

Handbook of Management Games

Second edition

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Chris Elgood

Gower

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Published by
Gower Publishing Company Limited
Croft Road, Aldershot, Hampshire, GU11 3HR

Reprinted 1982

British Library Cataloguing in Publication Data

Elgood, Chris

Handbook of management games. – 2nd ed.

1. Management games

I. Title

658.4'035 HD20.7

ISBN 0-566-02229-X

Typeset in IBM Press Roman by
Pat Murphy Typesetters, Highcliffe-on-Sea, Dorset.
Printed and bound in Great Britain
at The Pitman Press, Bath

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1

What happens in a management game?

In every type of management game the student, either as an individual or as a member of a team, is confronted by a situation that requires him to decide and act. As a result of his action he experiences a consequence that may be either good or bad: he then faces a new situation which is, at least in part, of his own making. From this decision-result cycle he has the opportunity to learn. All games have some form of decision-result sequence and all are designed to create the learning opportunity, but the nature of the learning made possible can vary widely. This is influenced both by the actual design of the game and also by the manner in which it is used on each occasion. Some of the areas that can be covered are:

- 1 Learning about management situations
- 2 Learning about decision-making
- 3 Learning about behaviour

The word 'game' is imprecisely used, and at a time when there are strenuous efforts to make management education more participative and more effective the variety of material makes it hard to define what is and what is not a game. Without pretending to perfection, the boundaries have been set here so as to include any exercise which satisfies the following conditions:

- 1 Has a sufficiently clear framework to ensure that it is recognisably the same exercise whenever it is used
- 2 Confronts the players with a changing situation, the changes being wholly or partly a consequence of their own actions
- 3 Allows the identification beforehand (if desired) of some criterion by which it can be won or lost
- 4 Requires for its operation a certain level of data, documentation, physical material, computation or administrative/behavioural skill

The point should be made that winning and losing is a sensitive subject. Some behavioural games achieve their purpose better if the competitive element is played down, and it is commonly observed about all types of game that those who lose them are apt to gain more from the experience than those who win. However, the competitive instinct is so powerful that if players are able to identify a winner and a loser they will do so. This means in practice that the sort of exercise which players tend to describe as a game, and about which they use game terminology, has been included. A range of behavioural exercises is therefore included because they have a measurable, objective outcome by which in-game success is judged. Sometimes a winning criterion in such exercises is totally obvious — one team builds a higher tower of bricks than another — while at other times it can be much more subtle — the balance of points gained or conceded at a role-playing conference.

What types of management game are there?

The concept of a model

The word 'model' is used to describe the mechanism whereby the decisions made by players are translated into results. A game is intended to reproduce certain aspects of real life and through the operation of the decision-result cycle the creator is saying to the players 'If you do *this* in real life, then *this* is the sort of thing that is likely to follow.' The mechanism is built, therefore, on the pattern existing in the creators mind about how the real world behaves. One major influence in the development of management games was the scientific management movement with its emphasis on measurement, accurate analysis of data and detailed planning. Another influence was the computer, with its ability to handle extensive mathematical problems rapidly. The combination of these influences produced a generation of management games that were primarily concerned with the analysis of data, were complex and were highly numerate. The mechanism for translating decisions into results was a computer program and the model of how the real world behaved was expressed in mathematical statements. This has meant that the words 'model' and 'model-based' are commonly associated with those games where the mechanism is mathematical and rigid. The same set of decisions submitted to the model in the same circumstances will always produce the same answer.

There are now other disciplines contributing heavily to the management game field and model means something different to them. To social scientists, for instance, the word can refer to a pattern of relationships that they see as representing society. It is a generalized pattern and allows them to predict

what will happen in a probabilistic way. A game based on such a model would prescribe rules of behaviour for the players and rely upon their own interaction to supply the decision-result sequence. To illustrate, imagine a negotiating game in which a group of 'workers' were informed about their existing wage rates and given some cost of living data which showed those rates to be inadequate. Faced with a group of 'managers' who did not have that data it is highly probable that a demand for a large increase would be made and resisted — particularly if the managers had their own data describing the commercial problems of their organisation. In this case the model is the belief in the mind of the writer that in certain conditions people are likely to behave in a certain way. He creates the conditions, believing that by doing so he has effectively determined the result. In this sense it can be argued that all games are model-based because somewhere in the background is a concept of 'what happens in reality' and the conditions of the game are arranged to demonstrate it. It is possible to simulate conditions in which there is a very high probability that people will or will not do a certain thing, and this can allow a role-playing exercise to be conducted against carefully written briefs that are likely to control the course of events.

It seems logical, therefore, to classify games by reference to the type of model used and to speak of them as having definitive or probabilistic models. The former means that the decision-result mechanism is direct, constant and rigid. It may be operated by submitting decisions to a set of rules, or a computer program or perhaps by the discovery, after the decision has been made, of a predetermined consequence. It may be handled in numbers or words, but it always gives the same output in response to the same input. Under this heading can be placed:

- 1 Conventional model-based games
- 2 In-basket exercises
- 3 Puzzles
- 4 Mazes
- 5 Programmed simulations
- 6 Conceptual games
- 7 Enquiry studies
- 8 Encounter games

The term probabilistic implies that the decision-result mechanism is variable, its general nature having been foreseen and established by the ground rules of the particular game. Under this heading can be placed:

- 1 Behavioural games
- 2 Role-playing exercises
- 3 Practical simulations

While this is a useful standpoint from which to examine the field it can not be rigidly applied. The final evidence is the particular use of a particular game on a particular occasion — for umpires can adjust the results from rigid mathematical models and the writers of behavioural games can produce material that has only one conceivable outcome. A type that could be described either way is the Conceptual Game: it may or may not have a rigid model and, if it has, this may or may not be employed in use. Here it has been shown as 'definitive' because the particular example used does possess such a model. In spite of the uncertainties and ambiguities, examination of games in terms of their models is necessary — it identifies very quickly what the game is really saying and what status is claimed for the message.

Classification by scope

Another useful classification is that first set out by C. Loveluck dealing with the scope which a game covers. He defines a 'functional game' as one 'covering only one (or possibly two or three) functions performed within the simulated company'. A 'company game' is defined as one 'where most of the functions of a company are simulated . . . but the participants are only concerned with the internal operation and consequences of their decisions'. A 'business game' is one that 'involves the simulation of competing and interacting companies'. (Loveluck actually uses the term 'management game' for this type but in this book it has been considered preferable to use 'management game' as a general term.) To these can be added an 'environment game' which concerns itself with the interaction between a business and its socio-economic environment. In these days of concern with pollution, overpopulation and the environment in general, this is a relationship frequently modelled.

Interactive or noninteractive

Games can also be classified as interactive or noninteractive. These terms are explained in Chapter 3.

What use is a management game?

Good use of management games is difficult, so what are the rewards that can be expected if they are used successfully? What can the skilled user achieve with them? The short answer is that a good game will create greater involvement from trainees, bringing higher motivation to study and more learning. A game gets people interested because of the natural competitive spirit that

exists in the majority of human beings and because of its dynamic nature, always creating new problems to solve and new opportunities for success. It allows trainees to 'own' the training situation in a way that is not possible with other methods, for the way in which a particular game session develops is determined by the strategies of the players as much as by the authority of the instructor. To this extent it gets rid of the classroom atmosphere.

Management games are far less formal than other training methods and allow more physical movement. Players do not sit around in set places, they get up and move about, form subcommittees, prepare graphs, conduct research, argue and relax in a way that is similar to their on-the-job behaviour rather than similar to the conventional behaviour of a student in a lecture theatre. It is common for management games to be played far into the night without the slightest encouragement from the instructor and often in spite of his protests. Motivation is usually high.

High motivation is both the strength and the weakness of management games, for the task of the instructor is to use this motivation as a means of increasing learning. The question arises: Learning about what subject? The instructor's objective is to maximize the sort of learning which is going to be useful in the real-life situation of the players, not just that which is going to help them to win the game. This can be hard to achieve, for the more players become involved in the game the more their thoughts are devoted to the immediate object of winning and the less they reflect upon possible applications of their learning to the outside world. It is as if they shut off the simulated world from the real world by some sort of iron curtain, going out when the game is over to grapple with what seems to them a completely different situation. The reason for this is probably emotional, for the majority of people do not have working lives that keep them in a constant state of excitement. Nor do they have, as they have in a game situation, a very short time interval between making decisions and learning the results of those decisions. Nor is the competitive element so obvious or the manner in which companies are compared with each other so clear. Therefore the greater the enjoyment of the game, the greater the contrast with real life and the greater the tendency to see them as totally different situations. This is the problem presented to the instructor, and this is the reason why games are seldom well used by people who are unwilling to work hard with them. All too often the actions of the players are seen by them as 'game related' rather than 'job related' and lessons that are useful in the game (and could be useful on the job) are forgotten when the game is over.

If the first gain from a management game is high motivation, the second is variety. Often management games are played by a number of teams. Each team adopts a different policy, and each team changes its policy several times.

Thus there are far more situations available for study than there are in, say, a case study. What is more, each of these situations is genuine in the sense that it has been created by those present for reasons which seemed good to them at the moment of decision-making and which are readily recalled. Therefore there are not only more situations to be studied, but also more data about each of them and more willingness to discuss them. So it can be fairly said that a management game will provide an instructor with more learning material than any other method and a better opportunity to use it.

The length of time occupied by a management game can itself be a benefit. It is too seldom admitted that there is a positive correlation between the thoroughness with which people learn a thing and the effort that they expend in doing it. At one intellectual level this sounds ridiculous: Surely knowledge that can be explained in a few words gains nothing from being said more slowly or repeated more often? Does not the intelligent person grasp it at once? Yet intellect is only one of the characteristics that is involved in the learning process. There must also be an emotional evaluation of the importance of the knowledge and this tends to relate to the emphasis placed upon it by the circumstances in which it is offered. Time is not at all a bad measure of value, and if certain items of knowledge are thought to be worth a major allocation of time then the message of their importance tends to get over more strongly. A similar argument applies to the difficulty that a student experiences in mastering an area of knowledge: the more work he puts in to achieve understanding, the more highly he rates the understanding when he has got it. There may be no difference in the knowledge offered in a half-hour lecture and a two-day business game, but there is a *major* difference in the attitude taken towards it by the student.

A further benefit from management games is the opportunity for students to examine and reflect on their own behaviour — and to do it within a short time span when it has greater reality and has not had time to be rationalised away. Awareness of the effect of his personal behaviour is most necessary for a manager, but it remains a difficult area to approach. Typically, men see the manner in which they behaved in some situations as being the only sensible manner available: they are unaware how powerfully our behaviour is conditioned by past experiences and acquired values. They fail to consider various quite realistic options because they have become predisposed to see them as nonstarters. And since their behaviour is already identified in their minds as 'right' they do not see very much value in examining it from the viewpoint of another. There is no realistic alternative, so why bother?

There are behavioural games now in use that can help. There are some that show how predictable certain forms of human behaviour can be. There are some that show the damaging consequences that follow from behaviour seen

by each of two opposing parties to be 'right'. There are some that encourage students to explore new and unfamiliar forms of behaviour in an attempt to break free from a stereotyped pattern. Such games can be valuable and effective because they enable a manager to behave differently on-the-job – to be visibly different in what he says and does in his interaction with other people.

2

Definitive model-based games

The traditional type

This title is chosen to distinguish the oldest and best known type of game. It is probably still the form most commonly thought of when the general subject of management games is raised. It is similar to a contest in which one person thinks of an object and another person endeavours, by asking questions, to discover what it is. The rules of such games usually restrict the manner in which questions may be put, and require the person questioned to answer truly. The difference from this sort of party game is that the thing to be identified is not an object but a relationship, and the questioner is seeking to understand this relationship well enough to be able to make use of it for his own purposes. Putting it in business terms, the thing concealed might be a price/demand relationship intended as a very simple picture of the way the sales volume of an article varied with the amount charged for it. Seen as a table, it could look like Figure 2:1.

Figure 2:1 is a 'model' of how one particular market is believed to behave. Even a model as simple as this contains a significant amount of information: it shows that sales are expected to be greatest if the article is sold at £3, and will fall off if it is more expensive or less expensive. The idea of lower sales at a higher price is an obvious one, but lower sales for a lower price is a slightly more sophisticated concept, suggesting a feeling among customers that a particularly cheap variety of this product is hardly credible. The model also shows that sales first decline gradually as the price moves away from the ideal level, and then at a faster rate. It shows this happening more quickly as the price falls and more slowly as it rises, meaning that some people, at least, are prepared to pay high prices.

In a game based on this model the players would be asked to decide upon

<i>Price asked £</i>	<i>Number of units that would be sold at this price</i>
1	80
2	100
3	110
4	100
5	90
6	80
7	60
8	40

Figure 2:1 Price/demand relationship

a price to be charged for the product during one 'time period', which might simulate a week or a month or a year. Once the decision had been made, they would be told the number of sales achieved during that time period. In effect, they would have been given one piece of information about the model. To make clear some of the terminology:

- 1 The thing that players are asked to decide on is called a 'decision variable'
- 2 The fact that they are told after they have made a decision is called a 'result'
- 3 The relationship that determines what result should follow any given value of the decision variable is called the 'model'. (The result is sometimes referred to as the 'output' of the model)
- 4 The person who administers the decision/result process is usually called the 'umpire'

It is fairly obvious that there are other aspects of the game which take place before this interface between the players and the model. For instance, the players must be given some indication of the range of decisions worth choosing. This information is often called 'starting data' (being part of the overall description of a management situation, which is sometimes called the 'scenario'). Once a result has been given out by the umpire it has to be translated into business terms and in the example in Figure 2:1 it is necessary to multiply 'number sold' by 'price asked' to get 'revenue received'. It would be necessary to subtract the purchase price, or production cost, of the number sold in order to arrive at a profit or loss figure. If, in the example, the purchase

price was £1, the maximum profit would be achieved if the article was sold at £6 a unit. Note that this is not the price at which the actual number sold is the greatest, emphasizing that the player's task is not just to get the largest number sold: it is rather to use the relationship built into the model to achieve some other objective. There is, therefore, a phase in the game that can usefully be described as 'interpretation of results' and there is obviously an 'objective' for which the players are aiming. This same word is used to indicate the intentions of the instructor, describing the effect (in terms of learning) that he hopes the game will have.

One other term that needs to be made clear is 'convention'. It is already obvious that rules play a major part in this sort of business game, and sometimes they enter a grey area in which they are unable to make much of a show of simulating reality. In the example used, it will have been noticed that price is given only in units of £1. This would never be the case in reality and a player might well ask: What is the point of having such an unrealistic rule? It is there as a concomitant of the extremely simple model and has become a convention. A convention found in many management games is that sales only become known at discrete intervals, usually the end of the time period. In real life a business obviously keeps a cumulative record and would be able to say what sales had been achieved up to a particular date and, hence, what the total for the month (or whatever time period) was likely to be. If a thing is described as a convention it suggests that there is a degree of unreality present, and that it is attributable to the mechanical construction of the game.

Since traditional model-based games tend to dominate the field (being by far the oldest established) they are described in detail in Chapter 3, and Chapter 4 is devoted to the umpiring devices associated with them.

Puzzles

A puzzle does nothing more than is done by a good examination question. It offers a problem to which there is a definite solution and which students should have sufficient knowledge to solve. By way of illustration Figure 2:2 shows three production shops, each containing a small number of machines. Each shop is controlled by a foreman, and the three foremen report to a production superintendent. The numbers in the boxes each indicate the presence of one machine and its production capacity over a given period. The article being made in the factory has to be processed in each shop by any one of the machines (within a shop they all do the same job) and it passes from shop A to shop B to shop C. The student is asked to assume the role of