

The Falcondale Collection

Stafford Beer

Initiates an Audience into the World of
Systems and Managerial Cybernetics

Session 8

The Viable System Model:
'The Outside & Then'

At last you have got the official diagram.

You will see why I didn't give it out on the first morning.

It is awfully complicated and it's the result of years and years of refinement.

As you will see Systems 1 of which there are only two examples are at an angle and the reason for that is so I can get to the environment in both levels of recursion, you see the idea. The reason why I wouldn't like to give this out first because it's not until you get the really rather carefully drawn diagram that the argument about recursion becomes demonstrated. You take one of those things that is at 45 degrees and turn it through 45 degrees make it upright and of course it is identical with the whole model, but identical there isn't anything missing. When I started off I had mathematical set theoretic expressions for all this in order to prove the isomorphism that is to say they are identical. No one could understand that, not surprisingly, so I reduced it to a drawing where you can see it quite clearly you can pick on one of those lines and find it at the other level of recursion in every case, I guarantee. So we have got a very powerful tool here, and the other thing that becomes clear from looking at this is the connections between the two levels of recursion. Now one of those connections is the embedment of the lower level of recursion as a viable system but if you look closely at all these lines. What do we see? We see that in the higher recursion System 3 and System 4 both have a black dot in them which is reproduced in the lower level of recursion also in System 3 and System 4. This is the kind of linkage we expect to find making cohesive the whole organisation that we have decided to study. You must expect to find that, but you won't very often. Is there anything you would like to ask me about this diagram as such. I want to go back to the Metasystem which is the thing in the big box, namely 3, 4, 5. in a minute. Let's look at it more closely because we didn't finish it last session.

But apart from that, is there something you want to ask me about, especially about recursivity?

(In the VSM diagram; figure 37 in Diagnosing The System) The second System 1 at the bottom has got a line from the System 4 box is that just basically saying that should go to the environment? [see over]

Absolutely. It's supposed to be exactly the same as the one above it but there is a limit as to how much confusion you can create.

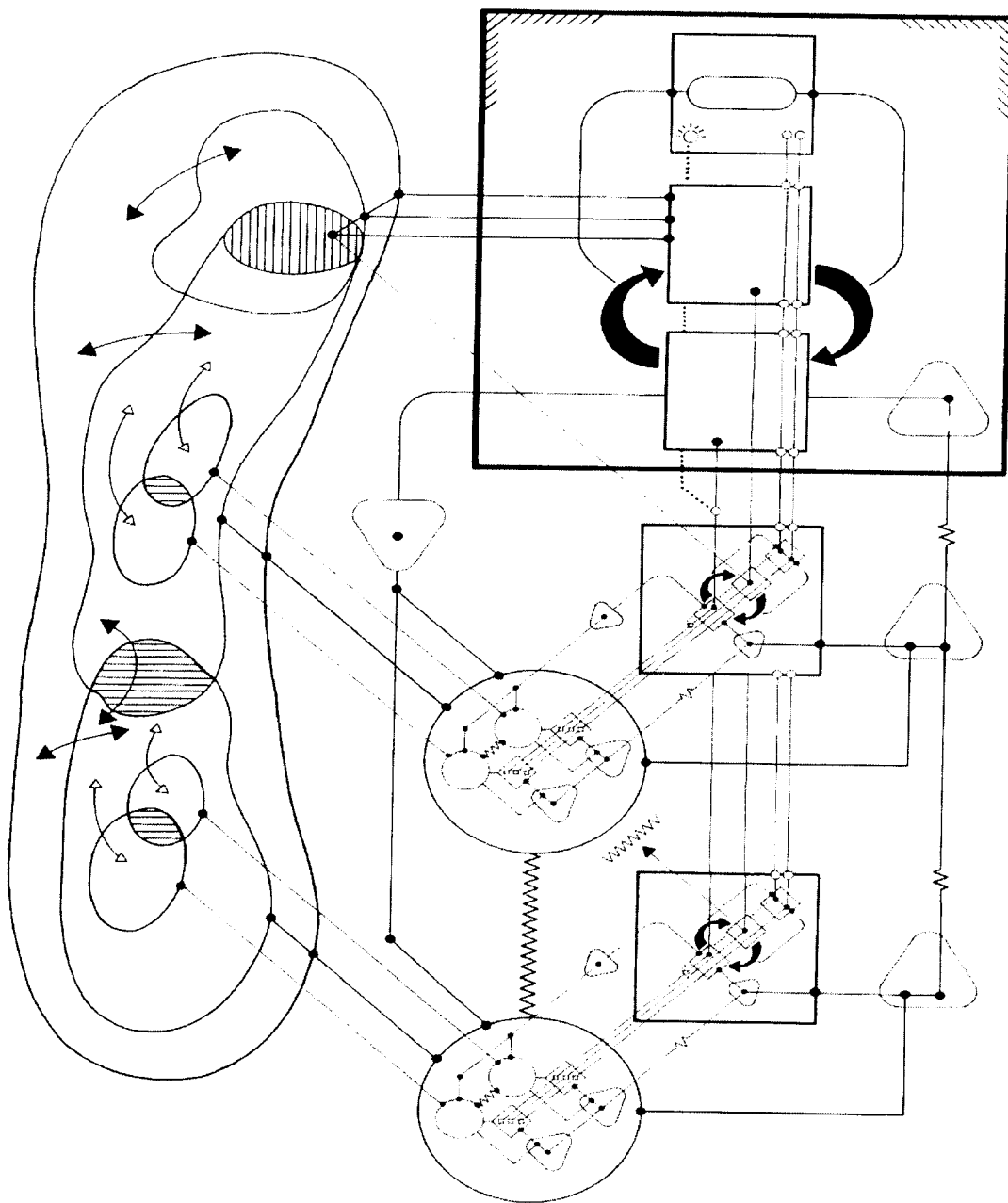
Now you are familiar with it and shown how to develop it. It's not nearly as terrifying as it would have been, is it? (laughter)

It becomes an old friend before long, especially if you start using it. How to use it is the next thing.

(Stafford hands out booklets) Would you all take one of these?.

What you will see here is the same chart only it is all blank and the purpose of this is that you can cut it where you like and paste it together and you've got the top of the chart and the bottom of the chart. How many Systems 1 are there on that chart?

Five.



Template of the VSM

Well if you only had three you would slice the top off the second chart and stick it on and you would then have three. The whole thing is completely uniform. That's right Lindsey, that's how you do it. Then you fill in your piece. What I would like you to do in the morning is to try and do that because we isolated System 1 already and we are beginning to talk about... we spent some time on System 2 and you take your own group; the Parliament, the retail, and so on, and try and make that. Quite a good idea to use a pencil unless you've got a fair photocopier in your luggage.

It's quite amusing, that under the copyright act nobody is supposed to copy things out of a book, and they are copied out of the book so in order to deal with that.....

Manchester University refused to copy my own diagrams. That's the kind of mess you get into with regulations that nobody understands, in cybernetic terms. So what I did was did Bakri return the book? I don't see it. Well you can have a look at it later. These charts are at the back and there is a big notice in red which says by consent of the publishers and author you may photocopy these charts but not the rest of the book. We had lawyers and all manner of fuss getting this done you can imagine. You may copy it so if you really wanted to study all this you would read The 'Brain of the Firm' and 'The Heart of Enterprise' but these come from the small book 'Diagnosing The System' which is a kind of a cook book for when you've already understood it, and that, of course, doesn't work. People just buy the small book never bother with the in depth discussion, pity, you cannot win. You can use those so that means if you were going to arm yourself to do this work and you buy the small book or even borrowed it out of the library you could photocopy all these diagrams. Make yourself a lot of those you see and it does save an awful a lot of time. You get sick of this I can tell you. That's the second one. The next one, take a look at this.

This chart is to deal with System 2 and System 3* and what you've got here is one unit of System 1 just for the sake of positioning it. It enables you to nominate 5 different Systems 2 and different Systems 3* so you may get on the right hand side, you would get house style and would get safety rules. Uniform accounting procedures these are all System 2 things. So that's to help you analyse that. Then this is to help you analyse any homeostat that attracts your particular attention.

Remember what I said to you. On this full chart, if you started counting all possible loops at all levels of recursion you are going to have thousands of homeostatic things to study. I said to you, not long ago while you won't be able to do that and a lot of them would be repetitive any way. So what you do is find something particularly attracts you. Now a very outstandingly good example of that is the homeostatic linking to System 4 to the outside world. Where you might very well want to make a detailed enquiry, and that's how to do it. The last chart gives you an example so you don't forget what this is supposed to mean. If you just take a quick look at the things I've written in there. We are making an attempt to nominate right in the centre of the diagram a criterion of stability. Sales in this case. The various units are supposed to have Sales within that bracket. Don't forget the definition of a homeostat. I bet you've forgotten it. Anyone going to tell me?.

A stable loop.

That's good Lee.

Goes like that. It brings it back to me to keep a critical variable level

What's the next bit? within physiological limits.

Because no one is going to come along and give you a thermometer inside your body to measure the temperature. It's the interplay of things that settle these criteria. As a manager you are entitled to say "well these sales are lower than I'd like and I would like to get them stabilised at these levels". Then you can see whether there are homeostatic arrangements that are likely to get it there or not.

Now, have you had time to take in some of those nominated channels and transducers?. So, that is the tool box as it were, for doing all this, and there is another thing called the Tool Box which has just been published by a friend and may I say Allenna's old doctoral supervisor, same fella, his name is Barry Clemson, in America, who has just published a paper about a piece of software that is called Tool Box which gives you the VSM on the screen and enables you to go zooming in on bits of it and write stuff in and its fun. It's a very good thing, don't you think. Sop, the reprint of Diagnosing The System will have Barry's new paper in as an appendix, he's kindly consented to do it.

I said to him on the phone "What can I tell people who want this?", and he said "Well, you can only send them to me". And I said "You are not telling me how much", and he said "Come off it Stafford, you know me, if they've no money I shan't charge them, but if they are General Motors I shall charge them about a million dollars". And if you know me, I'd do the same thing.

Can you tell me his name again?

His name is Barry Clemson, and the paper is in the current issue of Systems Practice. Now, do you know this magazine journal? It comes out of Hull. Now, Hull is a very burgeoning department of systems people. Two full professors, Michael Jackson and Bob Flood. You've never come across this? Isn't it amazing? And two full professors in one university is not bad, and a whole group there. They're boiling away; they do a lot of publishing. Plenum press in America publishes this journal, they edit it.

Now, I've got a copy of that paper here if anybody particularly wants it, I guess we can fix that up but I'm not about to lumber my friends with photocopying enormous papers for everybody and that goes for one or two other things I've got.

I want to be helpful. I don't want to doosh them out for the sake of it. If you feel you could use it, you are welcome.

So, there's the tool box plus a bit of software availability and good luck with that.
Now, let's go back to where we were in the detail of the meta structure which looks like this.
I am not going to draw the whole thing now.

I'm talking about the 'outside and then' which is the with these enormous arrows here and that's what our session after dinner will be about.

I've drawn them like that because they are bound to be very high variety. Just think of the seriousness of that of getting that balance.

I have a theory that every major business failure that I've come across is in some way or another deeply dependent on the failure of that homeostat.

Now, I am going to give you an example. You are all too young to remember the collapse of Rolls Royce, when was it?

Still going isn't it?

Well yes, but it had to be ... propped up with government ... subsidised ... and so on.
It blew up altogether.

This was a very remarkable business. I wish I could remember the date. I presume that it was in the 70's. It must have been in the 70's, but I cannot remember when.

I'm there in Manchester Business School along with the National Westminster Bank Professor of Finance, whose name was Clarkson. Professor Clarkson and his Reader used to lecture on the failures of top five hundred companies.

It's quite amazing how many of them go down, you only have to figure in the book 'In Search of Excellence' and you'd probably be bust in a couple of years. Nobody seems to find this funny.

You know this famous book. I think it's excruciatingly funny.

So, Professor Clarkson and his reader said to each other, you know this is pretty trivial, we pick up the latest crash and we analyse it. That's wise after the event. If you come to think of it somewhere in the list of the top 500 somebody is going to crash, and if we are so clever we should know who it is. They went through the balance sheets and so on and they came out with Rolls Royce, they started to give seminars at Manchester Business School about the collapse in Rolls Royce. What a beautiful example because Rolls Royce is the epitome for non collapsing.

People say this is the Rolls Royce of pens don't they? Stupid as it may be, it's got into the language as a symbol of perfection and here they were saying it's going to crash. British people

are very urbane and they said “yes, thank you Professor, that’s a very interesting seminar. He finally ran into a group of top executives and they were very angry and they said you can't go around defaming one of our top institutions and one or two of these chaps knew some of the Directors of Rolls Royce so they went to Rolls Royce and said “do you realise what is happening here?”. You better get these two maniacal Professors to come and give their seminar in the Board Room. So this was duly arranged and they did. What happened was totally predictable. The guys said afterwards how very stimulating thank you very much, and crashed.

There is something awfully English about that.

The reason. There was a thing called the RB211 engine which was critical to one of the big jets which Rolls Royce made and what they did was, in accounting terms, the professor of accounting, and I'm not too clear about the details now but they funded the R & D out of income, the way that the accounting profession does not approve of, and thereby in a sense spent all the money twice.

That's fine, you shouldn't really do it. You can pick it up as an accounting deficit but look at it in these terms. What it means is you are putting too much money into development in System 4 that you cannot sustain by your on-going activity in System 3.

Of course the counter example is the buggy whip not doing enough System 4 to realise that the whole thing is going and visibly putting all your money into improving a worthless product.

I am trying to convince you that this is the most important thing on the board, and as I explained to you I drew it from biological reasoning that this would were to make or cut.

We started talking about what sort of functions are System four and we made a whole list. You left out Corporate Planning, and I was saying , well that’s really it, you know. Let's look at all those people, if this is supposed to be an integral function dealing with the future and the Company’s whole posture in regard to innovation. Don't you think it is extraordinary that none of these people ever talk to each other? I may be exaggerating a bit, but not much. Have you ever heard of a market researcher who has found out what the R & D boys in white coats are doing, and do you think that the R & D boys in white coats give a damn what the market research people are thinking? Therefore, following their technological nose they can see where they are going and they will pursue that. This is completely crazy. The next thought is to say put them all in one room. Well that is silly, as well. What you've got to do is provide some method of focusing System 4, that's the word I like, you don't have to necessarily move anybody, you focus them. The case of Corporate Planning is particularly bizarre because Corporate Planners have tended to have enormous power and influence and they are very eminence grise sort of thing lurking round the background plotting. They write enormous reports. There's so many people in the field of management, that I don't exempt all these consultants we've been talking about whose worth is judged by the weight of the report; weigh it and say “that’s worth fifty grand”, you know and if it were just one single piece of paper saying stop this at once, it wouldn't be worth it.

Gradually, Corporate Planning, seemed to me to be getting into the situation where it was writing all these reports and they accumulated on the shelf and what it really said over the top, nobody could read this. If you ever had to take a decision you better read all this first. Well if you've got to make a decision and you are in a hurry, your not going to do that. Most of this effort was wasted, it seemed to me. As to whether any of these people were consulting the R & D or the Market Research, they were not, they thought essentially about taking over somebody else or grandiosing the Corporation.

I was very much confronted by this when I was Development Director of International Publishing which was then about ten times the size of what it subsequently became. I'm talking about the 60's. I had all this going on, I was responsible for all the R & D and in order to save money, because R & D uses a lot of floor space. The main building is in Holborn, do you remember the famous Mirror building the red one in Holborn, I took R & D out to Feltham which is near the airport and that paid off in terms of money and paid off in terms of the fact that the people doing it were not bothered by anybody, because no one got that far, except me. I used to go from my home every morning to Feltham then into London for lunch and home again this way with a different secretary on each leg of the trip. I spent hours and hours in this darned car. There they were, and I couldn't get my fellow Directors to visit the place, because it was just too far, and they were too busy. They'd say we're sure your doing a great job Stafford. I was responsible for all the computers. The number of computers was absolutely terrifying. We had 4 1108's for a start and about 10 of the 408's, this is Univac, do you remember these machines, and the IBM 360-50, 360-60, 350-70 we had all these things, too long ago archaic now. They cost millions and they were all over the Company and I was in charge of all of them and nobody could give me a complete list when I got there. As to whether you could unify that system such as having the same software on different machines, nightmare.

I am trying to give you a picture of what a mess System 4 can be, and, why it is that when you start talking about it through the perspective I am offering you nobody knows what we are talking about. They say well thats Feltham, and these are the computers what do you mean, what's the connection? Then I took over market research. They were all working out of Holborn and wouldn't move, because it was Head Office, and prestigious etc. The Corporate Planners wouldn't speak to me because they said they where responsible directly to the Managing Director. How do you provide a focus for this lot? I did my best. I started mixing them up and started having quite expensive meetings where everybody came to the same place and read papers to each other about what they were doing . I got severely told off because nobody could understand them which was a tendency, of course, to try and pull the wool over peoples eyes. What you are trying to get is the notion across that System 4 is in fact managing the future of the Company. The other thing I want to say about System 4 is the thing I asked somebody to remember.

Something I was supposed to remember?

Someone was talking about the responsibility of line staff

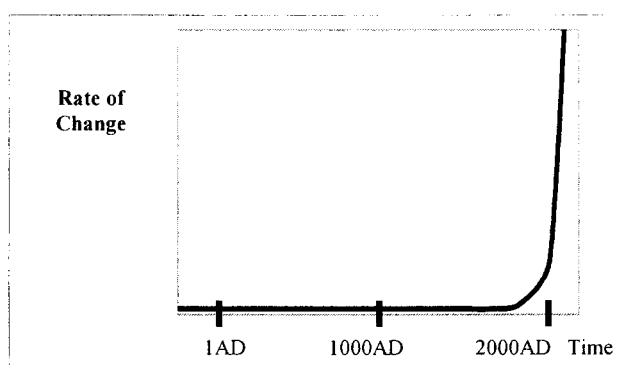
You were saying about the trust and control dilemma it works both ways its one thing doing it, its another thing about letting them do it, so they think they've got a responsibility and at the end of the day they are not allowed to actually use it.

That's right.

I find this I replied well I got into very hot water about the computers and I'll tell you about them, and that's now.

Early on in the modern management consulting, there was a guy called Colonel Irwick, Irwick Orr does that name still as a consultancy company?. Note the rank, Col. Irwick brought into high prominence in the civilian field the army conception of line and staff so the line people had the authority and the responsibility and the staff people were advisory. Now, after I had made this model and thought about it, I came to the conclusion that this was dangerous nonsense, except that it was accepted wisdom, everybody knew this, and it's dangerous nonsense because the rate of change that you will see in this kind of graph, the acceleration of the rate of the rate of change, is hair raising. It's at least exponential and probably hyperbolic. This explosive curve. You try to deal with that. Let me just draw that for you. Its fairly graphic.

If you take time going this way and go back. That's 1 A.D. that's 1,000 A.D. that's 2,000 A.D. This a pretty compressed graph. You take almost anything any quality of human abilities. Take the speed of travel. Someone gets on a horse in 1 A.D. and he gallops for 1,500 years or so, at whatever that interval is (Stafford refers to graph) this is the pay off. up here 20 m.p.h. Then somebody invents the steam



engine - and this line starts to go up, and it goes like that And this is the escape velocity from the atmosphere. You can now go at something like 28,000 miles an hour. Now take something else - computation.

Back here - the Romans were going III, IV, V, VI not going very fast. so again you are counting essentially on your fingers and toes, for a long time and then somebody starts in my book that you were looking at Lee, quite late on people like Leibnitz, Pascal started to make machines and then that blew, and now you know nanoseconds and all the rest of it. It's completely unbelievable what you can compute. I'm not going on with the examples. I put it to you. You will not be able to think of something that isn't doing that.

What I want to draw your attention to is the effect on us, as human beings is the following, that we have been brought up, culturally, at least for the last two thousand years with a life span, there's a life span that's an exaggeration because that's a thousand years and there's not many over sixty five years old, but you see what I am trying to say, we are born, these lines that I am depicting, go through our life and we die and everything is much the same nothing much has happened. But if you are born here [Stafford refers to diagram again] as we lot were those lines are tearing through our guts. You decide to buy a computer and you get all the latest issues of the Laptoppery and before you place the order for the best buy and tomorrow something comes out with 1,000 times more capacity and a quarter of the price, you just can't keep up with it. It's the same in everything. People replaced all their old gramophone records with modern ones then before you could say knife it was C.D.'s and so forth. This makes the function of adaptation, which of course, is a System 4 function, extremely difficult to implement. In a way it never was before, and I believe that this is qualitatively different just because it's faster we tend to say 'things go faster these days' but because of that argument of what happens to you in your lifetime I think it's worse than that. I think it's something we are not adapted to, we don't know how to handle this. Then when you put it in the business context and talk about investing in all this stuff.

I like to tell stories that are real.

Go back to the I.P.C. thing. I was joining a Board who believed that publishing was about putting ink on paper and said you can make that faster, fellas. and we could and if ever you've seen a modern newspaper printed, you know you can't see it going by it goes so fast. Of course, I knew I could put a lot of sophisticated electronic controls on that but even so it's a kind of super Caxton. 500 years and nothing's happened except its got faster. I started thinking about that. Now if you look at the speeds and at the rate at which computers operate I rapidly realised that every copy of the Daily Mirror, and I told you that there were 5 million of them, could be tailor made to one reader. Except that every copy had five readers. What you would do is; you would edit a newspaper, this thick, you would carry Lees profile, and you would find out what he was interested in and the computer would print the appropriate pages. I found that this was technically possible. You start thinking, and this is where the word quantity changes to quality, it seems to me, because if I were producing 13 different newspapers for you people I could ask you all what you wanted to know, and that would be a nice legitimate thing to do, but I could tell you what I thought you needed to know, which is a bit what happens now, thank God it's not as targeted as I'm discussing. I started to get extremely worried about this, because, look at all those computers why do you think I had all those computers ? We had a Magazine Division which produced Woman, Woman's Own, Woman's Realm, Nova, Woman's Journal the whole range of the market. We had a Technical Division that's doing Electronics Weekly, which is doing four hundred titles. Nobody identifies this. People buy all these magazines and they don't realise it's the same thing, it's just souped up a bit in different ways, by the same publisher.

You've got people sending premiums and offers filling in forms and mail ordering stuff and winning prizes and all of this. This is all in computers. Now I very rapidly realised when I gave evidence to the United States Congress in 1970. Now that was a Hell of a long time ago, I had already got something like 30 million profiles in my computers, and they had 50 million people in the country. These profiles are deducible. Now I could say, Kathy here, what do we know about Kathy; we know her size because she keeps ordering interesting garments, we know that she has got a child because she orders things for the children. She has three kids. You know their ages; 3, 5 & 7. We know what she reads she has joined the book club, to improve herself.

She keeps buying presents for her husband. Why is Granddad who buys books on the Holy Land also buying pornography from one of the other publishers? Can't you see how rich this could become? What I said in the evidence to Congress, which, by the way is printed in this book Platform for Change, was that if we weren't damned careful we could be in a totally dirigiste,Oh right wrong word again - tell by the frown. It's a directed society it's a society where you can be ...this is Orwell, .. Huxley's Brave New World all coming true for goodness sake. These things are very serious and that raises the issue of what is your ethical stance going to be about any of these developments, and that's where you need a System 5. However, going back to the main line of the story of the focus of System 4. I was doing so many things with electronics now that my colleagues who thought about paper and ink could hardly believe. Now, I started the first profitable electronic publishing outfit in the world which was called SCAN (Stockbroker Computer Answering Network) (Stafford has mentioned this on an earlier video) which put a computer terminal into the stockbrokers office and all the data was fed in over night on the previous days trading, adding in any balance sheets that were published and you could find anything out. This was pretty damned powerful. That was in 1966 or 1967.

Because people haven't understood the impact of this, here we are nearly 20 years on and still not developed properly. No publisher can handle this. I said to my publisher whose bringing out all these new books, I am going to make some video tapes next week. That's here. Oh, well yes, good luck. You wouldn't think there are three books devoted to this material and it should be in the cover, or something. So, I determined then, in my focus System 4 capacity that the thing to do was not take over Reeds, which is what the idea was and vertical integration, Reeds owns all the trees in Canada practically, at the last count. So the boys who thought it was about paper on ink wanted to take over Reeds and we already had Don Ryder who was the Chairman of Reeds on our Board and we had more than 30% of the share holding in Reeds so we virtually owned it anyway, and I thought, no, we don't want to do that. I wanted to take over Plessey and you can see why. I didn't succeed but I came rather close to that one, because I had collaborators inside Plessey in roughly my type of position, and we used to meet in secret, it was all quite exciting. I'm getting off track.

I am trying to give you a flavour of what a System 4 ought to be you won't find those things around here. You find all the bits and pieces and nobody with the realisation that it is about the 'outside and then' and it is in homeostatic balance with the existing System. So that is what I am trying to punch home.

As one technology takes over from another (Stafford gets up to diagram) again payoff time, what happens is that a new technology comes along and you investigate and it doesn't pay off for some time. Not much anyway. It's flat. Then it begins to grow like the clappers and then it fades away. Why does it fade away, because a new technology is overtaking it and that is going to be more expensive and it's going to start like this and then it's going to do that. There is the interesting question. If you are soaked in technology A as IPC was in paper and ink in the mode of publishing, and you can see electronics coming along behind which is the blue line, at what point do you level off your investment in paper and ink and research associated with it, and start investing in the electronic version?

Where they cross?

Well yes you don't know where that is, this is notional you see. You certainly don't know whether you've crossed the second time, which is the crucial one. So you have to guess. You'll make studies of course, but you are going to be wrong, and that is very interesting. About this time I invented Beer's law of economics which said the cross over point happens two years after I retire as a Director of this Company. You think that one out. It's my perfect excuse for not doing anything. No it's all right, I am a director, I don't want the Company to go bust in some crazy new scheme just give me my pension and I'll go and this won't happen till afterwards. Full of traps. What you have to do is try and estimate that.

The question of how to organise the 3-4 homeostat is very difficult. I haven't completed the argument about the line and staff. These staff people who were supposed to be advisors. They come along and they are highly manipulative they think they know more, which they probably do, than the Managers they are trying to serve. So the typical Corporate Planning Report says something, I am going to outrageously simplify it, OK there are basically two courses. A and B Follow course A and you will probably be millionaires by Christmas, follow course B is very interesting but we'll probably be bankrupt by Easter. Now you are the Manager, you have to decide. What?

I told you it's an over simplification, but things are done like that, and you think what they are done about. If you want a new Computer, you don't ask old Harry in the Cost Dept., what's the best machine. You've got a new intake of nice young graduates who have got to have the newest technology coming out of their ears and this little group determines what the next computer is going to be, if you've got any sense, and if you haven't they will do it anyway and find a means, and they'll say I am not working here without a Ulysses X1 16. They plot and they push it up the line and it goes through because nobody understands what the choices are.

The choices are put to the Board and they sit there saying I have studied this report Chairman and I think Anybody that is any good is going to manipulate that through. I realised and I insist on this that the people who used to be staff are actually taking all the decisions or most of them and certainly the ones that are technologically based on which the future of the 3-4

homeostat depends. So I say they have got to be accountable. It's no use saying after the event you told me to buy that.

I'm sorry I'm only the advisor.

When I started preaching this when I first became a Professor in 1969, in Manchester Business School there was total uproar, because everyone there said Stafford you are trying to seize power for people like you. I said you must be nuts, I'm not trying to seize power I'm trying to hold people accountable. At the moment they are swanning around pretending it's nothing to do with them. That is when that row developed. That is why System 4 is on the vertical axis and not sticking up at the side as it always is on Organisation Charts. You've got a thing out here somewhere reporting sideways to the Managing Director called Corporate Planning, we've got a Scientific Director and a thing out sideways saying to the R & D Dept., and you've got a Marketing Director and a thing out sideways saying Market Research and no focus and no responsibility. I don't think that is good enough. I say these things are all accountable and that is much more important to get that across than hold somebody right down the line accountable on the lines that we were discussing how to bring that home and so on. It's trivial compared to this kind of accountability in which the whole future of the whole Company depends.

I was saying, far more important than these reporting groups which come down which need to be these, they do exist. But far more important is the way I depict this, I showed you on the last chart. Is to say You guys on the board who are supposed to monitor the homeostat if you don't get that balance right the Company will blow up. The same goes for the country, you know, if the Government doesn't make the right investments and so much R & D is sponsored by the Government now, either directly or indirectly, because Companies can't spend money on R & D unless the Government hasn't bought six million aircraft or whatever it is going to do.

The thing is enormously artificial and yet we like to pretend we live in a market economy and the whole thing is as screwed as possible. This gives System 5 a very peculiar role, it seems to me, and I believe that most of it has to do with the ethos of the Company and what counts as good behaviour. If the Directors of the Company are seen to be rip-off artists it will go right through the Company, like that. This is how corruption happens in countries as you know you get some dictator set up in a banana republic who orders gold bed and rides around in Cadillacs and people say Oh yes, we are in on this too. Just goes through the whole system like canker.

Whereas if it is fully understood that there is no monkey business, you see, and you are out, at the slightest.....

You can makeand people do. Look what has happened in Government in my lifetime when Doctor Dalton, was Chancellor of the Exchequer, he said something injudicious about his Budget Speech and instantly resigned, but now you could go to bed with practically anybody who will do and tell them all about it.

It's a completely amazing thing. Has anyone read Alan Clark's Diaries ? Oh boy, they're really good fun. Unbelievable. This is a Defence Minister, unbelievable, jolly good read too. I didn't stop laughing. I'm talking about ethos, can anybody say anything enlightening about that, I'm not just talking about malpractice either? What is the Company really trying to do?

If you look at some of the issues are they trying to does a company see the future of the economy as part of its responsibility so that in terms of employment or training and terms of employment concerned about education ... that sort of thing

is it about surviving?

Of course, this is the ultimate issue. Many Companies have a very responsible attitude and are not just set out to make money. The huge thing that happened during the so called Thatcher Revolution was that it constantly urged people to save and the only thing that mattered was money. It's going to take the rest of my lifetime to recover from that, I think. It's very very silly stuff.

It is about the bottom line

Absolutely.

What happens to the planet, what happens to the community what happens to training the whole thing is very obscure. Plenty of Companies have been much more responsible than that in the past. Look at this first Steel Works that I was in Samuel Foxes in the valley of Stocksbridge, outside Sheffield had a community totally dependent on it and half their policies were about the eudemony, Aristotle's word meaning well being a special kind of happiness, not quite euphoria but well being. They tried to make life pleasant, for those people of course in a most absurdly patronising and mingy way, but they had this in mind. Of course, the environmental business the awful cynicism that has developed about Companies that try to claim to have this high on their list of priorities when all their expenditure is a cover up job to try and prove that they are responsible when they manifestly aren't. It's hair raising the oil companies it's just terrible.

There are companies that are usually much smaller ones who say its precisely to produce ... bridges that don't

I suspect that we will just have to recreate the industry after this debacle of the bottom line. Lot of signs that this is happening. There are lot of Co-ops. Well that is a different kind of business altogether.

Anybody heard of SUMA?

It's the Co-op in the North that feeds all the Health Food shops it's a huge affair, and my friend there has tried to design the whole thing on the viable system model. Well that's nice.

Especially you see the way it is drawn, people say it's a hierarchy, I will have none of it, it isn't you see. You should know that by now. The centre of this is System 1, all the other things are services to System 1. So too bad if you're System 5 and think you're a big shot.

One relation to that with ethics and what we talked about ... this thing about mission statements they churn out there is a company I know of that basically a week before they got ISO 9000 accreditation came up with this mission statement which they issued out to everybody in the company, the timing I am sure was totally coincidental, but that's what happened and this mission statement basically had the clear statement that their aim is to make money to the benefit of shareholders, directors and employees alike. Unfortunately about a week after it had been released there was an advert in the local paper talking about the Board who had just received huge pay rises at the same time the annual pay agreement had been going on for about the previous three months arguing over about 0.3% rate. The first thing you see is the article stuck on the notice board and one of these cards pinned next to it and the hypocrisy of that is not quite meeting what it is saying.

Well done.

It's a shame and everyone loses heart and the whole thing

It's very counter productive when that happens.

The word that's got very popular in North America is Stakeholders. Have you heard that word. It includes everybody who has a stake in whatever that includes customers, suppliers and the village and the works. It is so hold-all; it's a portmanteau; catchall is the English word, perhaps it's no use. Maybe you need to itemise those things.

Is that connected very much with System 2 it seems to balance contradictions

I see what you mean.

I think that all the 5 Systems are involved in the ethic but I think the ethos, the feel of the place. The ideal is certainly set from System 5, if they want to set it. Then, of course, it is going to be reflected in terms of what each of the other sub-systems does and you can follow any notion of that through. That is why the model is so useful. Nobody has asked me yet, but it will occur to you sooner or later. Why 5 sub Systems why aren't there 17 or 3 or something. Well, I've tried to argue on the basis of this necessary and sufficient, of course one could break it down more.

What I have tried to do is to provide a language think of this model as a language which is rich enough to talk interestingly about an organisation and not so rich that you have to go away for ten years to master the language. I have found that if I get commitment at the top, I can sell this language inside a Company, very fast and everybody uses it. It is useful. I have heard in meetings say "Oh for God's sake Jim, shut up, can't you see I'm not talking about that level of recursion I've come down two". Well, instantly you see it all. We are also used to, at top Board

Meetings, trying to grapple with the new cyclotron or the nature of the E.E.C., and they all end up talking about whether the office boy should get free tea or you are going to build a new cycle shed because it is easier, and everybody knows the issues, and they thump the table and feel better and the real issue is 2 levels or 3 levels of recursion up. So that does help and then again the sub systems you say I'm talking a System 4 argument here, you keep responding as if it is a System 3 matter, I'm talking about the future, and these little words become very useful.

What I'm worried about is if the sort of ethos is coming from 5 and you have a company which the ethos is great but corrupt and it happens to be making weapons and it happens to be the case that the government is selling weapons to which is then at war with yourself ... what is it that surely they need to be damn sure that there isn't you know that fortunately they the Scott inquiry so that it didn't become that everyone talks about

Private Eye

that if they thought "My God, suppose someone a boy in the village actually signs up (to the military) and goes off and gets killed and

They realise that they have made the shell that killed him.

so they've got to have to keep ...

I don't know how anybody can do it.

I have created many uproars in my life. I create terrible uproars, I can assure you. I was giving a Presidential Address to the World's Conference on Cybernetics about six years ago and I said the whole arms business was so complicated and so many people had their fingers in this pie that the best way to stop all that ... scientists should refuse to work for them, and if they starved too bad. We could get a fund up to help them. That really is going to pull the plug on the whole thing. Someone used the word hypocrisy about something just now. The steaming hypocrisy of the whole business of arms is, ... you equip third world countries who can't afford to feed, cloth, and educate themselves and then express surprise when they start shooting the Hell out of each other. What are they supposed to do. They are being manipulated byThe whole motivation and direction has got to be wrong, hasn't it? I think so, but then I am regarded as naive. That's not quite the word I would probably choose.

This 5 ... you've got your MD, the Board, you might ask them ... middle managers ... on this ethos and mission ... perhaps ... also on ... consultancy everybody round again what happens is that its gets lower down and need to ... middle managers ... workers, then it dies a death ... keeps going like this ... I have seen and then ... many companies do this, they are searching for something they don't know what they grab something and try it out ... I am concerned that at the end of the day, the whole organisation is so sick of it it's too slow

Exactly ... the slogans

How can we change that?

I don't know, I'm doing my best that's all I can say.

The trouble is you see managers don't seem to be as capable of serious thought as they used to be, and that wasn't very good in the first place. People are constantly demanding the new slogan 'the one minute manager'. All this kind of stuff, it's enough to break your heart. All you can do is keep plugging away, and the cover of my new book says Managers are getting fed up with slogans and realising that they're not or that is what they should be doing.

All you can do is try and recreate the thing, you see, you mentioned the specific problem if you run into a brick wall with your message. Don't forget cybernetics is the study of regulation which instantly recognises, in the first set of stories that I told you when we started that information flow is crucial now we have on the total diagram. Every line on that is important, otherwise it wouldn't be there and every line is actually a loop. Now what you have got to do is make sure that that works and what you are pointing to is a failure in channel capacity and transduction, down the system, and there is no use in saying Oh my God nobody cares, it just means that you are incompetent in your failure to design a system that actually works.

I'm still worried about System 5. It's going to intervene on 4's and they're going to be ... say someone in 5 wants a peerage and they reckon they'll get a peerage if they give enough to the Tory party, that's just an example, and they can't afford to give that much ...

Yes, well you're telling me. They don't want the sack do they? Give the poor bloke his ermine I say. Really, we are on the stuff that sends me into despair.

We have got to recreate all this somehow, and here are the tools to do it somehow.
You said you were worried. I'm worried about the time. I'd like to close this here.
We've got the whole model in our sights now.

I want to talk to you tonight about a very interesting phenomenon called Autopoiesis and I also want to show you this new technique which I think hugely affects the ability to deal with the homeostat.

One of you, Kate, has used this thing, nobody else here has.

This evening we will play these games and you can see what this technique is and I think that you will find it fun as well as interesting, and then tomorrow we will have a big wrap up session and then you can let loose so sleep on it ... try and get what is bothering you, out in the open.

Try and finish the puzzle and try and do your model.

Several of you have said things like the Chairman sitting in System 5. These sub systems are functions. They are things that have happening. Don't be too ready just to put just people there most people are all these things especially senior people in the Company the 3's, the 5's, the 4's.

The interesting thing is the ratio of their time. I once did a most amusing experiment whereby I asked all the Directors of the Company, I gave them all a little matrix with all the names of the Directors on both ways and said you put down the in round terms the percentage you spend in time on 3, 4, and 5, and 1. Very often the Chairman of 1 ends up on the Board or on the Management Committee of 3 Estimate that for yourself and for all the other Directors. The pattern that emerged from this was absolutely amazing, I must do it again some time, or you do it if you get the chance. Everybody thinks that somebody else is doing System 4. "You see, I am a down to earth man and I call a spade a spade and I'm 3". Or "I'm a bit more important than 3 I'm a 5". "He's the intellectual he knows about computers they're doing 4 somehow". You find out that there is this huge gap, there is no 4'ness in the system. I just want to end with this very dramatic statement, if 4 doesn't effectively exist

(Stafford gets up to diagram) which is often the case either because people don't know about it properly or because they don't get the focus. Let's pretend it's not there. Now look at this huge superstructure 5 collapses into 3 there is nothing to hold it up. This is borne out. The people in 5 used to be in 3 and they've been given their peerage so they are up here and very uncomfortable because they don't know what they are doing so they have got to collapse into 3.

They say I know all about that because I used to be the Manager of 1. They dive down here and are never seen again. My dramatic exit. If this is an animal and remember the physiology what we have here is a decerebrate cat. You can take the cat's brain out down to the level of 3 and keep the poor little devil alive with intravenous injections. He's all right, you poke his leg and there is a reflex action. That's it. That's the state of an awful lot of our management. It just response to stimuli and usually the wrong response at that, because we don't have the meta-system in place.

What you are saying is like a manufacturing MD rings round on the shop floor telling the shop floor what to do next

Looks as if you've seen that

So they don't want to give away their control.

They are too insecure to sit on the clouds there.

Well see you after dinner.