bearing of those decisions on your everyday life, you owe it to yourself to understand what HQ goes through when articulating and deploying a sales force strategy. This article starts off with a discussion on the elaboration of a sales force sizing strategy. It then describes approaches companies use to establish the optimal sales force size. In conclusion, it discusses current research issues related to the indirect impact of promotion (e.g. spillover) and the translation of a sales force strategy into a call plan.

The quintessential question of the sales force strategy is deceptively simple: how many reps does the company need to deploy? Too small a number means your company could have garnered larger sales and earnings by being more aggressive. This is clearly the case of untapped opportunity or money left on the table. Too large a number means your company would have fared better financially by carrying fewer reps. This is the case of operational inefficiency bordering on the white elephant syndrome. As one would expect, the right answer lies somewhere between the two.

What muddies the picture here is the asymmetry between the two situations. If the ideal size is overshot, it will be clear that was the case. All one has to do is to identify the low performers and show that getting rid of them directly benefits the bottom line. Wall Street analysts will be quick to hold management accountable for its “poor judgment”. If, on the other hand, the ideal size is undershot, this will be much harder to ascertain. The onus is on the one who makes the untapped opportunity claim to establish that had the company increased sales force headcount, sales and earnings would have been much better than currently reported. The corollary is: Since management gets punished for being aggressive but gets away with leaving money on the table, management is indirectly encouraged to err on the conservative side.

Why is it then, you may ask, that the pharmaceutical industry is carrying larger and larger sales forces? Indeed, Lilly recently announced it will be expanding its WW sales force by 5,000 people while Takeda and Sanofi-Synthelabo are almost through with their sales force expansions. GSK holds the top spot with 8,000 reps in an industry that counts more than 70,000 reps. The answer
to the expansion question is simple and has nothing to do with the asymmetry discussed above: Sales forces are huge to ensure significant share of voice. Indeed, one needs to raise one’s voice to be heard in a crowded marketplace.

**Defining the Sales Force Strategy**

Sales force strategy is a popular and recurring theme on the management’s agenda, either because it is budget time, or the company portfolio and/or marketplace are undergoing changes (product launches, new indications, product recall, patent expirations, M&A consolidation, non-renewal of partnership agreements, etc.) that are invalidating the very premises of the current strategy and probably making it obsolete.

The sales force strategy management devises has to have three attributes. First, it must fully leverage the sales force. Second, it must be financially sound. And third, it should make sense from a big picture standpoint. Let’s address each attribute in turn.

**Attribute #1: Leverage The Sales Force**

The sales force is a formidable tool. Depending on how it is wielded, it can make or break a company. Knowledgeable and enthusiastic reps are ultimately those that fend off competition, conquer new accounts, and build customer relationships. It is a well-known fact that reps create sales, albeit not overnight. How many times have sales analyses correlated the appointment of an outstanding rep with the stellar performance of his/her territory one or two years later? Indeed, management has to identify opportunities, obvious and not so obvious, and deploy reps accordingly.

To fully leverage the sales force, however, management has to have a very good understanding of the relevance and limitations of the sales force especially with respect to the broader palette of promotional channels available. Although the sales force is an effective way to get physicians to write prescriptions, in many instances, however, other channels may be more appropriate. A dinner meeting followed by a peer discussion may help get the undivided attention of the physician for half an hour or more. A free ticket to a major sports event will probably improve the rapport between the rep and the physician. In other instances, deploying details in conjunction with other media may prove even more powerful, the obvious case being sampling. DTC has been playing a growing role since its inception in 1997. This is the pull component of what marketers call the push-pull equilibrium (the push component refers to the rep promoting the product to the physician). Indeed, consumers exposed to medicine ads (popular ones include allergy, osteoporosis, erectile dysfunction) do ask their physicians for the drugs they saw on TV. More recently, e-detailing has been gaining ground although their exact role is still being debated. Some people regard e-detailing as a novel vehicle to reach the difficult-to-reach physicians in the traditional setting. Others view e-detailing physical as a means to communicate technical and content-heavy information (e.g. results of ongoing studies) that the rep can refer to during subsequent visits.

**Attribute #2: Financially Sound**

That the sales force strategy needs to make financial sense is almost a tautology. At issue are two fundamental questions: first, the financial yardstick, second, what is actually measured.

Let’s start with the financial yardstick. Ultimately, what is management after? Is it revenue or profits? If the knee-jerk reaction is both, then the real question management has to come to grips with is: To what extent should the company sacrifice bottom line for penetration, market share growth or volume? This is a profound question, the answer to which will determine what the company becomes and stands for. On the one hand, there are companies like Pfizer that have clearly taken the top line route and will outspend any competitor to maximize exposure of their
products. Parenthetically, studies of the PIMS database (Profit Impact of Marketing Strategies) found out the best predictor of profitability is market share, i.e., big is desirable. On the other hand, there are companies like Schwarz Pharma that have chosen the immediate profit path and will ensure top line is never achieved at the detriment of bottom line. Companies that pursue such a strategy may quickly turn into niche players.

One of the great insights of finance the last century is that the value of an asset is not only the net present value (NPV) of the cash flows associated with it but also the options embedded in it. By the way, that fueled a lot of interest in the relatively new field of real options whose endeavor is to valuate real assets, say an oil or gold mine, using financial option valuation theory. Here is an example from the sales force world. Take a 250-rep specialty sales force for instance. Not only does that sales force allow the company to generate significant sales (may be at the expense of profits) but also gives the company the option, being a credible player in that therapeutic area, to co-promote products of other players and be financially rewarded for doing so. Had the sales force been significantly smaller, the company would not have been able to attract a co-promotion partner to start with. Ironically, in many instances, the option value happens to dwarf the cash flow stream. The corollary of this observation is the yardstick is not necessarily limited to tangible metrics such as revenue, profit, market share, growth, but can and should also include less tangible things such as brand name, reputation, ability to strike deals, or acquire other companies, and so on.

Let’s get back to our discussion on bottom line and raise some of the questions management has to face. What is the meaning of bottom line? Oftentimes, bottom line is taken to mean marketing contribution, i.e., revenue minus cost of goods sold minus promotional expenses. But it may mean something different, and that’s fine provided there is consensus. If we are looking at a non-US company that ships its products to the US, the company may artificially inflate its COGS, report smaller profits in the US, and pay less taxes to Uncle Sam. In hammering out its strategy, the company can either use real COGS (our recommendation) or domestic COGS. Note the latter will lead to a more conservative approach since inflated COGS depict a bleaker picture. The other important question management has to debate is the term of the return. Should the strategy yield returns in less than a year, over three years, or over five years? Because a one-year strategy requires the investment to bear its fruits shortly after, slower yield opportunities regardless of magnitude will be shunned. A 5-year term strategy, on the other hand, opens the door to potentially more rewarding opportunities but may place financial burden on the P&L in the short-term. In sum, to what extent is management prepared to sacrifice the short term for the long term? The answer is difficult. This is compounded by the fact that analysts place heavy emphasis on quarterly earnings and dismal results may earn the CEO the boot.

The second fundamental question is what is actually being tallied is just as important as the yardstick itself. The object of measurement ranges from the product on one end of the spectrum to the product line (multiple dosage strengths and formulations) to the therapeutic franchise to the company itself on the other end of the spectrum. Defining the target as the product has the benefit of focus. The flipside, however, is halo effects may be left unaccounted or poorly accounted for. Consider the classic case of the ACE-I/diuretic pair where the promotion of one drug benefits the sales of the other and vice versa. The opposite case where promotion of one drug (e.g. new drug) cannibalizes sales of the other (e.g. old drug) is as compelling. In both cases (synergistic and cannibalization), one may be better off aggregating the products for the purpose of the analysis. In other instances, it may be very appropriate to monitor the performance not of a product, but of the whole therapeutic franchise or company.

**Attribute #3: Make Sense In The Larger Scheme of Things**

For the strategy to make sense, it has to fit in the larger scheme of things.

Here are a few obvious blunders one needs to avoid. Hire a large number of people and fire them just one year later. However attractive this scenario may be financially, which is doubtful, it is blatantly wrong. Employee moral is bound to take a blow and the best reps are most likely to jump
ship in anticipation of another round of layoff, let alone the dismal signal sent to the industry. As a general rule, one is better off staying away from roller-coaster strategies.

Here is another one: Implement a steep and overnight ramp-up of the sales force. This leaves no alternative to HR but to trade quality for quantity by lowering the bar. Let loose in the field, those below-par reps can cause a lot of damage. First, product recall of physicians falters because of the spotty product knowledge of the reps. Only a few months later, the blunder deals its fatal blow: sales plummet, market share vanishes and important accounts defect.

At some point, sales force strategy is just a number game. Indeed, the more reps a company deploys, the more likely physicians will prescribe the detailed products. This is simply because those reps get to see more physicians, more often. Consider the relevant situation of a pharmaceutical company caught in the middle of such a sales force expansion frenzy. What should that company do? The blunder here is not that to refuse to jump on the expansion bandwagon (expansion is expensive and may hurt profitability irremediably), but to continue business as usual in that louder marketplace. Headcount neutral here means fainter share of voice.

If expansion is not a viable option, the company needs to be more creative to thrive. Start with the quality of the detail. Give the reps more ammunition (pertinent brochures, study highlights, samples of appropriate strengths). In a nutshell, make sure the rep has a story to tell and that story is educational, new, and fun. Another line of attack consists of wielding/meshing other promotional instruments more deftly: sampling, meetings and events, physician education, e-detailing, etc. Reviewing the managed care contracting & rebate policy, the territory alignment, or the incentive compensation programs is certainly another route worth exploring. A more subtle and creative tactic consists of gauging the battle upstream of the detailing world by beefing up clinical studies and enrolling physicians for those studies. Physicians involved early on are more likely to prescribe. So much the better if they happen to be opinion leaders! Indeed, besides the influence they have on their peers, medical thought leaders tend to form an opinion well before product launch, which means they can jumpstart a good drug with average promotional backing.

Sales Force Sizing Techniques

Oftentimes, sales force sizing is taken to be a matter of opinion as illustrated in the excerpt below. Despite the magnitude of what is at stake, many unconsciously refuse to give the problem the attention it deserves: creative thinking, in-depth analysis, and systematic modeling.

Jack, VP of sales, is adamant 550 is the right number because this is what the largest player has. With fewer reps in the field, he will be outnumbered and will not be able to deliver the aggressive sales objective he has been given. Jill, VP of marketing, feels this is an overkill. With half that number at 275 reps, the company can achieve the same presence with the deciles 10-7 physicians, which represent 75% of the scripts. She figured out she will need only half of the $40 million or so thus saved, and will be able to profitably invest in focus groups, patient education programs, community initiatives, PR among other things. Jane, director of sales operations, is wondering why she is having a hard time convincing her colleagues 417 is the right number. Indeed, at 1,200 calls per rep, she reasons, the sales force will be able to deliver 500K first position details. Assuming each detail generates 4 new scripts, this is 2 million scripts. Multiply that by $75, the average selling price of a script, and you get the $150 million the CFO is looking for.

The problem here is the team is not functioning as a team. The outcome of the discussion would be far more productive had the team members had a firmer grasp of the principles of sales force sizing. Below are the top techniques companies use to elaborate their sales force strategy.

**Technique #1: Affordability**

The affordability method is the least sophisticated of them all. It simply consists of investing whatever money the company can afford for the coming year. The good thing about it is it is easy to
follow and no one gets to be blamed if things go wrong. The bad thing about it is it is reactive, not proactive. It runs backwards and takes the company where it happens to take the company, not where the company ought to be.

Assessment: Probably good for a mom-and-pop store, certainly not fit a serious player in the healthcare industry.

**Technique #2: Workload Build-up**

Workload build-up evaluates the requirements by taking a first stab at the call plan: who needs to be called on and how many times? This approach addresses head-on what is known as the reach-frequency question, where reach refers to who needs to be visited (physicians, hospitals, clinics, free-standing facilities, etc.) and frequency the number of times in a year they need to be visited.

In a fuller version of the workload build-up, one will also specify the position of the detail. In general, the first position detail takes about 60% of the time of the call, the second position about 30%, and the reminder position about 10%. From a time standpoint, a first position [P1] costs twice as much as a second position [P2] (60% vs. 30%) and six times as much as a third position [P3] (60% vs. 10%). This suggests details may conveniently be expressed as first position equivalents [P1E’s]. For example, 100K P1’s + 250 P2’s + 900 P3’s are equivalent to 100K P1E’s + 125K P1E’s + 150K P1E’s = 375 P1E’s. Note the notion of P1E is related to cost, not to the psychological impact of the detail on the physician. Indeed, for older products, a reminder detail may have the same psychological impact as a first position detail. Because the reminder position is much less expensive, it makes sense to promote older products in lower positions.

Say the reach and frequency have been established. The number of details needed is simply the product of the two (reach and frequency). Now, each rep has on average a capacity of say 1,200 calls (200 days x 6 calls a day). The number of FTE’s (full time equivalents) as a result is simply the details divided by 1,200. In the example below, the workload build-up approach suggests deploying 220 FTE’s. If all details are given in the first position, this means a sales force of 367 reps, since each rep spends only 60% of his/her time promoting that product (220 ÷ 60% = 367).

<table>
<thead>
<tr>
<th>Audience</th>
<th>Reach</th>
<th>Frequency</th>
<th>Calls</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>12,000</td>
<td>12</td>
<td>144,000</td>
</tr>
<tr>
<td>2</td>
<td>8,000</td>
<td>9</td>
<td>72,000</td>
</tr>
<tr>
<td>3</td>
<td>8,000</td>
<td>6</td>
<td>48,000</td>
</tr>
<tr>
<td>Total</td>
<td>28,000</td>
<td></td>
<td>264,000</td>
</tr>
</tbody>
</table>

FTE \[= \frac{\text{Reach} \times \text{Frequency}}{\text{Capacity}}\]

**Targeting 28K physicians at a frequency of 6-12 requires 220 FTE’s**

Assessment: This is a very good first-stab approach. It is very popular because of its simplicity. The issue is, by its very nature, workload build-up focuses entirely on the “I” in “ROI” and is mute in regards to the “R”. It says nothing about return on investment, let alone optimality. It leaves important questions unanswered. What revenue and profit are be expected from a given promotional strategy? What detailing effort does it take to get to a 15% market share? If the detailing budget were to increase or decrease say by 30%, how would the top and bottom line be impacted? Another drawback of the workload build-up approach is it may easily be used to justify one’s a priori belief, not to question it.

**Technique #3: Competitive Benchmarking**

The impact of one’s sales force in the marketplace depends largely on the sales force strategy of the other players. Indeed, share of voice (SOV) may be more fundamental than actual promotional
effort. Consider a sales force of 500 reps. Clearly, that sales force will have a much greater impact in a market of 2,000 reps than in a market of 5,000. This is precisely the premise of the competitive benchmarking approach.

![Graph showing the relationship between SOV and MS for competitive products](image)

The relationship between SOV and MS of competitive products can shed light on the SOV-MS of our product

In essence, competitive benchmarking strives to explain MS through SOV. It starts off by mapping the historical SOV-MS evolution over time (known as trajectories) of the individual products and taking SOV-MS snapshots of the therapeutic marketplace at different points in time. There are basically two difficulties with this endeavor. First, SOV is just one factor to impact MS. Other important ones include the clinical profile of the drug, its indications and labeling, the number of years it’s been on the market, the stage it is in its life cycle, its patent/exclusivity status, its price, its formulary status, and its co-pay, etc. Second, meaningful SOV-MS relationships are not historical, but forward-looking. They have to embrace ongoing trends to allow us to get ahead in the game.

This approach yields the best results in a group setting. First, the group recalibrates the SOV-MS snapshots to even out differences unrelated to promotion. At comparable SOV’s, other things being equal, a newly launched drug will have a lower MS than a drug that has been out there for 10 years for. Likewise, the fact that a product has broad indications, a controlled release formulation, or significant off-label usage will tip the scale in its favor. The result of this exercise is a revisited snapshot that depicts how SOV drives MS in a world where SOV is the only driver of MS.

Second, the group forecasts the SOV-MS snapshot five years out in the future. This is extremely engaging since the group has to form an opinion regarding current trends, new entrants, sales performance of each drug, and promotional strategy of each player. Running different scenarios, by the way, in an excellent way to handle divergences in opinion. Once the forecasted SOV-MS map is established, SOV-MS relationships may be identified and questions answered. Here are the most typical ones. What SOV is needed to achieve a 20% MS in 3 years? What is the opportunity cost over the next 5 years of not ramping up the SOV to 24% today? What would be the windfall for us of competitor X trimming its sales force by 25%?

Assessment: This is a great approach because it forces the participants to take a step back, look at the larger picture, and ask the right questions about the marketplace. It has great educational value, is thought provoking, and generates insights. The scenario analysis component encourages participants to dissociate assumptions from implications, and as a result help depict a crisp picture.
Technique #4: Promotion Response Modeling

This approach zeroes in on sales response to promotion. The key observation here is that the law of diminishing returns prevails. First, doubling the number of physicians/accounts called on, especially when there already is good coverage, will not double sales. This is because reps start with the most productive physicians/accounts first. The physicians/accounts that are called on, as we expand coverage, are less and less productive. Second, doubling frequency, especially at high frequencies, will not double sales. The rep has nothing new to say and may even be perceived as a nuisance. Note this assumes the rep gets to see the physician at each visit, which is certainly not true.

Past the equilibrium point, the profitability starts to drop

The principle is very simple even though the mathematics may be a little involved: Increase promotional investment until the marginal benefit of the investment, say, as measured by the 3-year profit, is equal to the marginal cost of the investment. Past this point, profitability drops since the additional investment costs more than what it returns.

What needs to be maximized may not be profitability but market share. A company that focuses entirely on immediate profitability may end up being a niche player. The good news is incorporating market share in the model is easy. Instead of defining return as profit, we can define return as a (linear) combination of market share and profit, meaning what is valued is not only profit but also sales. The principle is the same: add promotional effort until the return, here a combination of sales and profit, is equal to the cost of the incremental investment.

Return can be defined as a combination of sales and profit

How are the response curves established? Typically, through structured group discussions called Delphi sessions. Participants typically range from 5 to 20 with representation from product
management, sales, marketing, finance, managed care, sales operations, etc. The Delphi format was invented during WWII to tap into world-caliber experts regarding complex and intricate matters. The value of the Delphi comes from the interaction of the participants. During the session, the group comes up with ideas no individual thought of earlier. When probed to explain their views, participants are forced to clarify and articulate their positions, which results in better ideas. In short, the Delphi circumvents the single-user bias and taps into the collective wisdom of the group.

From a practical standpoint, the group is asked to estimate sales at different levels of promotion. This exercise is repeated for multiple years and drugs in the portfolio. The group is supplied with facts, charts, and analyses. On-line databases are brought in to answer questions the participants raise. Historical response curves are a great source of inspiration. They combine physician-level detailing activity (company call file) with prescription-level data (IMS Xponent or NDC Prescriber). Just like in the competitive benchmarking approach, participants are asked to guessimate how promotion responses change over time (product life cycle, market dynamics, etc.). The end result is a few points on the promotion-revenue graph, to which an exponential-like curve is fitted. Further treatment of those curves allows more relevant return-investment curves to be deduced. Straightforward mathematical analysis allows things like optimality and marginal returns to be established.

Assessment: This approach provides a rigorous framework to the whole sales force sizing strategy issue. It is excellent for establishing optimality and evaluating what-if scenarios. It nicely handles portfolio optimization questions along with a wide variety of top/bottom line, ROI, and NPV questions. The Achilles’ heel of this approach is the response curve whose construction may fall prey to the GIGO principle (Garbage In Garbage Out). In that regard, we have developed a response curve building method that in essence aggregates individual physician response curves. For more information on this approach, refer to “Micromarketing: An Individual Approach” by J.P. Tsang, Pharmaceutical Executive, Dec 2002, pp 58-60.

**Technique #5: Recommended Technique**

The approach we use and recommend is a combination of techniques #2 (workload build-up), #3 (competitive benchmarking), and a variation of #4 (response-based modeling).

Workload build-up is relevant because it addresses the question of targeting head-on. Competitive benchmarking breathes breadth and substance to the analysis by taking a step back and analyzing the bigger picture. As for promotion response modeling, it is an outstanding analytical framework, except for the construction of the response models which may at times be subject to GIGO. This is what prompted us to develop an aggregation technique (in essence, that technique combines individual physician promotion responses into a macro response model) that ensures the response curves are anchored in reality, thereby leaving little room for error.
Sales Force Sizing Research Issues

There are of course many issues, but two clearly stand out. First, the impact of promotion may be indirect, making it more difficult to measure. Second, the translation of the sales force strategy into a call plan may have to compromise the spirit of the strategy.

Issue #1: Indirect Phenomenon

Consider a detail to a medical thought leader. The called-on physician may not prescribe the drug but may interact with other physicians that do. Just because the called-on physician does not prescribe the detailed drug, this means detailing that physician is worthless. Conversely, just because a physician prescribes a drug does not mean the physician is worth calling on. This is common in the patient referral setting. The generalist does not initiate the prescription but refers the patient to a specialist who makes the prescription decision. The patient goes back to the generalist who subsequently prescribes the same drug the specialist initiated. Clearly, the one worth detailing here is the specialist, not the generalist. Yet, a face-value analysis of the prescription volume would suggest otherwise.

It is that same indirect phenomenon that is at work for what is known as spillover or halo effect. Detailing to hospitals may have a larger impact than one may suspect at first. Indeed, several hospital physicians have a private practice. As a result, detailing to such a physician will generate not only scripts for the hospital patients, but also scripts for patients of his/her private practice. Ignoring such a phenomenon would amount to leaving money on the table since that would translate to a less aggressive hospital detailing.

We can also see the indirect principle at work in the managed care setting. Managed care plans use formularies to control access to expensive drugs and physicians are affiliated with 6-7 plans on average. The interesting observation here is the prescription habit of the physician is influenced by the most restrictive formulary. As a result, the physician will prescribe according to the most restrictive plan for patients affiliated with that plan, which is the intended effect. The pervert effect, however, is the physician may still prescribe according to that same plan for patients that pay out of pocket (cash spillover) or are affiliated with more lenient plans (plan-plan spillover). The implication is signing up those high control managed care plans is more rewarding than what one may think.

The indirect phenomenon is also at work between drugs. It is called synergy when promotion of one drug leads to increased sales of the other (complementary products) and cannibalization when it leads to decreased sales of the other (substitution products). Because of synergy/cannibalization, the impact of promotion may be larger or smaller than what a compartmentalized analysis would suggest.

Most approaches model the indirect phenomenon as an add-on to the core model. The problem is underlying phenomena such as information diffusion or delayed impact do not get the treatment they deserve.

Issue #2: Translation into Call Planning

Translating into a call plan a strategy that recommends heavy promotion of a drug may sometimes be an issue. This is the case when there is only one drug to promote to that specialty (very expensive). One response consists of carrying other drugs of questionable relevance to that specialty. The rationale here is detailing to that specialty is a sunk cost anyway but has the potential of generating additional sales. Another bolder response consists of striking a co-promotion agreement and detail the partner's compound (preferably synergistic) in a the second position to that specialty. More work is involved, but so is the upside.
Consider another situation where two products are to be promoted to one specialty: drug A at 200K details in the first position and drug B at 300K details in the second position. A literal implementation with 300K calls would lead to a waste of 100K in the first position! A quick fix consists of promoting A at 300K instead. The question is: Do the incremental sales due to another 100K details of B on top of 200K details worth the cost of an additional 100K calls? This may suggest instead cutting back on B and promoting A and B at 200K. A middle-of-the-road compromise would recommend promoting A and B at 250K. At any rate, the initial strategy is flawed.

Consider now a slightly different situation where a third drug C is to be promoted to the same specialty along with A and B. Just like B, C requires 300K in the second position. Just like in the situation above, a literal implementation is out of the question. Unlike the situation above though, there are more creative ways to address the problem. Pulsing is one of them: In one promotion cycle, B can be detailed in the second position and C in the third position and in another, they can be flipped: B in the third position and C in the second.

The current approach to the translation of the strategy into call planning issue is scenario analysis: Several implementations are considered and the best one is picked. However, there is no guarantee the best implementation will be considered let alone selected. In our opinion, automated generation of implementations is the way to go.