

The use of *iThink* in Scenario Planning in the Building Industry in South Africa

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Abstract

Since 1990, South Africa has been undergoing a paradigm shift from authoritarian rule to a new democratic society. Typically, the process of transition has been conditioned and shaped by historical circumstances which are unique to South Africa but nevertheless, shaped and patterned in predictable ways. The building industry has an important role to play in the political transition process, basically because of the need for reconstruction and socio-economic development, giving rise to the struggle between the contending visions of redistribution and growth. All the contending visions for the new South Africa identify the four inter-related objectives of the need for growth, for equity, for political participation and for stability.

The affordable housing market has an aura of destiny and paradox about it. On the one hand, the housing backlog of some 1,14-million units appears to be an unsurmountable problem and on the other, it provides an amazing and historically important opportunity. Through the provision of affordable housing at scale for the under-privileged, many of the objectives of a new South Africa can be achieved, in creating massive employment in redistributing income, in wealth-creation and in promoting stable family life, which underpins a healthy society and promotes nation-building. Nevertheless, the affordable housing problem is bedeviled by many complex issues which defy simple analysis and which require a systems approach.

In the search for leverage, a systems model, using the *ithink* soft-ware package was developed of the building industry in South Africa. It related activity per market segment, to affordability, the need for and effect of subsidies, employment creation, housing stock and backlog and home-ownership. The model challenged and clarified the mental models of participants in a scenario building process, identified the major obstacles and the major leverage for a trend-break in the building industry and for breaking the housing log jam.

In the model, it was possible to link hard data such as building activity, gross domestic product, housing backlog and need, home-ownership, employment and subsidies, with '*soft issues*' such as the need for leadership and vision and for establishing a Housing Accord. The Systems Model enabled the participants to see the impact of alternative strategies over a 20-year planning horizon. Sensitivity analysis was applied to varying levels of subsidies, demonstrating the impact on the housing backlog and building industry activity.

The '*ithink*' strategic modelling package provided an extremely useful tool in scenario building and in challenging the mental models of leading influencers and decision-makers in the building industry. In particular, it highlighted the need for a gradually phased increase (and timeous decrease) in affordable housing delivery, in order to avoid "*over shoot*" and "*over correction*", with the potential of putting the system into dangerous fluctuation. In the scenario planning process, the use of the model information enabled some 60 participants in a Think Tank process, to obtain a much clearer view of the future of the building industry and to use the process in '*creating a memory of the future*' and thus, to have some influence on housing policy and strategy in South Africa.

The use of iThink in Scenario Planning in the Building Industry in South Africa

The Political Transition and Implications for the Building Industry

South Africa is in a process of paradigm change, where the very beliefs and assumptions held in common and taken for granted in society, over decades, are being challenged, labelled as irrelevant and illegitimate and contemptuously discarded.

A change in paradigm constitutes a revolutionary process that is fundamentally irreversible. It is a traumatic time characterised by great uncertainty, where the entire complex and inter-related cultural web, comprised of symbols, power structures, control system, rituals and routines are being challenged and replaced.

It is also a time of uncomfortable self examination, of confessing past errors and demonstrating a commitment to a break with the past and to redress past inequities. It is a time of courageous leadership, when the messengers of change could lose their popularity and their positions. It is a time which requires transformational and visionary leadership, which can lead to a change of heart, or paradigm shift amongst both leaders and constituencies alike. It is a time when uncomfortable truths have to be faced, including the need to accept that the conventional mode of doing things over decades did not satisfy the demands put to it by modern society, thus leading to the necessity to develop new, appropriate responses and strategies, new paradigms, to ensure continued relevance and legitimacy in the new society in the new South Africa. For some leaders like President F W de Klerk, his 'political conversion' was by no means a dramatic event but was rather built on pragmatism and evolved as a process (Willem de Klerk: 1991: 22). When Willem de Klerk asked Pres. de Klerk whether his religious sensitivity and philosophical principles helped to 'push him over the line', he replied: 'I do not want to give my insights the status of God-given verities; that kind of thing has been misused too often in history. But I searched and prayed and believe that God gives insight through human thought and emotions.' (W de Klerk: 26).

For other leaders in South Africa, the so-called 'political conversion' was more dramatic and almost in the nature of a 'Damascus experience'. The importance of these events is that significant leaders in South Africa were able to accept the inevitability of political change and the transfer of power to the majority, but like all political transitions elsewhere in the world, the process has been traumatic and accompanied by tremendous uncertainty, as well as seeming chaos. However, according to Harrison Owen (1991), 'Chaos creates the difference that makes a difference through which we learn.'

The following quotation captures the essence of the miracle of the South African transition:

'The British avoided the revolutions experienced by the French, the Russians and the Chinese, by muddling through.

As its power waned, the British aristocracy gradually relinquished political and economic power fortuitously averting the violent uprising by the working classes predicted by Karl Marx. Democratic institutions somehow survived the transfer of power.

These are early days and one is aware that one could be clutching at straws - but one grows increasingly hopeful that SA will also muddle through to eventual democracy, that we shall avoid Clem Sunter's much dreaded low road to conflict and a waste land. (Editorial comment, Sunday Times, sometime in 1991; exact date unknown).

The Role of the Building Industry in the Political Transition

The affordable housing market is currently a relatively small component of total building activity. Its importance is, however, of national, strategic significance. It has a crucial role to play in the transition to a new democratic order.

Currently, the backlog in affordable housing is some 1,14-million units and the annual need, due to population growth, is 225 000 units. In contrast to this, the annual provision of affordable housing has never exceeded 30 000.

The affordable housing backlog and need in South Africa, therefore, has a aura of destiny and of paradox about it. On the one hand, it is a seemingly immense and almost insurmountable problem but on the other hand, it provides South Africa with a tremendously exciting challenge and opportunity, at a crucial time in the country's history. 'Accelerated development of low cost housing would fill many needs at once. Housing is a way to bring low income communities into the market economy as stakeholders, ending their long period as temporary sojourners in the white man's market economy. With a housing site and sooner or later, a home, a black person can begin to build wealth in the same way that whites have traditionally done, through saving for a home.' (Nedcor/Old Mutual Scenarios: 1992: 15)

The building industry therefore, clearly has an historically important role to play economically, politically and socially in the transition to a new South Africa. This is not surprising, as studies of transitions elsewhere in the world have shown a certain predictability.

As stated by Abraham F Lowenthal in his foreward to the book by Guillermo O'Donnell and Philippe C Schmitter 'Transitions from Authoritarian Rule : Tentative Conclusions about Uncertain Democracies' (1986) '..... transitions from authoritarian rule are conditioned and shaped by historical circumstances, unique in each country but patterned in predictable ways'

'.... although international factors, direct and indirect, may condition and affect the course of transition, the major participants and the dominant influences in every case (studied) have been national. They demonstrate the importance of institutions, of mediating procedures and forums that help make the rules of political discourse legitimate and credible in a period of change. They illustrate the vital significance of political leadership and judgement, of the role of single individuals in complex historical processes. They point out, again and again, the importance of timing, the complexity of interactive processes carried out over extensive periods'

Some of the predictable patterns referred to in the above quote are clearly evident in the South African transition, notably the establishment of many forums including the National Economic Forum and the National Housing Forum (which particularly addresses the affordable housing backlog and need), the development of pacts and social accords and the important role of leadership by institutions, associations, agencies and individuals. In this regard, South Africa is fortunate indeed to have a leader of the calibre of Pres. F W de Klerk. He is a man with a clear destiny in politics, who will continue playing a key role in the next decade. 'He is equipped with personality, intellect and conviction and he was virtually raised to face the seven forces that will control our politics. He was finely honed for negotiation, compromise and persuasion. He has the inner calm and strength for risks and deadlines. He is intent upon completing the transition in South Africa.' (de Klerk: 1991: 184)

As far as the building industry is concerned, it is also very clear that it has an important role to play in future to smooth the post-transition political process. The major liberal, radical and technocratic visions for the new South Africa, all address the need for socio-economic development and reconstruction thus giving rise to the struggle between the contending visions of redistribution and growth.

All the visions identify four inter-related objectives:

- The need for growth;
- The need for equity;
- The need for political participation;
- The need for stability

Each with a different order of priority.

The building industry, particularly via the provision of affordable housing, can contribute meaningfully to the achievement of these objectives:

- Building can provide an important 'engine for growth';
- The need for equity is provided by means of the subsidy mechanism to create housing affordability; it is an acknowledged means of redistributing income through home ownership, thereby creating the most important method of wealth-creation to the majority of households;
- The process of housing is essentially participative and home-ownership contributes to nation-building and stability by encouraging a stable family life and strong middle-class values;
- The building industry is acknowledged as creating the most employment opportunities per Rand invested and unemployment must be combatted if a modicum of stability is to be expected.

In regard to the redistribution and growth debate, Dr Frederik van Zyl Slabbert (former M.P. and leader of the Progressive Federal Party) wrote in the Sunday Times (date unknown) as follows: 'Development depends on a special relationship between growth (economy) and redistribution (polity) - one generates wealth, the other improves the quality of life in society. If redistribution takes place at the expense of growth, development dies - if growth is indifferent to the demand of redistribution, it generates conflict which undermines growth and development dies. There is nothing in democracy which guarantees either growth or redistribution and therefore development. However, many who demand democracy, expect development and many who resist development, fear it will make development impossible. Development without democracy is possible for a while but democracy without development is short-lived.'

Therefore, although the affordable housing segment represents a relatively small percentage of total building activity in South Africa, its importance is far beyond its relative size would suggest because of its potential socio-political and economic impact:

- In accommodating the homeless;
- As a most appropriate mechanism in the redistribution of income;
- In wealth-creation;
- Employment creation; and in
- Contributing to stability, thereby smoothing the political transition process.

This segment must therefore feature prominently in the development of scenarios for the building industry.

During a recent visit to South Africa, the Urban Sector Reconnaissance Mission of the World Bank investigated the role of housing in the economy. (Aide Memoire of the World Bank Mission, 10 May 1991). Significantly, they concluded that the housing sector in most countries plays a major role in the economy, both directly and indirectly. Moreover, it is not simply the direct flows of investment into the housing sector and the flows of services that determine its importance. Housing is, for example, a major asset of most households, is an important motivation for household savings, is a source of collateral for borrowing at favourable rates for the purchase of other goods and services, is linked to other sectors of the economy, represents the dominant consumer of land in cities, is a resource taxable by local authorities and through its location and utilisation, provides more or less efficient linkages between places of work and other economic activities necessary to the functioning of the economy.

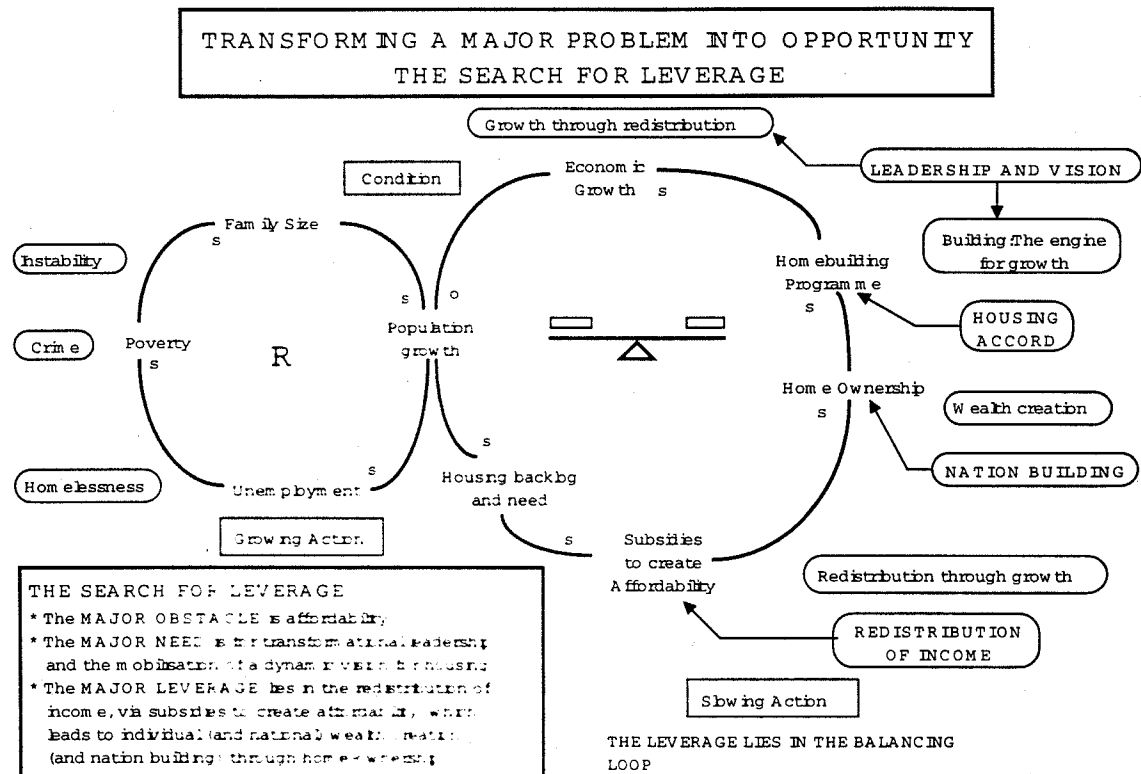
What is patently obvious from the foregoing is that the affordable housing market is complex with many connections and interdependencies with the total political and economic system of the country. The solution to the housing backlog and need does not lie in a technologic breakthrough. It is not a technical problem. The ultimate success in the provision of affordable

housing is inextricably linked to the political process as well as general conditions in the financial market; particularly the level of interest rates and the extent of subsidies provided to create affordability. Therefore, a systems approach to the analysis must be adopted, so that the potential impact of other parts of this system can be included.

The Search for Leverage

As Archimedes said: 'Give me a lever long enough and single handed, I can move the world.' (Senge: 1990: 13).

As mentioned earlier, the affordable housing backlog and need has an aura of destiny and paradox about it. This seemingly insurmountable problem, simultaneously presents South Africa with one of the keys to a successful transition.



The following diagram shows a simplified systems model of the problem. It shows a reinforcing- and a balancing loop. In the reinforcing loop (R), increased population growth leads to increased unemployment, poverty, family size, homelessness, crime and instability in a vicious cycle of expanding population growth. No amount of family planning or other similar interventions will slow this cycle. The solution must be outside this reinforcing loop. In the balancing loop on the righthand side, increased population growth can lead to an increasing housing backlog and need as well as an increasing need for subsidies to create affordability. With the provision of sufficient subsidies at scale, home-ownership increases and a massive home-building programme can result, which in itself, leads to economic growth as the multiplier operates. When this happens, the increasing individual and national wealth thus generated, leads to smaller families and retards population growth. In this simple diagram it can be seen that the redistribution of income, via subsidies to create affordability is indeed a valid mechanism for wealth creation in a developing country. A successful home-building programme, leads to wealth- and employment creation and contributes to nation-building, all of which are strategic issues in a country undergoing political transition such as South Africa. Thus, it can be seen that the limits to growth archetype, shown in the diagram again illustrates that in the search for leverage, it won't help to push harder in the reinforcing cycle. A more effective strategy is to look in the balancing loop and to weaken or

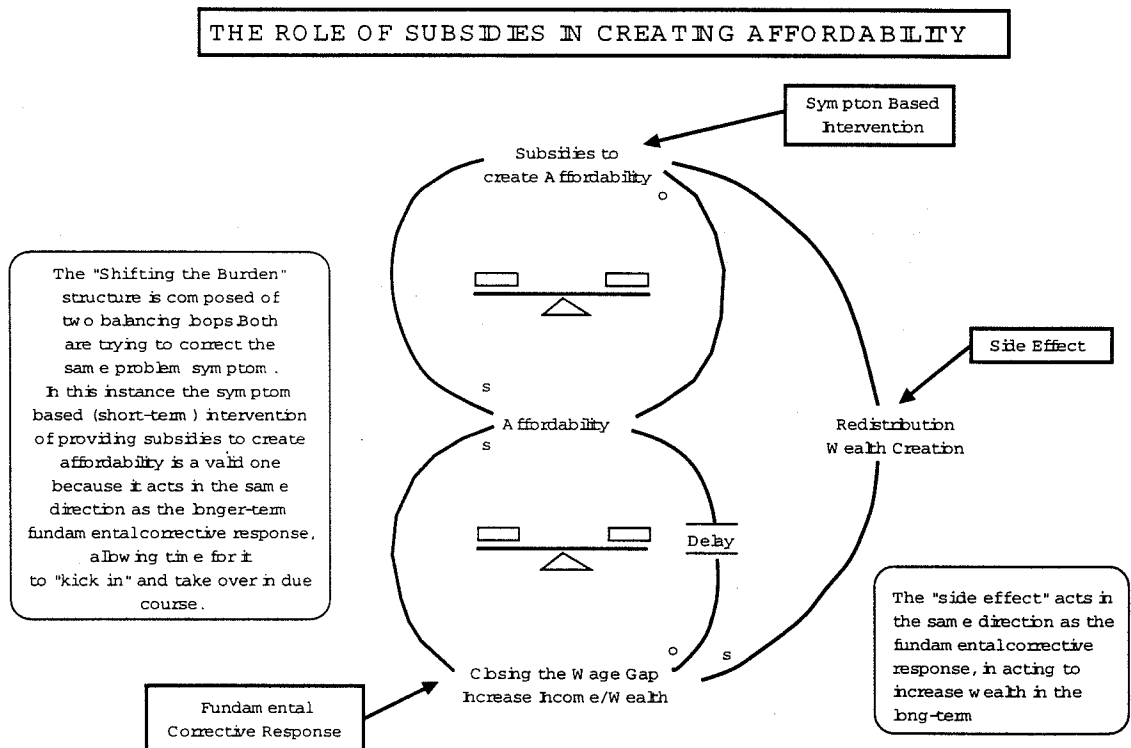
remove the limiting condition (population growth), through creating wealth, thereby leading to smaller families. (Senge: 1990: 104)

The foregoing simplified systems analysis of the 'limits to population growth' and the role of the affordable housing market, highlights the fact that the key for unlocking a 'trendbreak' in the building industry, lies in the sustained provision of large numbers of affordable housing over the next ten years, to eliminate the backlog and supply in the annual need. This analysis confirms that in order to break the housing logjam, the major obstacle in the affordable housing market lies in the lack of affordability, which is of course, directly linked to the provision of subsidies by government and the prevailing interest rate; the major need is for visionary leadership and the creation of a compelling vision for housing and in particular, the recognition of the fact that redistribution through growth, and growth through redistribution, are not mutually independent problems to be solved but rather interdependent polarities to be managed. The major leverage lies in the redistribution of income via subsidies to create affordability which leads to individual (and national) wealth-creation (and nation-building) through home-ownership.

An Appropriate Symptom-based Intervention

The following diagram shows a classic 'shifting the burden' structure related to affordability (the symptom) and subsidies to create affordability (a symptom-based intervention). However, as Senge points out (Senge: 1990: 111) sometimes symptomatic solutions are appropriate. However, symptomatic solutions must always be acknowledged as such and must be combined with strategies for rehabilitating the capacity for fundamental solutions.

The diagram confirms that the 'shifting the burden' structure is composed of two balancing (stabilising) processes. (Senge: 1990: 106). Both are trying to adjust or correct the same problem symptom. The top loop represents the symptomatic intervention, the 'quick fix'. It solves the problem symptom relatively quickly but only temporarily. The bottom loop has a delay. It represents a more fundamental response to the problem, one whose effects take longer to become evident. However, the fundamental solution works far more effectively - it may be the only enduring way to deal with the problem.



The argument about subsidies to create affordability is systemically represented in the foregoing diagram. In this case, the symptom-based upper loop intervention is an appropriate short term solution because it allows time for the fundamental response processes in the lower loop to gather momentum.

The response time differs significantly between the two sets of loops - the lower loop invariably has significant delays and therefore, the symptom-based intervention is an interim solution, allowing time for the fundamental solution to 'kick in' and take over from the symptom-based intervention over time. Given sufficient time, the wage gap can be closed as education and skills improve and as equal wages are paid for equal work and in due course, the problem of affordability can be addressed via this intervention. As South Africa cannot afford an immediate fundamental corrective response, (one estimate is that it could cost the country anything up to eight times the gross national product to close the wage gap), the symptom-based intervention of subsidies to create affordability is eminently appropriate, allowing the wage gap to be progressively narrowed over the longer term. Also, as Senge points out, (Senge: 1990:106) often, in 'shifting the burden' structures, there is also an additional reinforcing (amplifying) process, created by 'side effects' of the symptomatic solution. In the case of the symptom-based intervention of subsidies to create affordability, the side effect is that redistribution takes place, coupled with wealth creation in the longer term, thus confirming the appropriateness of this intervention as a phased solution to the problem.

Scenarios for the Building Industry in South Africa

Following the advice of Peter Schwartz (1991:233), a great deal of attention was paid to naming the scenarios. Individual names were assigned to each of the different scenarios under the generic description of 'The Engine for Growth Scenarios'. As noted by Peter Schwartz (1991:211): 'Eventually, when people look back on these times of change, they may consider the names to be the most important parts of the scenario.' The metaphor of the 'space race' (or 'engine for growth'), was chosen for the building industry, because it illustrates the powerful role of vision in goal achievement. It will be recalled that on 25 May 1961, President Kennedy addressed the joint session of Congress on urgent national needs and called for new, long range goals for the space programme: 'I believe that this nation should commit itself to achieving the goal, before this decade is out, of landing a man on the moon and returning him safely to earth. No single space project in this period will be more impressive to mankind or more important for the long range exploration of space; and none will be so difficult or expensive to accomplish' By late 1969, the mission was accomplished when Apollo 11 became the first manned landing on the moon (Armstrong, Collins and Aldrin).

In mobilising a dynamic vision for the building industry, to eliminate the housing backlog of 1,14-million units in ten years, it is evident that this vision pales into insignificance when compared with the vision of Kennedy to put a man on the moon within a decade. The name of the scenarios therefore, in itself, challenges the building industry to strive towards a truly stretching vision or 'strategic intent'.

The four scenarios were described very briefly in a matrix along the two dimensions of sustainability and growth.

In a nutshell, the key aspects of the four scenarios (named after space missions) can be described as follows:

- **Soyuz**

This is a no-growth scenario with 'business as usual', uncertainty and paradigm paralysis. There is talk of redistribution but no results on the ground. Unemployment remains rife, informal housing continues and not more than 20 000 affordable houses are built annually, thereby increasing the backlog. Government expenditure remains out of control, leading to a steadily worsening situation in the long-term - eventually reaching crisis proportions, thus making the road back long and painful, if at all possible.

- **Apollo**

This is a 'nice to have' scenario in which there is high growth initially, greater emphasis on socio-economic expenditure and a redistribution of income to housing, health and education. The high growth leads to capacity being strained, quality suffering and prices increasing rapidly. The high investment can lead to development funding drying up followed by massive retrenchments. The over-shoot and over-correction that follows will put the system into dangerous fluctuation.

- **Challenger**

This envisages negative growth with a disastrous outcome. Here, the vicious cycle of unemployment, population growth, poverty and crime worsens and assumes crisis proportions. No more than 10 000 affordable houses are built per annum, leading to land invasion, uncontrolled squatting, 70% of houses being built illegally and informally and housing becoming a battlefield for politicians. The entire building industry goes into decline.

- **Columbus**

This is a scenario that looks at orderly urbanisation, provision of upto 270 000 affordable sites and rudimentary structures per annum by 2000 and by the building of upto 120 000 affordable starter and conventional houses per annum by 1997.

Employment increases to almost two-million people in the building industry by 2000, home-ownership doubles as more houses are built in the next eight years than were built in the previous three centuries, with a consequent growth in home-improvements and the DIY market. The housing backlog is virtually eliminated by 2000. Under this scenario, there will be sufficient budgets for First Time Home Buyers (FTHB) and capital subsidies on site and structure schemes for the very poor. The entire building industry benefits as confidence increases and the multiplier operates. The peak investment in building level of 1984 is reached in 1997 and exceeded thereafter.

The 'Engine for Growth' Scenarios have become widely known in the building industry and in particular, the 'Columbus' Scenario has become common terminology and has been incorporated into the strategic planning of many key stakeholders.

Developing a Systems Model for the Building Industry in South Africa

As a first step in developing the scenarios for the building industry, a free-hand sketch was made of possible alternative numbers of affordable houses built annually. The iThink model of the building industry was then developed and manipulated to simulate the envisaged scenarios, showing the annual investment in building which would result under these different scenarios.

Part of this model is shown as an Annexure to this paper. In this model, the different elements of the building industry are connected in a dynamic, closed loop, systems model, e.g. the demand for housing per market segment, the resulting investment in the residential sector, investment in the non-residential sector, investment in home-improvement following an increase in home-ownership, the required level of subsidies for the different housing delivery assumptions, the effect on home-ownership, housing backlog and need, on employment and the percentage which residential investment represents of gross domestic product.

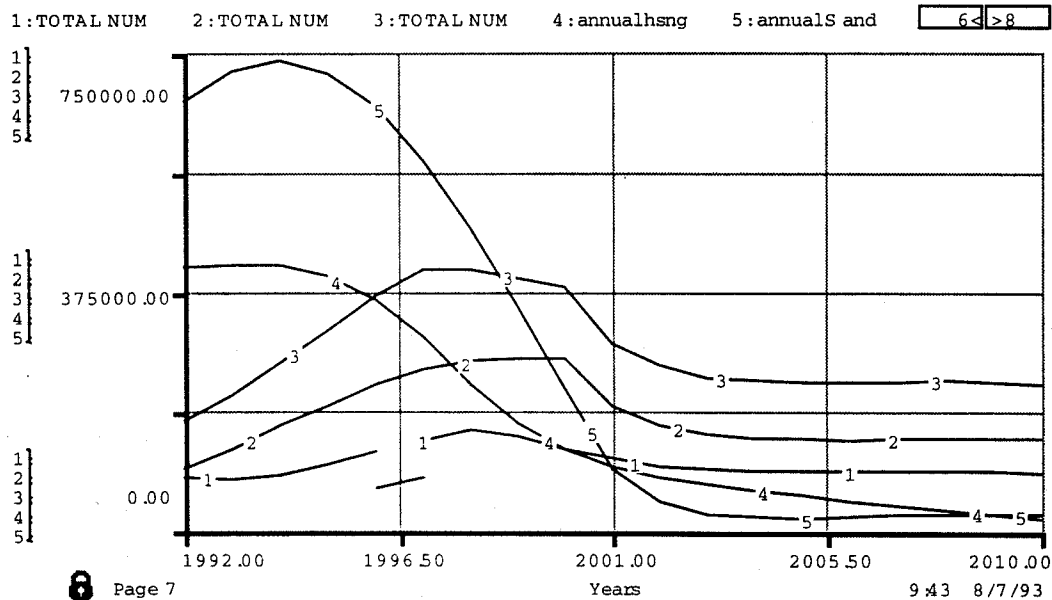
All the scenarios provide a detailed analysis per market segment to the year 2010. The projection was carried through to 2010 because some implications of policy decisions particularly in a growth scenario will only become evident from eight to ten years on. Two particular scenarios were handled in depth, i.e. the MFA Forecast (based on a trend and cycle analysis of building industry activity since 1946) and the 'Columbus' scenario. These two scenarios provide a band of alternatives, with the MFA forecast describing 'business as usual bu

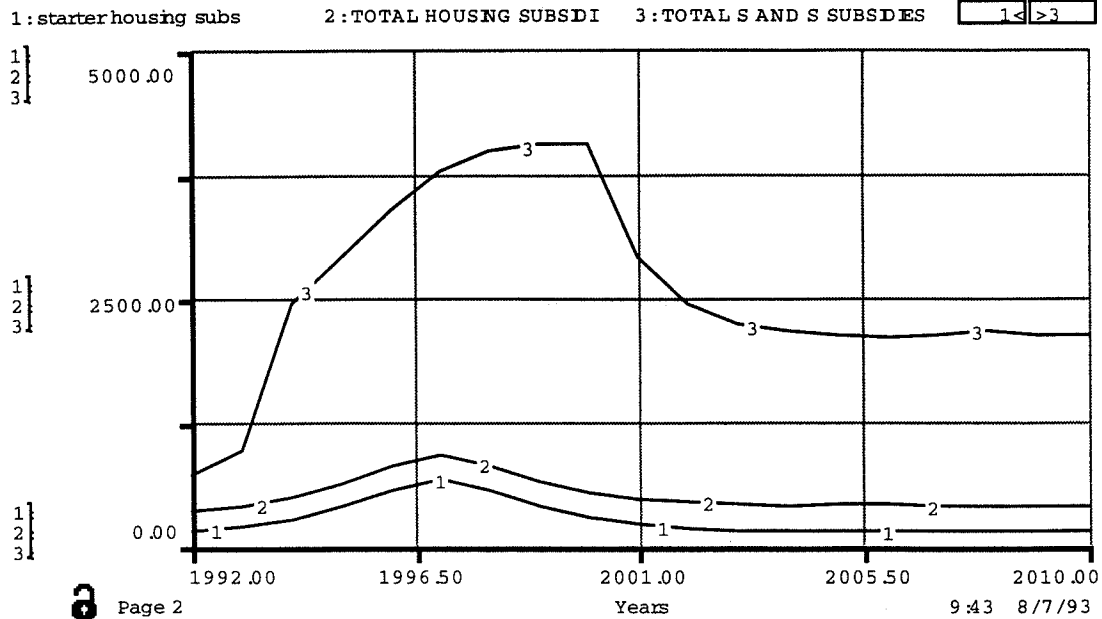
better', and the 'Columbus' scenario providing an optimistic (but realistic) view of the future.

Key aspects of the 'Columbus' Scenario include:

- A 'trend break' in the building industry due to massively increased activity based on investment in affordable housing;
- The record 1984 investment levels in the building industry can be exceeded from 1997 onwards;
- Residential investment exceeds non-residential for the first time in South Africa's history from 1993 to 2000;
- The number of site and structure houses providing annually becomes increasingly important, from 55% of total in 1992 to 71% in 2000;
- A structural change takes place in the number of houses built per population group, (excluding site and structure housing, which is predominantly black), changing from 43% black in 1992 to 57% in 2000;
- Investment in luxury housing increases from 8% black in 1992 to 18% in 2000;
- Total housing backlog reduces from 1,14-million units in 1992 to just under 200 000 in 2000;
- Home-ownership more than doubles in the period 1992 - 2000;
- Total employment in the building industry grows by 50% from 1,2-million in 1992 to 1,8-million in 2000;
- Total subsidies (based on capital subsidies of between R7 500 - R15 000 per household with income less than R3 000) peaks in 1998 at just below R5-billion and gradually reduces thereafter to the level of about R2,5-billion per annum.

The following diagrams from the iThink Model shows the residential and site and service housing backlog and supply for the period 1992 - 2010 under the 'Columbus' Scenario. The annual subsidies applicable to this housing provision programme is also shown in the next diagram.





Sensitivity analysis

The iThink Model of the building industry is an extremely useful visual thinking tool. It is dynamic system model which therefore offers the facility to create one or more feedback loop and to conduct sensitivity analysis.

The model confirms that the major leverage in the building industry lies in the provision of subsidies to create affordability which could lead to a massive home-building programme, leading to a 'trend-break' in the building industry, ushering in a 'change of gears' and a 'kick-start' to the economy. Therefore, the model links the housing delivery process with cumulative subsidies required and the feedback loop therefore connects the cumulative subsidies required with affordability which then affects the annual change in starter, conventional, standard and site structure housing.

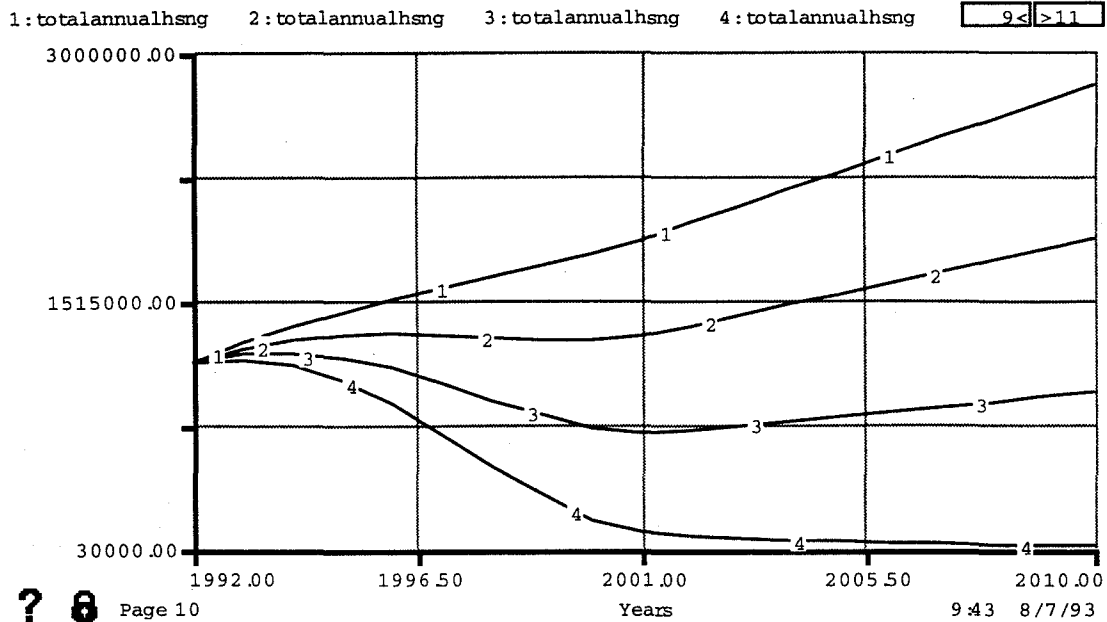
The sensitivity analysis therefore, logically looks at affordability and relates the required cumulative subsidies (in terms of the 'Columbus' Scenario), to some assumed budgeted subsidies, in order to assess the impact of different subsidy provisions on selected key variables in the building industry.

The different levels of budgeted subsidies are handled in the model by means of applying a fraction multiplier to the variable required subsidies. Thus, the affordability is varied by means of the simple formula:

$$\text{Affordability} = \frac{\text{Cumulative budget subsidies}}{\text{Cumulative subsidies required}}$$

In the sensitivity analysis set-up, the fraction of subsidies allocated is varied in four sensitivity runs from 0,25 - 1,00 (which equals the 'Columbus' Scenario).

The following graph illustrates the impact of varying subsidies on affordability and the key variable of total annual housing backlog. Naturally, other sensitivities can also be conducted using the model.



Sensitivity Analysis Setups

Run #	<u>fraction of subs allocated</u>
1	0.25
2	0.50
3	0.75
4	1.00

The impact of the 'Engine for Growth' scenarios

What this model succeeded in doing was to help participants in the scenario planning process, to '.... overcome their disbelief (by using) simple computer simulations, embodying the scenarios as a means for rehearsal.' (Peter Schwartz: 1991: 205)

Schwartz (1991: 214) asks the question: 'How do you judge whether a scenario was effective?' and furnishes the following answer: 'The test is not whether you have the future right. That is fairly easy if you consider multiple scenarios. The real test is whether anyone changed his behaviour because he saw the future differently and did he change his behaviour in the right direction? Did he do the right thing?'

The formulation of the 'Engine for Growth' Scenarios and in particular, the building of the model based on 'iThink', assisted the Scenario Think Tank participants to understand the role and impact of the affordable housing segment on the political process, the economy and the building industry. It contributed in clarifying some very confused thinking regarding the role of subsidies as an appropriate mechanism to redistribute income and to create affordability. Many influential stakeholders regarded redistribution of income via subsidies as an evil of socialism. An important illumination resulted from the discovery that subsidisation is in fact, a Biblical principle.

Thus, for example, it became known that the first subsidies, with the rich lending to the poor at no interest, was recorded in Nehemiah Chapter 5, (some 2 500 years ago) during the rebuilding of the wall of Jerusalem. Barber (1980: 78) illustrates that Nehemiah had applied Systems Thinking by analysing the complaints of the people engaged in the rebuilding of the wall of Jerusalem.

'They had complained of a shortage of food, of being forced to mortgage their lands, of slavery and of taxation but Nehemiah's response was to go to the heart of the problem. In evaluating the situation, he came to the conclusion that the basis of the whole matter was one of exploitation. He therefore contended with the nobles and the rulers.' (Barber: 1980) Nehemiah therefore rebuked the rich for not acting in accordance with 'the fear of God' (i.e. in submission to his authority) and invited them to join him in lending money and grain without interest to those that were in need. However, Nehemiah even went further because the willingness to lend money and grain without interest, although representing a dramatic step in the right direction, did not right the previous wrongs. Therefore, Nehemiah also enjoined them to 'restore, I pray you, this very day, their fields, their vineyards, their olive groves and their houses, also the 100th part of the money (that is the interest charged at the rate of 1% per month) and of the grain, the new wine and the oil that you are exacting from them.' (Nehemiah 5, verse 11).

Thus, the development of the scenarios for the building industry (inter alia), clarified the crucial role that subsidies can play in creating affordability for the very poor and this has led to a changed perspective and a new recognition of the need to provide subsidies at scale.

'You can tell you have good scenarios when they are both plausible and surprising; when they have the power to break old stereotypes; and when the makers assume ownership of them and put them to work. Scenario making is intensely participatory, or it fails.' (Schwartz: 1991: 234).

The process of involving some 24 organisations (including associations, development agencies, building societies, contractors and distributors) across a wide spectrum of the building industry in the scenario planning process, coupled with the use of the iThink Strategic Modelling Package, in developing a model for the building industry, enabled the participants to 'create a memory of the future'. The scenarios resulted in most of these very important players in South Africa adopting the scenarios in the development of their own strategies. A key player in the building industry, the 'Building Industries Federation South Africa (BIFSA)', used the scenarios as a major input to their Strategic Plan for the period 1993 - 1998. In fact, they adopted the very apt slogan 'Building, the Engine for Growth' as a derivative of their Vision, published in their Strategic Plan 'The building industry is a primary engine for growth, contributing to a prosperous environment in South Africa.' The National Housing Forum also used the scenarios as input to their debate in order to clarify issues relating to the housing problem. The new government, which will be an ANC-led coalition has indeed publicised their commitment to eliminate the housing backlog over a ten-year period as part of their election manifesto. The 'Engine for Growth Scenarios' certainly played a role in determining housing policy. There is no doubt that the affordable housing sector will play an extremely important role in the strategies of the new government and in the process of redistribution and the creation of wealth for individuals, whilst stimulating the economy via the building industry as "The Engine for Growth".

The iThink model of the building industry, demonstrated that the housing backlog can be eliminated within a ten-year period (in the process, building up to the provision of some 400 000 housing units at the peak delivery) and so contributed to the breakdown of the old stereotype that 'it can't be done. It is an insurmountable problem.' Now the important stakeholders are debating how it can be done and have discovered that they can 'create the future'.

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Appendix: Part Model of the Building Industry in South Africa based on Ithink Modelling Package

