

An Overview of Turnaround Management Principles

**An Overview of Turnaround Management and an Application of
the Principles with a Computer Simulation**

Richard Chambers, June 10, 1997

Summary

Purpose

A turnaround manager is needed when a company loses shareholder wealth. When the stock price dives and stays on the bottom as investors lose confidence, a turnaround manager is needed. When a division sees its market share shrink as its costs rise, a turnaround manager is needed.

What does a successful turnaround manager do in order to change a company or a division from a loser to a winner?

This paper provides an overview of what a turnaround manager can do in order to prune and nurture a company or division back to healthy growth.

This paper then looks at using some of the methods with a computer simulation to determine if, at least in cyberspace, they are valid techniques

A Brief Description of the Game Chosen for the Simulation

The computer game SimCity Classic, a variant of the Sim games produced by Maxis, was the game chosen for the simulation. Though not ordinarily thought of as a business simulation, SimCity Classic does provide a basic business simulation environment though the business simulated is a city rather than a manufacturing firm.

All of the Sim games are simulations of a particular system such as an ant farm, SimAnt, a city, SimCity or SimCity 2000, a farm, SimFarm, or an ecological system, SimEarth or SimIsle. The player sets up a scenario and then starts the program running. The program, using artificial intelligence methods, simulates the reaction of the system to the changes in the scenario made by the player. As the simulation progresses the player is able to make changes to the scenario to influence the outcome of the simulation.

SimCity Classic is one of the earlier, less complex simulations produced by Maxis. The program allows the player to create and manage a city at a despotic executive manager level. This means the player can make whatever changes he wants using a set of basic tools (despotism) but can't control the simulation directly. This is much like an executive manager of a manufacturing firm who can't control people on an assembly line but can create an environment which influences their productivity. The player can establish basic parameters and constraints but the citizens of the city, the Sims, will do as they please reacting to changes introduced by the player.

The major tools the player of SimCity uses to influence the citizens of the city are zoning of tracts of land, placing police and fire departments, building roads or rail transit lines, and setting the tax rate.

The major tool the player doesn't have is deficit spending. If cash reserves of the city are spent and cash flow is negative then the game is essentially over with one caveat, there is a cash infusion trick the knowledgeable player can use.

The game provides the player with a set of basic measurement tools that provide an idea of the state of the city along with historical data showing trends. In addition, the citizens

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of the city will also provide feedback through the use of a poll that shows their concerns such as high crime, high taxes, etc. Finally, the citizens will vote with their feet by leaving the city if conditions deteriorate too far or migrating into the city from some external place if the city appears to be a good place to live.

At the end of each year taxes are collected. The following January the player is given the chance to set the tax rate along with the budgets of the transportation, police, and fire departments of the city for the coming year. The player must manage the city budget to provide for city services along with civic improvements such as power stations, roads, and new land zones.

A city must have a budget which provides for the maintenance of existing facilities as well as the building of new facilities. The budget apportions moneys to the various operating groups within the city government and is based on estimated tax revenues which takes the place of estimated sales within a manufacturing or service organization.

A Brief Description of the Detroit Scenario

SimCity Classic comes with several built-in scenarios that look at some of the basic problems faced by cities. Of the eight scenarios, two are interesting in that they encourage the player to use finance and accounting principles to win. This paper looks at one of those, the Detroit scenario.

The Detroit scenario is a simulation of the state of the city of Detroit in the early 1970's. The city is faced with a high crime rate and a negative cash flow though with some reserves. Both industrial and commercial activity is going down reducing the employment rate.

The object of the scenario is to turn the city around within ten game years by lowering crime and producing positive cashflows by reducing expenses and increasing tax revenue.

The Basic Principles of Turnaround Management

What is a Turnaround

A turnaround situation is first recognized when there is serious concern or dissatisfaction with the firm's performance, results, and/or near-term forecasts of performance and results. When Wall Street analysts downgrade their rating from buy to hold, a company should review itself to determine whether changes need to be made before the rating is changed from hold to sell.

[Brigham 97] identifies the following five types of financial distress:

- Economic failure is when a firm's revenues do not cover its total costs, including its cost of capital. Businesses that are economic failures can continue operating as long as creditors are willing to provide capital and their owners are willing to accept below-market rates of return.
- Business failure as used by Dun & Bradstreet is defined as any business that has terminated operations with a resultant loss to creditors.

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- Technical insolvency is when a firm can not meet its current obligations as they fall due which may be due to a temporary lack of liquidity or deeper problems leading to economic failure.
- Insolvency in bankruptcy is when the book value of a firm's liabilities exceeds the true market value of its assets which generally leads to liquidation of the business.
- Legal bankruptcy when a firm has filed for bankruptcy under the federal bankruptcy laws.

Similarly, [Sloma 85] identifies the following four stages of turnaround situations:

- Quality of profit when a firm is unable to maintain its usual profit margins through price competition or increased costs yet cash flows are still sufficient for normal operations
- Quantity of profit when a firm is seeing deeper cuts into its usual profit margins and there are times when cash flows are insufficient for normal operations
- Cash shortfall when a firm is unable to cover costs with cash flow and has to dip into its credit to cover expenses that would ordinarily be covered by cash
- Cash crunch when a firm has not only run out of cash but has used up its credit as well

The objective of a turnaround is make the changes needed by an organization so that it is profitable and is able to increase shareholder wealth.

[Sloma 85] says that any firm's success or failure can be directly traced to the way that three major items are managed or mismanaged: people, plant, and product. [Schon 86], while primarily investigating the plant portion of the model, makes the same point. In the end what counts is how the people making the product, the plant facilities they are using, and the product design itself are all managed makes the difference between a world class, competitive company and a tax write off for investors.

Symptoms of a Turnaround

[Sloma 85] presents twenty-eight symptoms of imminent and/or eventual financial distress of a business firm. The symptoms are generally presented from a manufacturing firm viewpoint with a few inapplicable to a service or resale firm (or a city).

[Sloma 85] firmly says that there are two cardinal principles what must be followed when measuring a firm's financial health:

- unitize the measurements by evaluating data in terms of each unit of product or service though being careful to treat fixed costs as fixed costs even if expressing them in costs per unit.
- trace costs and revenues to product line, customer, channel of distribution, and geographic region.

The symptoms following are listed from the worst (cash crunch) to the least (quality of profits) visible type of turnaround situation.

Symptom 1. Inability to Pay Debt Service. The firm is not generating enough cash to pay the interest on outstanding debt (unable to service outstanding debt) when it becomes due.

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Symptom 2. Inability to Pay “Taxes”. The firm is not generating enough cash to pay governmental levies such as taxes (real estate, income, Social Security), municipal and state licenses, workmen’s compensation, unemployment levies, etc.

Symptom 3. Inability to Pay Contractual Obligations. Contractual obligations includes post-sale or warranty obligations, royalties, licenses, retainers, and other financial obligations the firm has to other entities.

Symptom 4. Inability to Pay Accounts Payable. The firm is not able to pay bills to vendors within normal terms and is having problems with vendors extending credit.

Symptom 5. Inability to Pay Salaries, Wages, Commissions. The firm cannot make timely payment of direct compensation to employees and/or agents.

Symptom 6. Inability to Pay Fringe Benefits, Pensions, etc. The firm cannot make timely payment to insurance firms, pension funds, and the like.

Symptom 7. Inability to Pay Purchase Commitments. Purchase commitments, unlike account payables, are commitments to purchase goods, for instance when a firm issues a blanket purchase order with scheduled delivery dates, that haven’t yet been received.

Symptom 8. Excessive Debt to Equity Ratio. Excessive is a relative term but basically means that the firm has insufficient cash flow to service the existing debt comfortably.

Symptom 9. Flat and/or Falling Sales. The firm’s books show that net sales (e.g. gross sales minus returns, allowances, and other revenue deductions) show a flat or downward trend.

Symptom 10. Eroding Gross Margin. The firm’s books show that the gross margin, net sales minus cost of goods sold, is eroding or growing smaller.

Symptom 11. Increasing Unit Direct and Indirect Labor Cost. If the firm’s labor per unit of product cost is increasing then either productivity is decreasing or any increases in productivity is being offset by corresponding increases in labor compensation.

Symptom 12. Increasing Unit Direct and Indirect Material Cost. If the firm’s material per unit of product cost is increasing then the amount of material per unit is increasing, material price is increasing or any flatness or decrease in material price is being offset by a corresponding increase in material handling costs.

Symptom 13. Increasing Burden: People-Related Variable Expense. These are the costs that are usually associated with keeping personnel on the payroll who are involved in the production support role such as forklift operators.

Symptom 14. Increasing Burden: People-Related Fixed Expenses. These are the costs that are usually associated with keeping personnel on the payroll who are involved in operational supervisory and management roles such as a department foreman.

Symptom 15. Increasing Burden: Plant-Related Variable Expense. These are the costs that are usually associated with supplies and tools that are consumed during production but that aren’t materials incorporated into the product.

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Symptom 16. Increasing Burden: Plant-Related Fixed Expense. These are the costs that are usually associated with the production facilities such as insurance or leases which tend not to vary depending on production volume.

Symptom 17. Increasing Sales/Marketing Expense. These are the costs (such as travel expense, sales/marketing personnel compensation, advertising campaigns, promotional programs) that are incurred by the firm as it promotes and sales its products.

Symptom 18. Increasing Finance/Administration Expense. These are the costs of the firm's administration personnel and facilities as well as the costs of the firm's debt.

Symptom 19. Increasing Engineering In-House People-Related Expense. These are the costs of the firm's in-house engineering personnel along with the associated costs of training, seminars, conventions, books, periodicals, etc.

Symptom 20. Increase Engineering Contract People-Related Expense. These are the costs of contract engineering personnel which are usually on a hourly or daily basis and are controlled by a contract between the firm and an engineering labor company.

Symptom 21. Increasing Engineering In-House Product-Related Expense. There are the costs incurred during the completion of a product-related project by in-house engineers.

Symptom 22. Increasing Engineering Contract Product-Related Expense. These are the costs of outsourcing a product-related project to an engineering firm which are usually stipulated in a legal contract.

Symptom 23. Inconsistent Valuation of Inventory Input/Output. When production costs are valued differently from actual cost of production such as when direct labor and/or materials costs aren't tracked accurately, inventory book value will vary from inventory actual value especially when overhead or burden cost is allocated inappropriately causing a large gap between reality and book value.

Symptom 24. Increasing Warranty Expense. These are the costs of labor and material in fulfilling warranty obligations of goods sold and delivered with increasing warranty expense indicating quality problems.

Symptom 25. Decreasing Capacity Utilization. As capacity utilization drops, fixed expenses are spread over fewer units of production which means that the contribution margin for each unit of production must cover a larger amount of the fixed costs reducing margins.

Symptom 26. Decreasing Product Line Profitability. The calculation of the profitability of one particular product line can be difficult due to the difficulty and subjectiveness of separating the expenses and revenue of a particular product line from the general product mix but is necessary to ensure that all products are carrying their weight marginwise and to reduce the chances that a product line with a good margin is subsidizing a product line with an unhealthy margin.

Symptom 27. Decreasing Unit Sales.

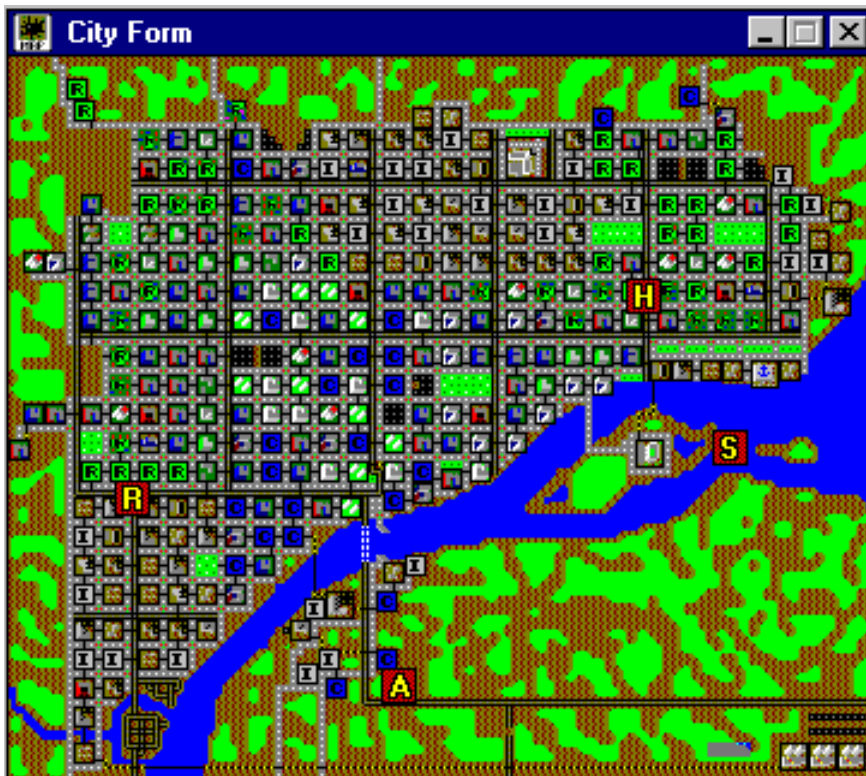
Symptom 28. Decreasing Customer Profitability. This symptom is calculated by accumulating costs (including product, sales/marketing, and warranty costs) and sales by

customer to determine which products and which customers are negatively impacting profitability.

Playing a Game of the Detroit Scenario of SimCity

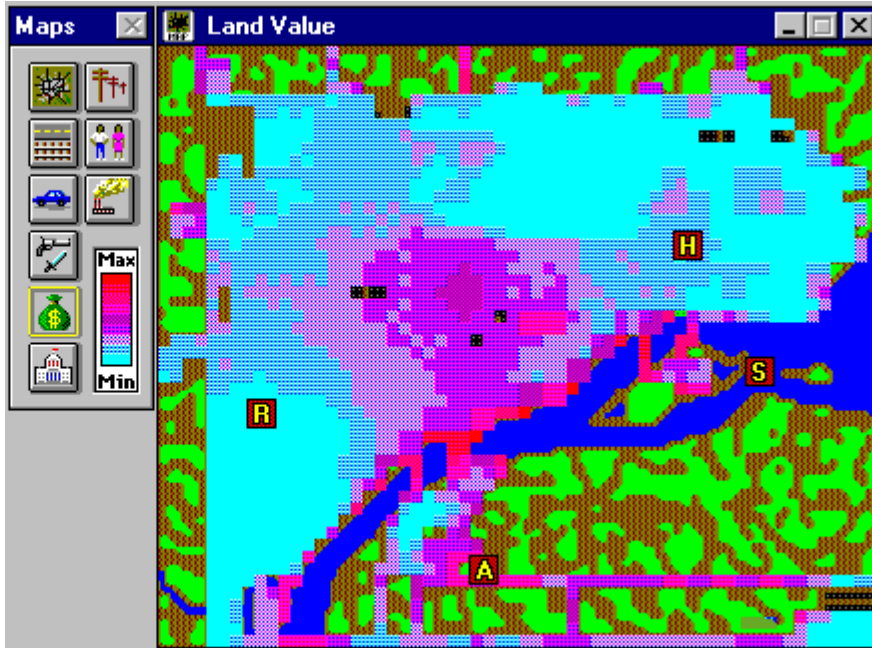
Preparation for the Game

The following map shows the basic layout of the city in the Detroit Scenario. Each square is a zone either Residential (R) color coded green, Industrial (I) color coded gray, or Commercial (C) color coded blue. Empty or near empty zones are recognizable by the lack of buildings in the zone allowing the R, I or C to be seen. In addition transit rail lines are double lines with a gray center and normal streets are solid gray lines. Looking at the map we can see to large industrial areas at the top center as well as the bottom left which are underutilized. In addition, we see that the expensive infrastructure necessary for crossing the river is underutilized as there is little development on the lower side of the map.

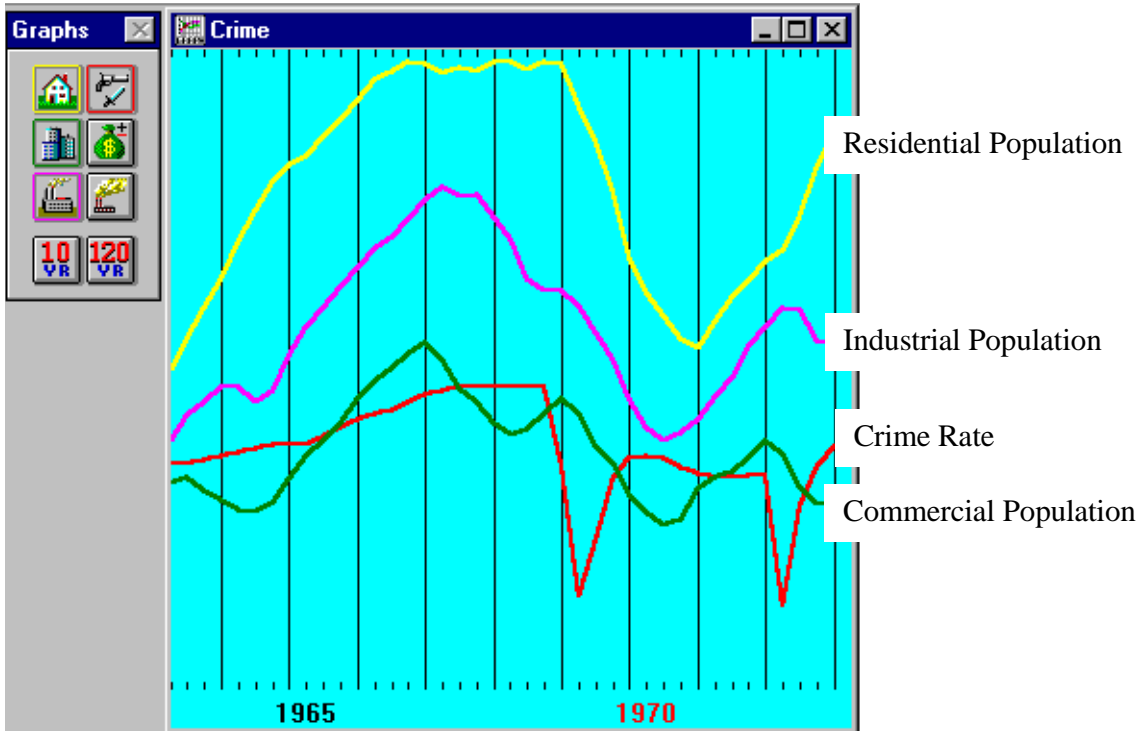


If we look at land value, which directly affects tax revenue, we can see that the heavily industrialized areas have the lowest land values yet occupy more than a third of the city. The black squares are empty zones that need to be re-zoned into productive zones.

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If we look at the graph of the historical performance of the city we see that though the number of residents is increasing, the industrial and commercial base is decreasing eroding tax revenues. To add to our problems, crime is rising which decreases land value in the areas of high crime further eroding tax revenues.



Finally, when we look at the city budget that tax revenues are not covering expenses requiring the city to dip into its reserves in order to cover operating expenses. The Transportation Department is requesting more than two times the funding of the Police

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and Fire Departments combined. The transportation network contains expensive to maintain transit rail lines which are laid out inefficiently.

An Overview of the Basic Strategy for Turnaround

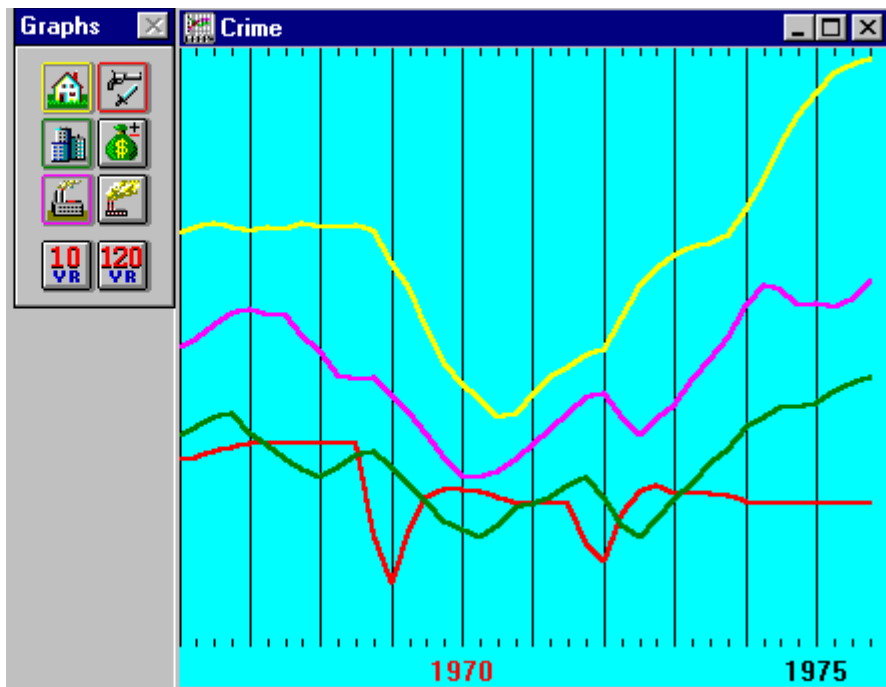
The basic strategy is:

- reduce expenses particularly in the Transportation Department which is more than 50% of the yearly budget to reduce overhead especially of under utilized capacity
- reduce crime by adding additional Police Stations in high crime areas and improving land values throughout the city by re-zoning to improve tax revenues indirectly through improved quality of life
- improve tax revenue directly by increasing the tax rate though no more than 9% (citizens and business will begin leaving the city at higher rates) for the short term and then reducing taxes to 7% for the long term to encourage long term steady growth
- improve traffic flows by:
 - ◇ reducing the number of intersections
 - ◇ replacing roads with transit rail where traffic volumes are high
 - ◇ improving the mix of Commercial and Residential zones so as to reduce travel distance

Results of the Strategy

With the change from a 7% tax rate to a 9% tax rate coupled with reductions in the Transportation Department and increased migration into the city, the required cash flow was reduced in a year's time by 50% despite the increased Police Department expenditures due to new Police stations. The following year despite two additional Police stations added in areas of high crime, the cash flow from tax revenues exceeded expenses.

A new trend snapshot in first quarter of 1976, 3 years after the simulation shows that the city has been turned around with population increasing as well as industrial and commercial revitalization.



There is still a problem with the crime rate which is remaining flat despite the additional police stations. The crime rate is a direct result of the large amount of Industrial zones which tend to be high crime areas due to the lower quality of life in and around those zones. The industrial zones will need to be re-zoned to higher value Commercial or Residential zones in order to correct this problem.

Synopsis

A turnaround manager has to make changes to a firm in order to improve profitability and increase shareholder wealth. A good turnaround manager needs to not only have the tools necessary but the experience as well.

It is the opinion of the author that a good grounding in experience can be derived from the use of applying the principles of cost accounting to computer simulations to gain that experience.

Bibliography

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