

The Dynamics of Rivalry

Kim Warren

Firms face a constant challenge to understand and manage competition over time: what to do when and how much, for how long, and with what expected effect. In this battle, managers use resources they already have to develop the further resources they need, faster and more sustainably than competitors. Just three forms of rivalry capture the dynamics of these processes: developing potential customers, capturing rivals' customers and competing for sales to shared customers. Each of these applies not only to customers, but also to other assets that must be won against rivals. In complex industries, interactions between many competitors can be simplified by grouping firms together, and industry evolution and scenarios for the future can be evaluated using extensions of this approach.

The strategy field of knowledge has long had much to offer managers wishing to understand a firm's performance relative to competitors (see, for example, Porter 1980, Grant 1995 and de Wit and Meyer 1998). Within this wide field, the resource-

based view of strategy (RBV) has extended understanding of competitive advantage to include the firm's resources or 'strategic assets', moving the strategy debate beyond the largely financial concerns of cost and value (Collis and Montgomery 1995, Wernerfelt 1984). Alongside RBV, game theory has provided new understanding of competitive interactions. A step towards true dynamics has resulted from representing sequential moves and counter-moves on issues such as pricing and advertising levels (Dixit and Nalebuff 1991, Brandenburger and Nalebuff 1995). However, executives typically find game theory hard to apply to the richness of practical competitive situations that feature real-world rivalry on multiple dimensions.

Efforts to capture the true dynamics of competitive rivalry (ie to explain and manage progress through time) include extending established micro-economics approaches (Porter 1991), the development of competence-based concepts (Prahalad and Hamel 1990, Schoemaker and Amit 1997, Sanchez et al 1996) and use of scenario-planning methods (Wack 1985, Schoemaker 1995).

The Dynamics of Resource-based Advantage

One particularly promising feature of RBV which may provide a key to progress is its inclusion of mechanisms that can operate only insofar as competing firms interact through time. Whilst an organisation may often copy, sustain or purchase resources with little direct interference from actual or potential rivals, developing or capturing them from others inevitably brings firms into conflict with competitors (Grant 1991, Peteraf 1993).

In an earlier article (Warren 1999), I built on these features of RBV, and defined a 'dynamic resource-system view' (DRSV) of firms' strategic architecture to show how performance over time can be understood and managed only if certain fundamental principles are captured.

- Performance at any moment is largely determined by resources the firm owns, or to which it has access, within the limits set by external market conditions.
- All resources (useful items, whether tangible or intangible) share a characteristic that makes their behaviour tricky to understand – they accumulate and deplete over time (Amit and Schoemaker 1993, Dierickx and Cool 1989).
- Each resource can be built or sustained only by using other resources already in place, creating inescapable feedback within the firm's resource-system. Such feedback can accelerate or constrain growth, leading to complex patterns of performance over time.

Management's task, therefore, is to design a strategic architecture that can build, powerfully and sustainably, the resources needed to deliver strong performance. However, rivals are constantly attempting to achieve precisely the same resource-building goal, so it follows that the dynamics of competitive performance must be played out largely in rivalry for resources.

Three forms of rivalry

Work with a wide variety of organisations has identified that, viewed from a resource-system perspective, rivalry takes just three forms:

- Developing potential customers
- Capturing rivals' customers
- Competing for sales to shared customers.

Each of these will be described below. A further form of rivalry may arise when firms use their understanding of a rival's resource-system to unpick its architecture and inflict damage. However such efforts are rarely undertaken without some desire to gain from the competitor's misfortune, a feature that is covered by the three principal mechanisms.

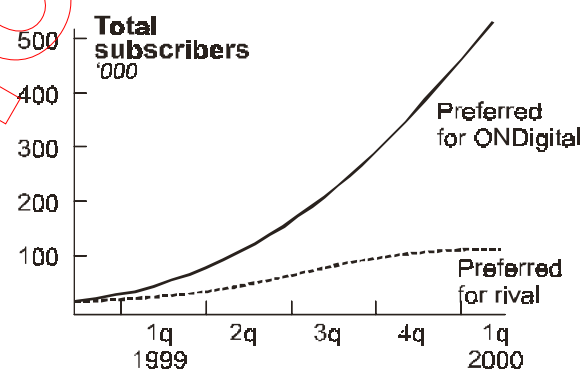
Whilst competition in the market-place is where victory or defeat generally becomes apparent, firms must also compete for access to non-customer resources, such as skilled staff or supplier capacity.

Case example: 'TV wars'

The UK broadcasting industry has recently seen the launch of digital TV services via terrestrial transmission. One such company, ONdigital, is engaged in a race to win the potential subscribers for this new form of service before its major satellite-based rival BskyB (Sky) can convert its viewers to digital. Digital TV offers many channels, and terrestrial services are received through normal roof-top aerials.

Though virtually all households receive conventional terrestrial services, and many already subscribe to satellite services (notably from Sky itself), a potential population may still wish to switch to digital. Viewers are unlikely to subscribe to more than one such service, so ONdigital is engaged in a race to exploit the potential before Sky. Regrettably for ONdigital, the time-path preferred (by ONDigital) for its rival, shown in figure 1, is not emerging, with Sky already having passed a million subscribers.

Figure 1
Rivalry to develop digital TV



The three forms of rivalry apply equally to these other resources. This implies that non-commercial organisations – charities, public services, government and armed forces, for example – are not exempt from 'competition' simply because they do not operate in a product or service market. (Throughout this article, 'product' refers to both physical and service-based products.)

Type-1 Rivalry: Developing Potential Customers

It is sometimes recommended that firms should focus on developing new markets or extending existing ones,

rather than seeking to beat competitors (Kim and Mauborgne 1999). However, the race to accomplish such aims is itself a universal form of rivalry, since capturing resources denies them to others. A strategic resource, such as the subscribers for digital terrestrial TV in the case example above, takes the form of a 'stock' that accumulates and depletes over time while building a customer-base depletes another stock of potential customers (see Appendix and Warren 1999).

Type-1 rivalry takes the form of a race to drain the stock of potential customers faster than rivals can do. Potential customers flow into a developed customer-base for each rival (figure 2). Depleting this potential pool creates 'balancing' feedback, imposing limits-to-growth on both firms, and ultimately stopping progress altogether.

In figure 2, just two rivals (such as ONdigital and Sky) compete to win customers from a potential pool of two million people. Two outcomes are shown, in both of which the rival wins 3% of the potential pool each month – initially, 3% of two million, or 60,000 per month, as shown in the lower of the two central charts. This rate falls quickly, as both firms deplete the potential.

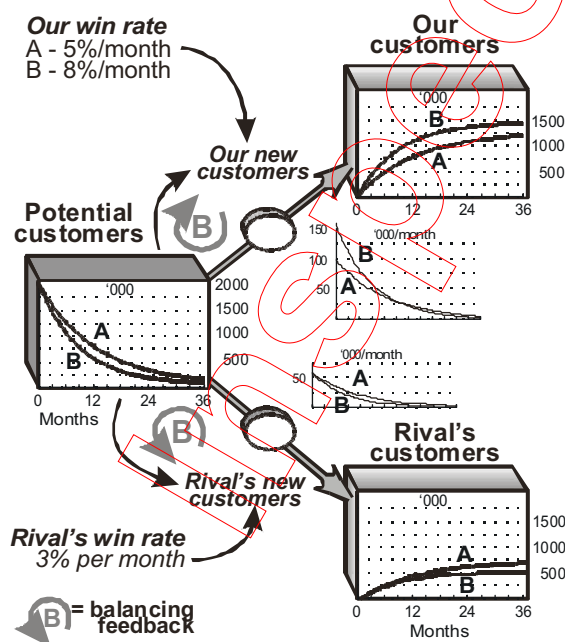
In outcome A, we win 5% per month (initially 100,000/month), whilst in scenario B we win 8% (initially 160,000/month). All other influences are ignored, such as where the potential subscribers came

from in the first place, and the impact of our rival's stock of existing customers.

Figure 2 captures the first part of the DRSV view of type-1 rivalry, and raises important issues:

- Since the stock of resource (customers) determines performance, and this stock can be influenced only via the rate of flow from the potential pool, competitive outcomes depend upon the relative win-rates – the fraction of the potential customer-pool each rival wins in each time-period.
- The initial rate at which the customer-base is developed can be rapid, but slows as the potential pool is depleted. This unavoidable effect is often ignored in strategic plans – firms commonly assume they can win customers at a constant rate until the market is used up. In practice, development rates may slow down still more quickly, since the most amenable customers will be taken up first.
- Growth of the rival's customer base depends not only on its own success, but also upon our win-rate. Capturing customers quickly not only builds our own resources, but also denies them to rivals.
- A point may well arise when a firm fails to win any customers, in spite of having an adequate product that would attract them, if it faced a similarly mediocre rival.
- The rate at which the potential market develops reflects the attractiveness of all rivals' products. Markets may fail to take off, not due to lack of interest from customers, but simply because suppliers have failed, collectively, to offer products that adequately fulfil that interest. The long-awaited dawn of video-on-demand services is a case in point.

Figure 2
Type-1 rivalry to develop potential customers



Factors driving customer win-rates in practice include price, marketing efforts, and the functionality of the product (eg how many channels the two TV services provide, and the attractiveness of their programme content). This mix of factors frequently confronts firms with fundamentally dynamic dilemmas, such as when to launch a product. Is it better to improve a product further and risk coming second, or launch as soon as the product seems ready and risk failure because it is not good enough?

To reflect fully this interaction between firms' respective products requires a clear understanding of customers' reactions to product acceptability. To complicate this judgement, the limit of product

acceptability is not static, but moves as customers' expectations adjust: so long as only modestly-attractive products are available, a product is tolerated; but when a significantly better product is introduced, firms offering the old standard fall behind in capturing customers.

Developing Potential Customers

Figure 2 assumed a static potential pool of customers, with rivals developing constant fractions of that pool each month. But feedback may cause self-reinforcing growth amongst customers (Warren 1999), and similar mechanisms can accelerate growth for entire markets. As customers begin to take up a novel product, the benefits they discover become widely known, and other customers take up the product. This replenishes the potential pool, thus supporting further growth for competing firms.

Industry-wide self-reinforcing growth may even recur in the same market. Mobile phone users, for example, have already taken up the early analogue services, have mostly migrated to digital networks, and will shortly migrate once more to the more

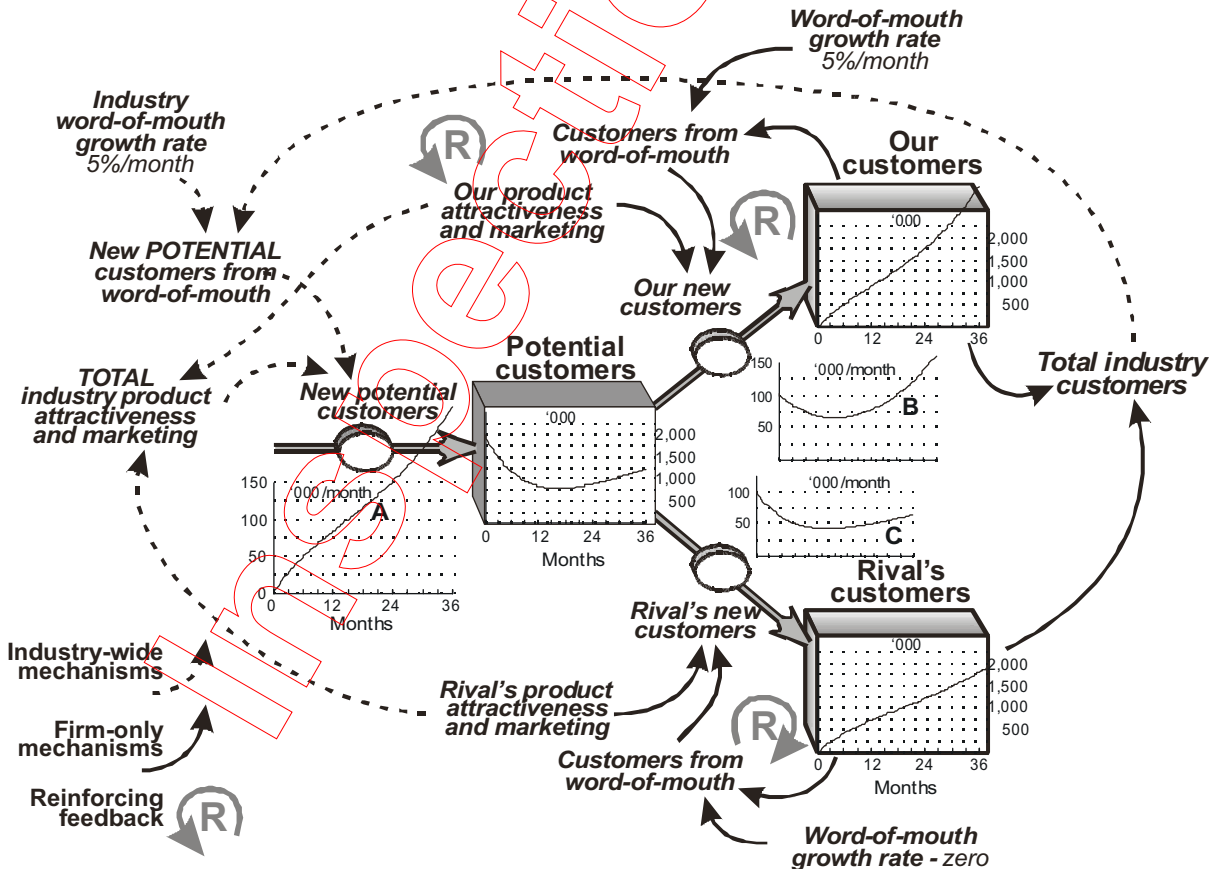
powerful UMTS standard. In each transition, early adoption rates are slow until the benefits become widely known, when potential interest and actual take-up both accelerate.

To reflect the possible growth in market potential, the framework for type-1 rivalry requires several further features (figure 3):

- Improvements to all firms' products, and changes to prices and marketing (though no effect is included in this illustration),
- Reinforcing feedback to grow each firm's customer-base (here, our firm alone creates 5%/month word-of-mouth growth – our rival achieves none),
- Reinforcing feedback to grow the potential pool of customers (also set at 5%/month), and
- Further growth of potential, driven by all firms' marketing and product development (though no effect is included in this case).

To apply the DRSV framework for type-1 rivalry to practical cases, figure 3 must be extended. 'Product attractiveness' must be specified, its impact on

Figure 3
Type-1 rivalry with feedback driving growth of both potential and developed customers



customer take-up assessed, along with the resulting growth of interest amongst new consumers. The effect of marketing efforts and pricing on customer-migration must also be estimated. However, figure 3 illustrates key features of type-1 rivalry in market development:

- The base win-rate for each firm is the same, but our firm alone gains further growth from feedback – customers enjoy our service sufficiently to recommend us to others. Consequently, our customer-base soon out-strips the competitor's.
- The potential customer pool starts depleting, but is replenished by industry-wide word-of-mouth. The increasing total of customers that both rivals develop causes the in-flow of new potential customers (A) to escalate rapidly and overtake the rate at which the two firms are exploiting them (B+C).
- Consequently, both we and our rival experience renewed growth from about month 15.

Some care is needed in using the stock-and-flow structure in figure 3. The development rate of customers, either to the potential pool or into the active customer-base, is rarely clear cut. A population of customers may exhibit a range of responses towards the complex mix of product benefits and price on offer. And delays may arise between actual changes in product appeal and changes to customers' perception. Yet this perception has to change before customers adjust their behaviour and join the 'potential' pool.

Industry-wide mechanisms illustrated by this case create difficulties and dilemmas:

- A range of exogenous and industry factors may also stimulate the potential customer pool – socio-economic trends, improving price-performance ratios for the products offered, and so on. These add to the impact of firms' collective efforts. Actual demand is then a consequence of how effectively firms exploit this potential.
- Trend-based market forecasting is most unlikely to be reliable. Attempts to assess the 'elasticity of demand' – seeking correlations between price (or income) and demand – are also fatally damaged by the inescapable realities of accumulation, depletion and feedback. Regulatory and industry interest in the effects of pricing for mobile phones, for example, has been considerable. But prices of handsets and usage drive several rates of change –

growth of the potential user-base, rates of new subscription, levels of usage amongst developed subscribers, and switching amongst subscribers, both within and between technology generations. No mathematical correlation between price and demand can come close to presenting a true picture of market behaviour under such circumstances, and any apparent correlation that does emerge will be chancy and highly misleading.

- Complementary, non-exclusive resources may substantially impact upon the dynamics of rivalry. It is increasingly common for firms to benefit from interdependencies between their own product or service and industry-wide resources that may not be under their control. The rapid growth of software product markets, even for new entrants, is substantially hastened by the existence of complementary resources, e.g. the installed base of PC users, the shared infrastructure of software dealers, and the large community of buyers who expect to discover useful new products on the internet. Such mechanisms further undermine any chance of discovering simple, linear relationships between price and functionality on the one hand, and demand or market share on the other. The increasingly common phenomenon of inferior products defeating objectively superior rivals is readily explained by the role taken by complementary resources.
- The time-path of customer-base growth usually exhibits complex dynamics. Such complexity is clearly manifest in figure 3, even though this illustration excludes many demand-drivers that apply in practice. If management is to understand changes in their market, therefore, they must assess its potential as well as its actual demand. Lack of such understanding causes difficulties in many situations. For example, agencies concerned with smoking control have invested large sums in market research, but still know little about the number of smokers who, at any moment, are actively considering giving up. Yet these form the most promising target for anti-smoking products and services, and potential inspiration to other would-be abstainers. (I am indebted to Rod Brown and colleagues at SmithKline Beecham for this example.)
- Firms often face a dilemma on how much to build up potential demand. Management can easily find

itself in the unfortunate position of having built a market to the benefit of its rivals. The rapid growth of UK demand for high-quality coffee shops is certainly being driven by the marketing efforts of Starbucks, the established US chain. It is quite probable, though, that these efforts are pushing more total business into the outlets of its rivals than into its own. Yet management has little choice but to undertake these efforts if it is to build its own business.

Only by laying out the relationships between the various customer resource-stocks and assessing the diverse forces causing them to flow through the market will it be possible to understand the market's development, and identify with confidence powerful policies to drive the future to the firm's own advantage.

Price as a strategic resource

An important implication of this article's discussion of rivalry concerns the role of price. Whilst price may often be accurately understood as an instantaneous consequence of the balance between supply and demand, many firms have some discretion on their relative price-position. Price may therefore be a strategic resource, whose level needs to be as carefully managed as any other.

The level of price achievable, compared with rivals, can be driven by reputation or quality of resources, and the level of price can itself be a driver of increases for other resources.

Type-2 rivalry: Capturing rivals' customers

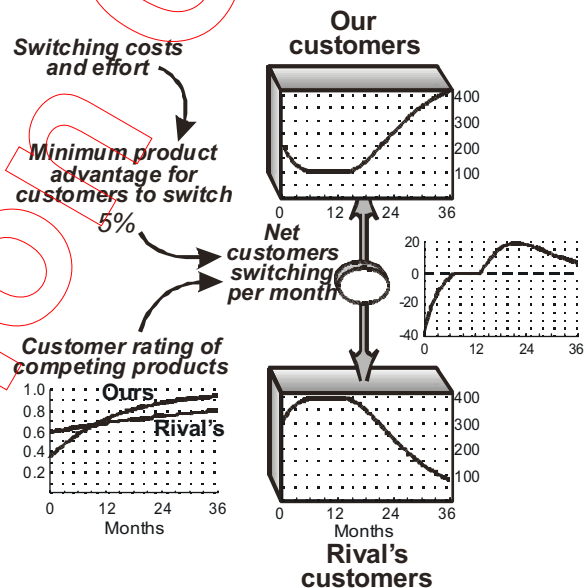
Only in the earliest stages of market development is rivalry largely focused on the race for unexploited potential customers. Yet even in developed markets, the framework in figure 3 continues to apply, if customers cease to be active and return to the potential pool. It is also rare that absolutely no new potential customers emerge. Retail banks, for example, fight for each new generation of consumers, even though overall penetration of bank accounts is very high.

As markets develop, though, a second mechanism comes into play – the direct switching of customers between rivals. This struggle is a tug-of-war, in which each firm tries to pull customers out of their rivals' system and into their own, by offering what they hope is an attractive product. It is in this context that game theory makes perhaps the strongest contribution to

capturing rivalry dynamics and other tools can be wielded to attack specific mechanisms. For example, conjoint analysis may be used to track customer-switching through time, as a function of rivals' product-improvement efforts (Green and Kreiger 1997).

Figure 4 shows the resource-system structure for type-2 rivalry between two suppliers of specialist paints. In a recent innovation, the two suppliers have between them captured all of the potential 500 customers. We have 200 customers and the competitor has 300, though a product improvement by our rival means they are rapidly capturing our customers (start-point for the net customers switching chart = minus 35/month).

Figure 4
Type-2 rivalry as a tug-of-war for customers



The chart at bottom-left shows our own R&D efforts steadily improving the product (as rated by customers on adhesion, gloss, colour-fastness and so on). We are narrowing the gap against our rival's product, and within a few months, the product differences are so small that customer-losses stop.

From months 7 to 13, there is too little to choose between us for customers to incur the costs and work in switching. However, our R&D efforts continue outpacing the competitor, until we open up a large enough advantage to start winning customers back quite quickly – the net customers switching chart becomes positive. Eventually, the maturing technology erodes the product differences, and there is little further switching.

One interesting observation about this case concerns path-dependency. Had we been just 6 months later in improving the product, our competitor would have captured so much of the market, and had so much time to continue fine-tuning its product, that we would never have caught up. As it is, the modest advantage in our R&D effectiveness enabled us to overtake and leave our competitor irretrievably behind.

This phenomenon of one-time opportunity is common. With the opening up of competition in markets as diverse as airlines, telecoms and energy, early opportunities occur for new entrants to take customers by offering significant price or product advantages. It is much harder for other entrants or retaliating incumbents to offer further comparable benefits, and the window of opportunity closes. The framework in figure 4 thus offers a dynamic perspective on the concept of first-mover advantage, providing insight into the scale and timing of the opportunity, and the nature, scale and duration of counter-moves rivals may need to make to keep the window closed. It may not, for example, be necessary to pre-empt fully an attacker's expected price move, merely narrow the gap sufficiently to deter a large proportion of potential switching.

Type-3 Rivalry: Competing for Sales to Shared Customers

Customers in many markets may commit exclusively to one supplier at any one time. Consumers rarely subscribe to two mobile phone services, and few firms purchase power from more than one supplier. In such markets, type-1 and 2 rivalry are adequate to capture the dynamics of competition.

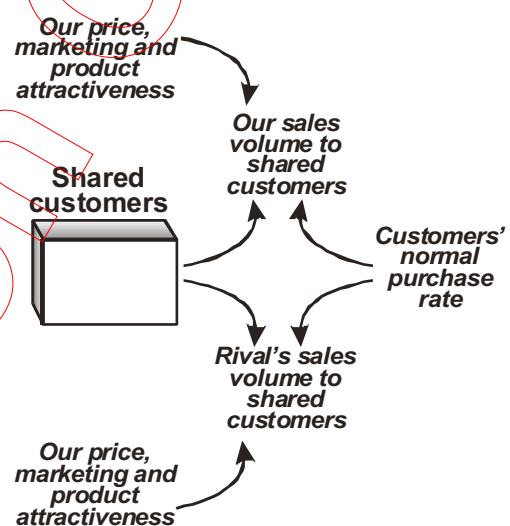
Not all markets are so tidy, however, so type-3 rivalry arises – winning a larger share of sales to customers who purchase from several suppliers. For example, producers of fast-moving consumer goods (FMCG), such as food, drink and cleaning materials, generally compete to supply retailers who stock a range of competing products.

Type-3 rivalry may occur alone, or in combination with rivalry types 1 and 2, but its structure is most clearly illustrated with a customer-base that is both static and completely shared. The appeal of rival products does not now cause customers to switch, but instead determines the rate of sales each rival enjoys (figure 5).

Figure 5 appears to contain little that might cause dynamic complexity, but this is not the case. Not only will most real cases feature migration of

customers into and out of the shared pool, but the drivers of normal purchase rates and relative competitive success invariably include resource-stocks that accumulate and deplete. FMCG sales depend upon consumer interest in rivals' products. Suppliers compete to win shelf-space from each other and from other product-categories, and they use sales forces to win this war. In addition to the stores themselves, consumers, shelf-space and the sales force are all resource-stocks that must be built, and all, to varying degrees, must be competed for against rivals. Each may exhibit any or all of the three types of rivalry.

Figure 5
Winning sales to a shared customer-base



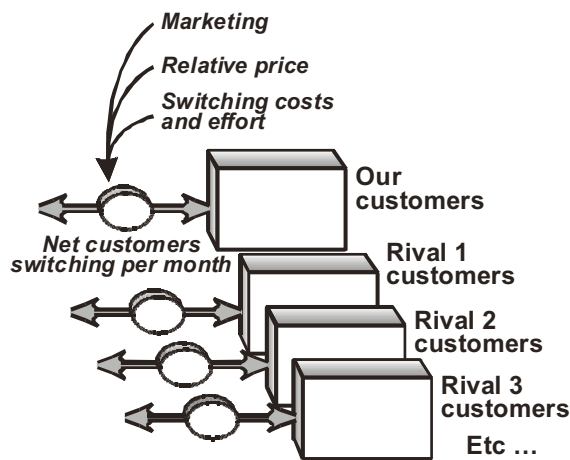
Competition between many rivals

All three types of rivalry are most easily understood by considering competition between just two firms. However, all can be readily extended to capture the more common situation of multi-supplier rivalry.

For type-1 rivalry, as many firms as necessary can be added to Figure 3, each winning customers from the potential pool or losing them again. Growth of the pool itself reflects some weighted attractiveness of the portfolio of competing products, and may be accelerated by the larger number of supplying firms.

Type-2 rivalry in Figure 4 can also be modified to capture multi-firm situations. For this purpose it is still important to ensure 'conservation of matter', i.e. customers lost by firms offering poorer products match those gained by firms offering better ones, plus or minus any net change in the industry's total customer-

Figure 6
Reflecting multi-supplier rivalry for active customers



base. It is then relatively straightforward to estimate the reallocation of customers amongst competitors (figure 6).

Strategic groups

All three types of rivalry can become unmanageable in industries with many competitors (eg car manufacture, internet service providers, law firms ...). However, it is often unnecessary to assess separately the prospects for every competitor. Mercedes may need to evaluate carefully the interplay with BMW, Jaguar and other premium manufacturers. However, the low-cost manufacturers can mostly be dealt with collectively. For example, they may in aggregate develop car-ownership in emerging economies, into which Mercedes and close rivals will later compete to sell luxury vehicles.

The strategy field already offers an established approach to simplifying the problem – the notion of 'strategic groups'. Whilst much work has been done to refine this concept, an adequate start-point comes from Porter, 1980, who defines a strategic group as '... the group of firms in an industry following the same or a similar strategy along strategic dimensions'. The concept of strategic groups developed significantly over the following few years (McGee and Thomas 1986).

Much uncertainty remains about the importance (or even the existence) of strategic groups. However, many executives know that clusters of rivals do indeed pursue similar behaviours, even if these differences are not observable from financial or performance ratios (which is where much academic effort focuses in the hunt for strategic groups).

If firms in a strategic group follow similar behaviours, then DRSV suggests those behaviours will be constrained by the resources those firms currently possess and be directed at building resources for the future that reinforce the strategic architecture of those firms. The low-cost car manufacturers lack many of the strategic resources needed to attack Mercedes' market – product attributes, dealership quality, reputation and the current customer-base itself. Their resource-building efforts focus on developing products and distribution that will accelerate the capture of customers similar to those who have previously bought their products.

This resource-constraint on strategy development is most evident where firms attempt to enter a different group. Toyota's entry into Mercedes' group required the creation of a new brand – Lexus – and a host of new resources both consistent with this new aspiration and distinct from those of Toyota. Mercedes itself is currently in the process of tackling the same challenge with it's A-class small vehicle, but is attempting to leverage its existing luxury-car resources to achieve this (e.g. its customer-base, reputation and dealerships).

Combining rivalry mechanisms

An example to clarify the interplay of the three types of rivalry follows two financial services firms racing to develop a new Euro-mortgage product (a recent, but perhaps premature product innovation). To simplify, both firms sell exclusively through independent financial advisors (IFAs), and have no direct channels for distributing the product.

Consumers hear about both products through marketing (largely newspaper ads), and may request either product from their IFA. The products are similarly attractive on objective measures, but have features that appeal to particular consumers. Cash-flows continue for as long as a consumer holds the product. However, consumers may switch from one firm's product to the other if marketing or the IFAs persuade them that the differences are advantageous.

IFAs are motivated to offer a product by suppliers' sales efforts and by demand from consumers – the more consumers purchase a supplier's product, the more commission is received from promoting it. The best indicator of likely sales is the current number of consumers who hold each firm's product.

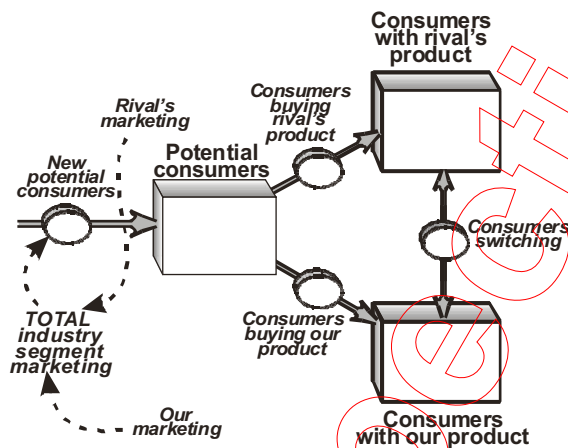
The framework that follows is not simple, but some guidelines for using DRSV provide a perspective for the complexity:

- Resources determine performance at any moment, so revenue from our product is calculated from the number of consumers who hold it, whilst costs reflect marketing spend and the number of sales people.
- Resource-levels are determined only by in- and out-flows over time, so one critical managerial judgement is 'How fast are we signing up new consumers?'
- Rates of gain and loss for each resource reflect the levels of any or all of the resources already in place, so the answer to the previous question can be estimated from our marketing efforts and the priority IFAs are giving to our product.

Winning Consumers - Types 1 and 2 Rivalry

Little word-of-mouth feedback occurs in this market, but the marketing efforts of both rivals build potential consumer interest (figure 7).

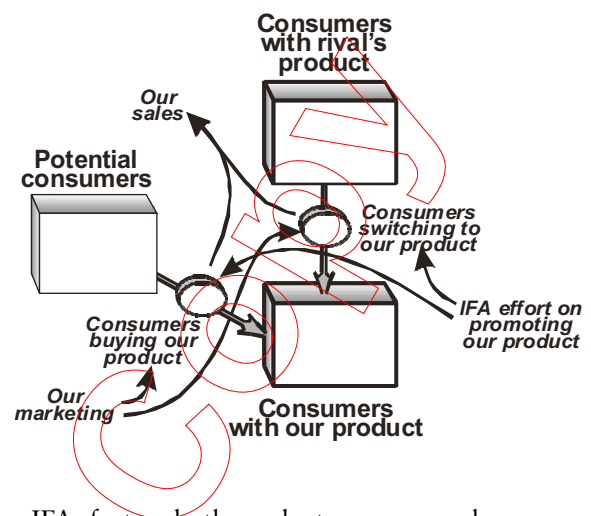
Figure 7
Consumer take-up for a new financial product: rivalry types 1 and 2



Type-1 rivalry starts as each firm races to win new consumers. However, type-2 rivalry also emerges as we try to persuade established consumers to replace the rival's mortgage with our own.

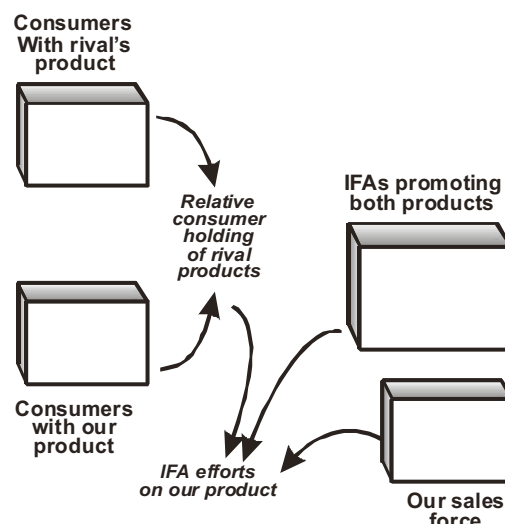
Figure 8 shows the forces driving consumers into holding our product. Exactly equivalent efforts are made by our rival. Note that whilst the flow of new customers into our stock constitute the rate of unit-sales of our product (ie new mortgages sold per month), our revenues derive from the stock of consumers holding our mortgage at any time – i.e. the interest payments we receive.

Figure 8
Building purchases and revenue for a mortgage product



IFAs feature both products, so we are also engaged in type-3 rivalry – persuading them to give a larger share of effort to our product than to our rival's. IFAs give priority to our product if a large population of consumers already hold our mortgage, and if our sales effort persuades them to do so. (Strictly speaking, this mechanism includes some type-2 rivalry, since it will take time for any change in our sales-force to influence IFAs' attention to our product. For simplicity, this detail is ignored).

Figure 9
Winning IFAs' efforts: rivalry type-3



The interaction between the three rivalry mechanisms is illustrated by a scenario in which the rivals have contrasting beliefs regarding the best way to build the business.

- Our rival believes that marketing alone is key – if enough consumers want their product, IFAs will see the potential and promote it. They commit £300,000/month in marketing and only assign 10 sales people to building IFA support.
- We know we must build consumer interest, so commit advertising of £200,000/month, but also believe IFA support is critical, and assign 40 sales people to this task.

Figure 10 combines Figures 7-9 into a composite resource-system. For clarity, the mirror-image structure for our rival is not shown. The story plays out as follows:

- The rival's early marketing is sufficiently strong that they rapidly develop the few potential consumers who are already interested. The combined marketing of the two firms quickly pulls consumers into the potential pool, but the rival exploits these opportunities fast, so the pool never builds above about 3,000 consumers.
- As the market development rate inevitably slows, so does the exploitation rate advantage to our competitor. Meanwhile, our sales force has won strong IFA support. Our rival's customer base becomes available for us to win, and consumers

start to switch from the competitor's product to ours. As the stock of consumers with our product accelerates, we win still greater support from IFAs. This enables us to catch our competitor's rate of acquiring new consumers, and this, combined with our success in switching, allows our total customer base to overtake theirs early in the third year.

Extending Rivalry to Other Resources

Rivalry is rarely restricted to the fight for customers and sales, and often arises with other strategic resources. All kinds of organisation compete for scarce staff, charities compete to stimulate and develop donors, media firms compete to win advertisers, oil exploration firms encourage governments to release exploration rights which they then contest, and firm groups in telecoms and broadcasting compete for access to limited radio spectrum. Fortunately, no further frameworks are needed – the three mechanisms already discussed apply to non-customer resources too.

The extent of such parallels should not be overstated. Rivalry can arise only when it is feasible for competitors to contest a resource. It is not generally possible, for example, to compete over products. If a competitor wants the same product as us, they must develop it themselves. Unless we are fighting to purchase or license the product from a third party,

Figure 10
Combining types 1, 2 and 3 rivalry in building sales of a new financial services product

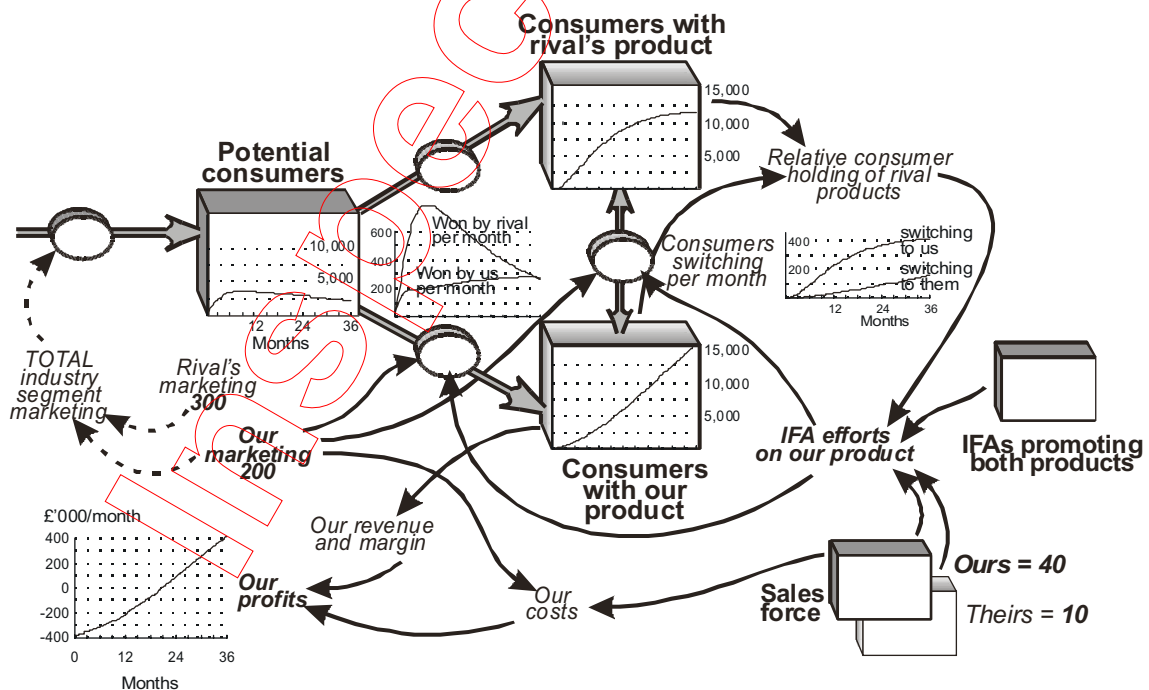
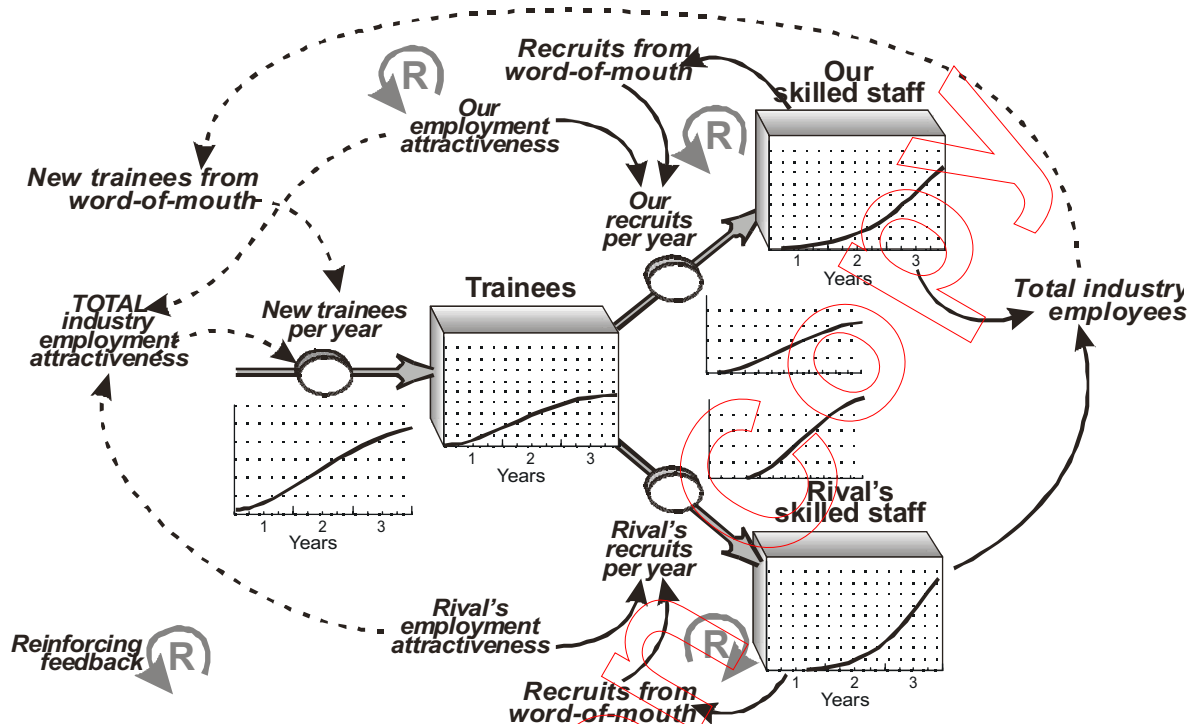


Figure 11

Type-1 rivalry with feedback driving growth of potential and developed specialist staff.



there is no legal means to take a product away from us. Similarly, it is not generally possible to compete for production facilities, unless they are owned by third parties and we are seeking to out-source manufacture. Intangibles, such as reputation and morale are also rarely contested directly, though a side-effect of our gains may be losses for our rivals.

Type-1 rivalry: developing and exploiting emerging resources

Competition to develop potential resources often arises in the case of skilled staff. The explosion of Web-based commerce in recent years rapidly built demand for Java programmers. Although training of new programmers increased, good people remained in short supply, so rival firms focused on winning the few staff emerging from training. The resulting 'war for talent' became particularly intense when Microsoft entered the fray, trying to overtake the collection of rivals promoting Sun Microsystems' open standard.

Not only is there a parallel to the development of the resource through the system, but there is also a close analogy to the reinforcing feedback from word-of-mouth. It soon became clear that this emerging industry would offer attractive employment prospects,

so the flow of new trainees rose rapidly. In other sectors, such as engineering, the inevitable delays in the system may cause over-shoot, and result in cycles of over- and under-supply of labour.

The framework for customer-development can be readily adapted to this new strategic resource (figure 11).

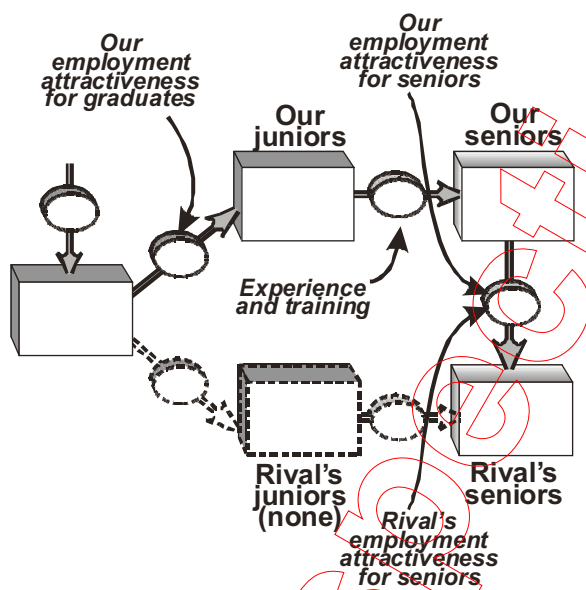
'Tug of war' for established resources

The staff-development case is slightly more complex than the customer-base examples, however, because of growth in staff experience during their time with an employer. Firms may not try to compete for newly-qualified staff, but wait to poach experienced people from others – type-2 rivalry. Citibank and other major investment banks are seen as premier employers for new graduates. Smaller rivals do not fight in the early recruitment market, but instead target experienced staff with especially attractive pay-rates. A salary premium may be affordable without the heavy cost of developing their own staff (Figure 12).

This poaching of experienced staff is widespread throughout many sectors, and may seem an intractable problem. However, two solutions at least have been found to be feasible.

- A British engineering company was a 'top-quartile' recruiter, paying high starting salaries to the brightest graduates from the best universities. Unfortunately, after just 2-3 years training, the best recruits were frequently taken, for much higher salaries, either by specialist firms or financial institutions who valued their systems skills. A partial solution was found in the characteristics of the good staff who had not been lost. These had often not been the 'best' hires from the 'best' universities, but apparently less-high-flying individuals. They had built more experience over a longer period, were more settled in their families and communities, and did not aspire to the glittering careers (sic) of those who had left. An irony of this case was the possibility that the cost of being a top-quartile recruiter may have been positively damaging, rather than advantageous to this company.

Figure 12
Shifting rivalry to the war for experienced staff



- A US public relations firm also found itself losing the best of its young professionals. Rather than resisting this loss by matching competitive offers, the company told leavers that it welcomed their wish to develop their careers, and kept in touch with them. Many found their new roles less attractive than they had hoped, while others gained experience that the original employer valued. A large fraction of lost staff were re-hired, to both their own and the firm's advantage.

Rivalry for share of attention from non-exclusive resources

Type-3 rivalry – for share of attention from a non-exclusive resource - may also apply to resources other than customers. Distributors of computer software and hardware depend on their reputation as reliable suppliers, able to provide even the latest products quickly. Yet manufacturers are frequently unable to meet high levels of final demand and have to ration supplies. Manufacturers give highest priority to distributors that historically delivered high sales volumes. There is thus a battle between distributors to capture share of supply from a non-exclusive set of supplier relationships.

Industry Dynamics and Scenarios

The DRSV frameworks in this article can be developed beyond competition between firms and strategic groups. If the dynamics of performance outcomes for firms and firm-groups can be understood, insight will emerge regarding the prospects for entry, exit and growth by firms across an entire industry, i.e. the evolution of an entire industry structure. Two examples illustrate the potential:

- In 1989, the UK Government regulated the brewing industry, restricting producers' ownership of pubs. The Monopolies and Mergers Commission that recommended the change expected new firms to enter the industry, widening choice and forcing established firms to compete intensively by lowering prices. In the event, no new entry occurred and product-ranges across the industry were rationalised. Two major firms engaged in the expected price-competition, but lost to incumbents who continued to stress added-value products. Examination of the dynamic interactions at work showed that, whilst price competition could have taken some initial market share, the damage to the resource-systems of firms who did so would be severe, and their demise unavoidable.

- The UK internet-service-provider (ISP) sector has recently been thrown into turmoil by the launch of an attractive free service by Dixons plc. Established ISPs have essentially faced two choices – either redesign their resource-systems to join the free-service segment, or else find specific sub-segments of users who value particular features sufficiently to justify the usage fees. This adaptation process continues to evolve, with former firm-groups dying or consolidating, whilst others are emerging.

An extension of the principles concerning rivalry and industry evolution allows coherent, robust scenarios to be developed. DRSV's application to a single firm essentially captures the mutual evolution of resources on the demand-side (customers, distributors, reputation ...) and the supply-side (capacity, products, staff, unit-cost ...). It is possible to assemble an equivalent architecture for an entire industry, and thus assess the time-path of its evolution. After decades of decline, the cinema industry was turned around by the mutual investment of film-makers and cinema owners both in films people wanted to watch and in facilities in which to watch them (cinemas). The increasing numbers of cinema-goers provided cash for further investment, investor confidence in the industry, and a reputation resource to win additional potential consumers, all of which reinforced further industry-wide resources.

The approach can be extended to capture inter-industry 'rivalry', thus further enriching the scenarios of future conditions that may confront executives in any one firm within any one industry. Growth of internet usage, for example, can grow only at the expense of other industries on which consumers may spend their income or (crucially) their time. The relative prospects for internet usage, TV-viewing, and other consumer service sectors can thus only be understood as a dynamic interplay between the functionality, price and 'good use of time' provided by each service.

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Conclusion

This article has explained how the dynamic resource-system for a single firm can be extended to quantify the development of rivalry over time. The method is strongly fact-based, and provides a rigorous language and structure for management teams to debate and agree upon competitive policy. Practical application of these concepts is proving a powerful approach to solving serious competitive challenges facing firms, even in situations of rapid change, Glucksman, M. and Morecroft, J (1996), Achi, Z. et al (1995). It is also possible to understand how rivalry may evolve amongst multiple competitors and assess specific, timed and quantified opportunities for building relative advantage. However, the task of assembling the necessary frameworks and analysis is far from trivial. Teams are recommended to develop initial skills in strategy dynamics by focusing first on simpler issues within the firm's own strategic architecture. This will build the confidence to tackle the more complex questions of rivalry and industry dynamics discussed here.

Kim Warren is a Teaching Fellow in Strategic & International Management at London Business School

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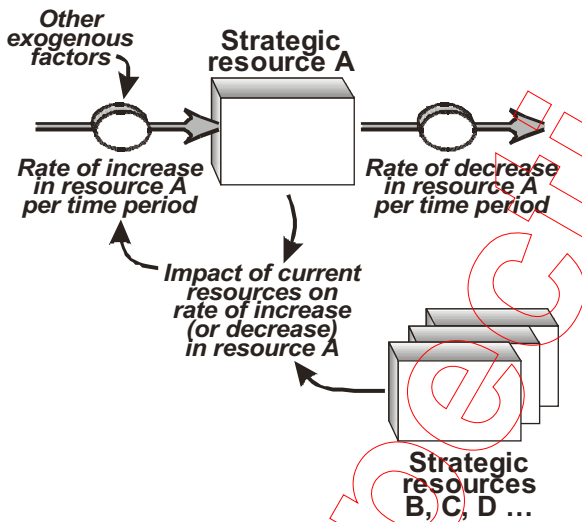
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Appendix: The DRSV Nomenclature

Warren, 1999 defined the elements of the dynamic resource-system view. Its basic nomenclature is as follows:

Figure 13
Standard diagram elements for DRSV



Strategic resources are items (tangible or intangible) that are useful. They accumulate or decay over time, in a similar way to water in a tank (the rectangular containers in Figure 13).

Resource-levels are changed only by the in-flows and out-flows to this tank (the thick, straight arrows entering and leaving the tank, above), whether by management actions and decisions or other forces.

The tank, with its in- and out-flows, is known as the stock-and-flow structure.

The rates of flow can be estimated through simple arithmetic, depending upon the existing levels of

resource already in place. These are the curved connections in Figure 13, and the calculation at each stage is made in the variables connected by these arrows – so 'impact of current resources on the rate of increase in resource A' is calculated from the current values of Resource A and Resources B, C, D ...

The central mathematics of DRSV was described in Warren, 1999. For theoreticians wishing to study the further implications of potential-resource development and rivalry, those formulations can be readily extended with the following equations.

- A. The rate of accumulation p_i of potential resource P_i at time T is a function of all resources R_{1-n} to which all firms (1 to m) in the industry collectively have access at that time, including P_i itself, as well as external factors.

$$\text{Eq.1} \quad p_i(T) = f_i[R_{1,1}(T), \dots, R_{n,m}(T), E]$$

- B. The level of potential resource P_i at time T reflects its historic rates of net accumulation r since time $t=0$.

$$\text{Eq.2} \quad P_i(T) = \int_0^T p_i(t)dt + P_i(0)$$

- C. The net rate of accumulation $r_{i,j}$ of resource $R_{i,j}$ by firm j at time T is a function of all resources to which the firm has access at that time, including $R_{i,j}$ itself and the potential resources, P_1 to P_n , and the resources of rivals, $R_{1,1}$ to $R_{n,m}$, as well as external factors, E .

$$\text{Eq.3} \quad r_{i,j}(T) = f_{i,j}[R_{1,1}(T), \dots, R_{n,m}(T), P_i(T), E]$$