

Admin. 200 Materials

What we know about logs.

1. There are different bases: 10, 2, e, $(1+i)$
2. Log is an exponent
3. a) As $\log \Delta s$, for Δs .
b) If base is 2, it doubles. Richter scale
c) If base is $(1+i)$, fn. rises by $i(1+i)^n$ as $\Delta n = 1$
If $i = 1$, (c) is same as (b)
d) The % Δ is $\frac{\Delta y}{y} = \frac{i(1+i)^n}{(1+i)^n} = i$ as $\Delta n = 1$
e) The Δ in log, x the fn, $\approx$ change in the fn. when $\Delta n = 1$ (?)

E.g. $1 \cdot (1.05) = 1.05$

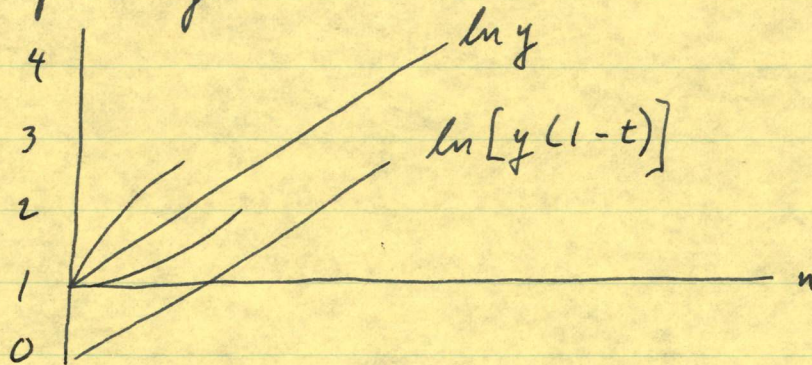
Or, $\Delta \text{fn} \approx \text{fn} \cdot \text{when } \Delta \log = 1.$

4 $\ln(1+i) \approx i.$

5 $\frac{d \ln y}{dx} = \frac{dy/dx}{y}$

6. Log grows linearly when growth rate is constant.
Conversely, if an exponential fn. has a const. base, as $y = (1+i)^n$
~~log y = n ln(1+i)~~ $\ln y = n \ln(1+i) \approx ni$

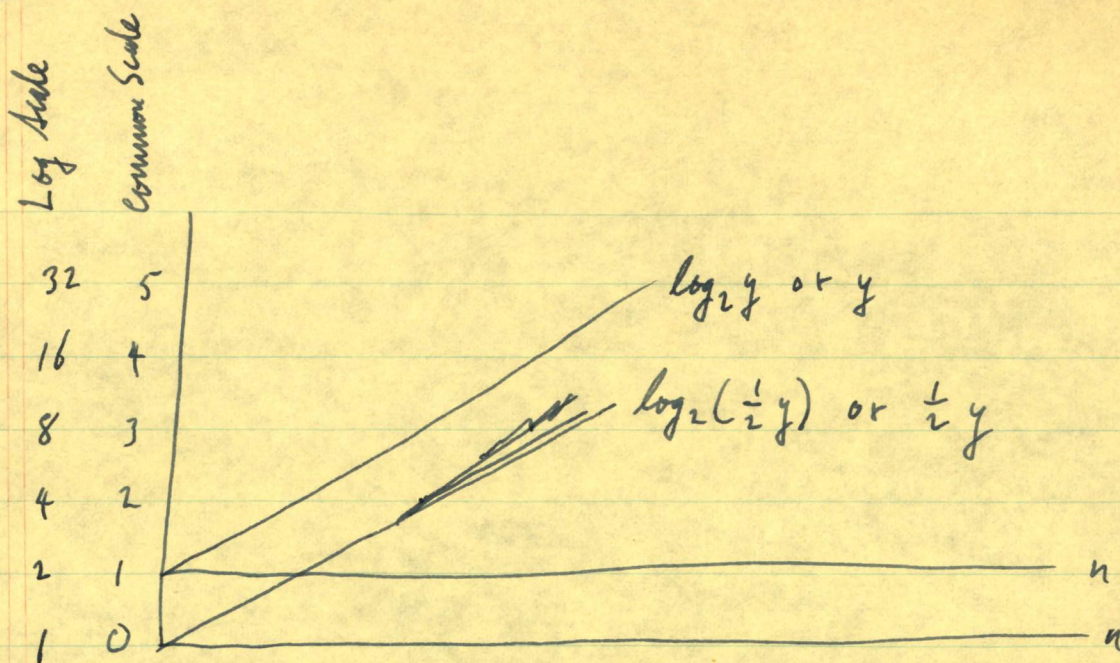
1. Graphically:



- a) Stat. time repr. const. growth rate, or % growth.
- b) If lines have same " " " "
- c) If $\log = 0$, $fn. = 1$
 $\log = 1$, $fn. = \text{base}$
 $\log < 0$, $fn.$ is a reciprocal, and < 1 . In growth rate ~~problem~~ studies & analyses, we usually begin from 1, and $\therefore$ never use negative logs.

d) If there are no negative logs, can use semi-log scale, graph the $fn.$ themselves. But scale never reaches down to 0, where $fn. = 0$

A double graph is useful, to show relations of log and function (next page)



e) Slope of line is rate of growth?

f) If base of fn. is same as base of logs, line is 45°.
E.g. $\ln e^n = n$; $\log_2 2^n = n$

Normally, base of logs is 2.71828..., and base of fn. is ca. 1.10, so slopes are $< 45^\circ$.

$$\text{Log } y = n \log(1+i)$$

$$\frac{\text{Base}}{\text{Log } 1.05}$$

1.05

1

2

.0704

e

.049

10

.021

If $\Delta n = 1$, $\Delta y = \log(1+i)$ or other base. So slope = log base.

With base e, slopes are $\ln(1+i) \hat{=} i$.

i. slopes = growth rates, with base e.

Admin. 200, Fall, 1977

Readings.

~~Readings~~

<u>Week #</u>	<u>Topic</u>	<u>Readings</u>
1	Math Rev. Purpose of course Survey Kinds of thinking	B. Ch. 1, 2 M & M Ch. 1, 2 James Adams, <u>Conceptual Blockbusting</u>
2	Ngul. anal. Calc.	B. Ch. 3, 4 (skip #8) M & M Ch. 4, pp. 12-92
3.	Prodn. Ess. Scale ess. (use brainstorming) Substr; factor mix	(B. Ch. 11 - opt.) → M & M Ch. 9
4	Prodn. ess. (II)	M & M Ch. 10, 11
5.	Thy. of Distribn.	B. 24
6	K Thy. I	B. 25 ; M. 14, 15 Gaf. Notes
7	K Thy II	Gaf. notes
8	Demand Analysis Markets structures Practical demand forecasting	B. 9, 10 M # 6, 8, 13

109

General eq. & system analysis

B. 21

9 ~~10~~

Natural monopolies, pricing
policy.

M 13, 16, 17

11

Parasitic effects, inst. failure,
need for regn. & planning

M 20

12

Review, and/or applications

Questions and Problems.

Week 1: Math. tools, role of theory, conceptual thinking

1. Marginal analysis is a way of deconsolidating accounts, or "unscrambling the omelette".
 - a. Why is this useful to increase efficiency?
 - b. List several groups who would resist it, and say why.
2. The purpose of learning analytical tools is not to imprison or overtrain your mind, but to liberate it. Explain.
3. By preparing and thinking ^{creatively}, you may become smarter than your clients and bosses. How will you handle this?
4. What is optimizing? How differ from maximizing? What does an optimizer maximize?
5. Distinguish partial and general "differentiation," (i.e. the calculus technique.) Which one is systems analysis. Explain.
6. What is ~~o.a.~~? ops. analysis? List some rules of thumb it would mathematize.
How does o.a. stretch your mind?

- 1 Why does B's example have opt.l. inventory/sales ratio decline w. sales? $\neq$

What other reasons are there, which the e.g. omits?

- 8 The log. of a no. is its exponent.
~~Common~~ Common logs use the base 10. Another useful base is 2. What is the log (base 2) of 128?

~~Multiply~~

If $\log_2 x = 8$, $x = ?$

If $\log_2 a = 5$, and $\log_2 b = 7$, what is $\log_2(ab)$?
(The Richter scale is ~~based~~ on the log base 2, but it rises by one when the vble. doubles.)

- 9 The derivative of the log of a variable is the derivative of the variable divided by itself. Symbolically,

$$\frac{d \log y}{dx} = \frac{dy/dx}{y} \quad (1)$$

(1) is the % change of y with x .

~~Can you~~ He simply mathematizes. Can you identify and articulate the force or principle at work in the math? If so, you are. This ability ~~shows~~ calls on your ability really to get to the heart of things, to see essences through the incidentals.

$$\frac{d(1+i)^n}{dn} = i(1+i)^n$$

$$\frac{d e^{in}}{dn} = i e^{in}$$

$$\frac{d e^{in}}{di} = n e^{in}$$

$$\frac{d x^2}{dx} = 2x$$

$$\frac{d(1+i)^n}{di} = n(1+i)^{n-1} \frac{d(1+i)}{di} = n(1+i)^{n-1}$$

9. Another ~~common~~ frequent base for logs is $(1+i)$, where i is a small increment such as the rate of interest.
A useful approx. rule is that

$$(1+i)^{\frac{.72}{i}} \approx 2 \quad (1)$$

Knowing (1), we know the doubling time of grow of something, like money in the bank, which grows at a constant annual rate.

E.g., if $i = .072\%$, and doubling time is n ,

$$n = \frac{.72}{.072} = 10 \text{ years} \quad (2)$$

Knowing (2), what ~~is money~~ does your dollar at interest grow to in 60 years? (64)

What is $\log_{(1+.072)} 128$? (70)

What is $\log_2 2$? (1)

10. Mathematicians have developed the ^{"natural"} log base "e", where e is a const. = 2.718. ~

This base has many useful properties, esply that the change in the log is the % change in the fn. We will usually use base e, $\therefore$ written $\ln$.

~~Another useful property:~~ $\ln(1+i) \approx i$

You will find this $\ln$ base e fn. on most modern hand calculators.

The change in any ~~other~~ $\log_a$ ^{to any base (a)} is the change in the natural log times $\log_a e$.

$$\log_2 e = 1.4427 \dots$$

$$\log_{10} e = .4343 \dots$$

~~$$\frac{x}{\ln 2} = 1$$~~

~~$$x \ln 2 = 1$$~~

~~$$x = \frac{1}{\ln 2} = \frac{1}{.69..} = 1.44$$~~

When $\log_2 y$ increases from 10.0 to 10.1, what is the % Δ in y ? (Warning: this rule holds only for small increases, such as from 10.0 to 10.1)

~~11.~~ Another useful prop: $\ln(1+i) \approx i$

In comp int. fn. $F = (1+i)^n$ when $F = \text{Fut.}$ & $P = 1$.

$$\ln F = n \ln(1+i) \approx ni$$

If $F = 2.71828 \dots$ and $n = 20$, what is i ?

~~Wetters~~

12. Log graphs are handy for analyzing growth. You may plot on semi-log; or plot log on common.

See p. 2

tions, complementary readings, and statistics. Bibliography; no index. [J.Y.C.]

74-0833

BREMAN, JAN. *Patronage and exploitation: Changing agrarian relations in South Gujarat, India*. Berkeley and London: University of California Press, 1974. Pp. xvi, 287. \$15.00.

Analyzes the relations between the principal local landowners (Anavil Brahmans) and a tribal class of landless laborers (Dublas). In order to understand the present situation the author employed data from the beginning of the nineteenth century "to record and explain the successive changes in the relationships between landowners and landless laborers." The study begins with a brief history of the development of agrarian labor relationships and introduces a discussion of the *jajmani* system (of caste-based social stratification), the traditional framework. Part II discusses the country and people of Gujarat, and then summarizes the *hali* system (of agricultural labor "bondage") as it previously functioned and the changes that have since taken place. Part III takes this evidence and applies it to an investigation into the existing relationship between the landowners and laborers (1962, 1963). Bibliography; index.

74-0834

CANADIAN AGRICULTURAL ECONOMICS SOCIETY. *The agricultural economists' contribution to policy formulation*. Proceedings of the 1972 Workshop held at Brandon, Manitoba. Ottawa: Author, 1972. Pp. 158. \$3.50, paper.

Papers include: the discipline's contribution to agricultural policy making; four Canadian case studies, dealing with such issues as market sharing in the dairy industry, Canada's Small Farm Development Program, grain production and stabilization policy, and feed grain pricing; an analysis of quantitative aspects of research in this area; reports of four discussion groups at the conference; and a background paper to and summary of the meeting. Participants include: *inter alios* W. Anderson, G. Hiscocks, A. D. MacDonald, D. Plaunt, H. V. Walker, W. J. Craddock, G. R. Winter, and T. K. Warley. No index.

74-0835

FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS. *National grain policies*. 1972. New York: Unipub; Rome: Author, 1973. Pp. v, 206. \$4.00, paper.

Thirteenth annual bulletin on national policies and measures affecting grain; "contain[s] full policy statements covering all aspects of the cur-

rent [1971/1972] national grain policies." Includes the policies for 45 countries and a country index listing replies received from 1959 through 1972; the volume also contains an introductory summary of the policies and "an appendix which summarizes, in tabular form, the principle characteristics of each country's policy." Country index.

74-0836

JOHNSON, D. GALE. *The sugar program: Large costs and small benefits*. AEI Evaluative Studies. Washington, D.C.: American Enterprise Institute for Public Policy Research, 1974. Pp. 90. \$3.00.

A very critical analysis of the present U.S. sugar program, which protects domestic sugar producers and refiners through restrictions on international trade, and is estimated to cost American consumers between \$502 and \$730 million per year. The author examines the supply and trade of sugar, the current U.S. sugar program, the protection of sugar refining, and the costs and benefits of current policies. He believes that current policies toward sugar production and trade should be replaced with one which emphasizes free trade with some temporary compensation to U.S. sugar producers.

74-0837

MITCHEM, NAN P.; WARREN, FOREST G. AND EVANS, CARSON D. *Agricultural finance statistics*. Washington, D.C.: United States Department of Agriculture, 1973. Pp. ii, 94. Free.

Annual statistical supplement to the Agricultural Finance Review, compiled each year by the Agricultural Finance Branch, Farm Production Economics Division, Economic Research Service, to provide reliable data pertaining to, or related to, the financing of agriculture in the United States. Data refer mainly to 1971-72, although there are historical series dating back to 1910. Among other topics, statistics are presented concerning: farm mortgage credit, loans to cooperatives, deposits of country banks, commodity credit corporation loans, farm real estate values and transfers, fire losses and crop insurance, and an income statement of agriculture.

74-0838

OFORI, I. M., ed. *Factors of agricultural growth in West Africa. Proceedings of an international conference held at Legon, April 1971*. Legon, Africa: Institute of Statistical, Social and Economic Research, University of Ghana, 1973. Pp. xii, 291.

Twenty-eight papers delivered at an international symposium which dealt with the funda-

studies—French and foreign. Part III is devoted to empirical studies on research output and diffusion in France and other countries. In the author's opinion, in numerous cases the size of firms cannot be said to be a determining factor in research and development patterns. Bibliography; no index. [J.Y.C.]

See also: Book Number 74-0880.

630 INDUSTRY STUDIES

74-0828

GASOLIBA, CARLES A. *Industria de transformados de materias plásticas: Estudio económico*. Barcelona: Banca Catalana, 1973. Pp. 194. Paper.

A study of Spain's plastics industry, the fastest growing chemical industry in that country. The author reviews the quantity and types of labor and capital used in the industry, the role and growth of technical progress, the size and structure of individual enterprises, the domestic and foreign market for plastics, and the future prospects for that industry within the Spanish economy. Data, in the main, cover the period from 1966 to 1971. Appendices.

74-0829

HARTLEY, KEITH. *A market for aircraft: A critique and a proposal for radical reconstruction of British government procurement policy*. Hobart Paper 57. London: Institute of Economic Affairs, 1974. Pp. 72. 60 New Pence, paper.

In this Hobart Paper, the author analyzes the supply and demand conditions for military and civil aircraft in Britain. After examining the case for state support, he concludes that economic inefficiencies in production could be reduced through a reduction in direct government intervention (which involves errors of omission and commission) and the consequent development of a more competitive market for aircraft. An alternative competitive policy is suggested. Two appendices analyze unit costs and the relation between defense profits and firm behavior. Contains statistical data on the U.K. aircraft industry and some comparison with other U.K. industries. Glossary, discussion questions, reading list. No index.

74-0830

WILLRICH, MASON AND TAYLOR, THEODORE B. *Nuclear theft: Risks and safeguards*. A report to the Energy Policy Project of the Ford Foundation, Cambridge, Mass.: Ballinger, 1974. Pp. xvi, 252.

One of a series of studies commissioned for a

Ford Foundation project intended to explore alternative national energy policies. These specialized reports are being released as they are completed, and the project's final report is "to be published later in 1974." This volume analyzes "the possibility of nuclear violence using fissionable material that might be stolen from the U.S. nuclear power industry" and discusses "what can and should be done to prevent that from happening." Specific topics dealt with in the ten chapters include: a discussion of nuclear weapons; a look at nuclear facilities and operations (1973-80) and at various nuclear power "scenarios" (1980-2000); an examination of U.S. safeguards against and the risks of nuclear theft; and treatments of nuclear safeguards, safeguard measures, and costs of safeguards. Includes a Foreword by McGeorge Bundy, a Preface by S. David Freeman, and five appendices; selected bibliography; index.

See also: Book Numbers 74-0803, 74-0818, 74-0819, 74-0858.

700 Agriculture: Natural Resources

710 AGRICULTURE

74-0831

AMERICAN ENTERPRISE INSTITUTE. *Land use policy and planning bills*. Legislative Analysis No. 11. Washington, D.C.: Author, 1973. Pp. ii, 49. \$2.00.

Study of land use planning and policy oriented to the measures embodied in the proposed legislation before the 93rd U.S. Congress in mid-1973. Analysis includes a brief history of the proposals, which includes an outline of the Senate Bill in question (S. 268), a section-by-section explanation of the analogous House Subcommittee Bill (H.R. 10294), and a comparison of the two. The Senate Committee's summary of its bill is presented as an appendix. No index.

74-0832

BADOUIN, ROBERT. *L'économie rurale*. Collection Universitaire de Paris: Armand Colin, 1971. Pp. 598. FF 67,00.

This textbook for graduate students covers the main topics in agricultural economics. Part I introduces the various agricultural systems from subsistence culture to collective farming. Part II deals with the role of the agricultural sector in general economic development. Part III explores the mechanisms inducing the adaptation of agricultural production to the evolving needs of the economy. Each chapter is followed by ques-

Helping Small Businesses Cope

By PETER F. DRUCKER

Business growth is a reward for achievement and should be a cause of joy. Instead, for far too many small and medium-sized businesses, growth turns into a nightmare. Just as the company seems poised for rapid and profitable growth, it gets out of control and into severe trouble.

Even if the business survives the crisis—and many do not—it often will have lost its earlier growth potential and remain permanently stunted. And in the most favorable case, the business that then recovers and goes on to success, there will be deep and permanent scars.

I have learned to apply five simple rules to enable a small or medium-sized business to grow without getting out of control and without suffering the severe affliction of the growth crisis.

1. Growth requires investment. It always strains the financial resources of a business. And unless the business is managed for cash flow, growth is likely to create liquidity pressures that might even force the growing business into insolvency. Profits in such a business come second. Indeed, in a rapidly growing business profits are an accounting delusion; they should be considered contingency reserves.

2. The growing business, especially the growing small or medium-sized business, needs to anticipate the financial structure and financial resources it will need—at least two, and better still, three years ahead. It needs to go to work now on obtaining the outside money it will need to sustain its growth.

Financial Requirements

Financial requirements of a business do not grow proportionately with sales volume. Some areas may need disproportionately more money, others disproportionately less. Receivables, for instance, may have to grow twice as fast as sales—but they may also grow only half as fast or hardly at all while sales double. And this applies in all areas—manufacturing plant and equipment; distributive facilities, such as warehouses or delivery fleets; investment in technical service or in materials inventories.

As a result, capital structure always needs to be changed during rapid growth. Today's structure always becomes inappropriate and a straitjacket. If tomorrow's financial needs and financial structure are tackled today—that is, a few years ahead of the need—a sound business can almost always obtain what it needs in the right amount and in the right form, whether equity, long-term debt, medium-term notes or short-term commercial credit.

If the business waits until it needs the new money, it will have waited too long. Even if it can get what it needs, it is unlikely to be in the right form and almost certain to be very expensive.

Financial planning for the growing business need not be elaborate; indeed it rarely can be elaborate. But it needs to be timely, and that means way ahead of the actual need. The starting point has to be the realization that growth is qualitative, rather than mere quantitative, change in its impact on financial needs and financial structure.

3. To grow without running into the growth crisis, a business also needs to anticipate future information needs. Growth always requires data beyond those furnished by the accounting system—data on what goes on outside the business and especially data on what goes on in the marketplace.

I remember vividly a small company in the consumer goods business with a very

successful innovative product range and a growth rate in sales of 10%-15% compounded each year. The company announced a fairly sharp price increase, but offered to supply present customers with goods at the old prices for the rest of the year. Sales spurted by 50% that year. But after the first of the next year, sales completely dried up. Six months later, they had only recovered to half the earlier level. The company collapsed and was forced to liquidate.

Actually, nothing had happened except a lack of data. The ultimate consumer con-

Drucker on Management

I have learned to apply five simple rules to enable a small or medium-sized business to grow without getting out of control and without suffering the severe affliction of the growth crisis.

tinued to increase his purchases at a 10%-15% rate. But the distributors had stocked up in anticipation of the announced price increase and were holding back new orders until they had worked off their inventories.

Nobody in the company realized this, however, for everybody (mis)defined "sales" as deliveries to the distributors—the legal and accounting rather than the economic definition (and usually the wrong definition, by the way). The simplest sample of customer purchases—for instance, a sample of the actual sales by 1% of the distributors once a month—would have told the company early what was happening, and would have enabled it to take the appropriate measures.

But lack of such simple data, as anyone familiar with small and growing businesses knows, is all too common. The small and medium-sized business that expects to grow therefore needs to ask: What additional information do we need to have real control and to know what really goes on in our business? What are real results in the business and what are real costs? And it needs to develop this information well before the time at which its absence can cripple it.

4. Small and medium-sized businesses that want to grow need to concentrate on technologies, products and markets. They need to free themselves by sloughing off diversions.

There is, for instance, the manufacturer who sells \$12 million a year in his home market, the U.S.—up from \$3 million five years ago—and who indulges himself in an "international business," consisting of a joint venture in Japan and two small plants in Europe. After five years of hard work, they sell a total of \$1.5 million and lose every year \$600,000. Worse, they absorb up to one-third of the time of all the key people in the company, who forever dash off to Osaka or to Hamburg to "straighten things out"—without, however, ever staying long enough to achieve anything.

Or there is "our prestige line," the "flagship of our fleet"—or conversely, the "popular low-priced line," developed in an abortive attempt to get the company's

goods to the discount stores and "to make us a factor in the mass market."

Growth makes large demands on energy, especially on managerial energy. It demands concentration on areas where the results are. And it demands willingness to give up areas in which there are only efforts but no real results, no matter how "promising" these areas looked when the company first went into them.

5. The small or medium-sized business usually cannot afford much by way of top management. But if it wants to grow, it better make sure that well ahead of time it develops the top management it will need when it has grown. Small growth businesses start out typically as the brain-child of one or two men. These are usually entrepreneurs with vision, drive, ability and courage. But they are still only human beings, and thus endowed with weaknesses as well as strengths.

There is the company, for instance, started by a man with high product imagination, great capacity for product design and development, and ability in promotion. He builds a fast growing, highly successful small company on his ability. But this kind of man is often a "loner," moody, and ill-at-ease with people, and bereft of financial sense.

Kill the Business

If he is conscientious, he will almost certainly kill the business. He will force himself to work on finance and other tasks for which he lacks ability. By spending so much time on what he cannot do well he will neglect what he can do well. A few years later the growth crisis hits and this kind of company usually goes out of existence, having lost the original advantages its founder gave it.

Equally common is the man who brushes aside as unimportant any concern about people, finance or distribution while he concentrates on product design, development and promotion. Three or five years later his business will also be in crisis. Still, it can often be salvaged; at least it has the right products and they are positioned right in the marketplace. However, it is still likely to remain permanently stunted, while the owner-entrepreneur will probably lose control and be jettisoned in the course of the rescue operation.

What the small and medium-sized business needs in order to grow is to ask: What are the key activities in this business (and people and money are always key activities in every business, although never the only ones)? Then its top people must ask: Which key activities fit the people at the top? Then: Which of our employees have the capacity to take on, in addition to their current duties, the key activities for which the present managers are not suited?

These people are then assigned responsibility for specific key activities, preferably without publicity, without change of title and without paying them a penny more. Five years later, when the business has grown, it should then have the top management team it will need. But it takes five years or so to develop such a team, and if the job is not started beforehand it will not be able to become or remain a larger company. It will buckle under the additional load that growth always imposes.

It is difficult if not impossible to cure the growth crisis of the small or medium-sized business. But it is fairly easy to prevent such a crisis, and vital to do so.

Mr. Drucker is Clarke Professor of Social Sciences at the Claremont Graduate School.

Book Store

Leg.

1. Gerald Nierenberg & Henry Calero, How to Read a Person like a Book. (Pocket Bks.)

2. Robert Sommer

a. Personal Space (P-H)

b. Tight Spaces

Env. as people-shaper.

3. Imitation is often the mother of creation

"The more probable the message, the less info. it gives." -
- that is the genl. rule of "info. thgy."

4. De Bono, Edward. Lateral Thinking, Harper Colophon

5. Alex Osborn, Applied Imagination, Scribners.

Klein, Intro to Ectcs.

HB 171

K 53

Put on reserve.

Assign Chap. 3, "Stat. Prodn. & Cost Anal."

(ie Cobb-Douglas etc.)

HB 139

a Textb. of Ectcs.

K 53

1974

What is theory?

Systematic thought.

Isolation of the essential. E.g., large & efficient

Reduction of problems to manipulable concepts

Abstractions — e.g., the \$. Measure, & commensurability

— Manipulation of abstractions.

Explicit statement of means by which we think. Tools for creative thinking.

— Summary: the creation & exploitation of commensurability
(Measure is science)

Scarcity of men who can think, cut thru to essentials

Some e.g.s of measure.

Rules of forest measurement: Scribner; International; (both in bd. ft); volume in cubic ft. Different growth curves. Need for \$ measures.

Ton-miles. Tyranny of an accepted measure. Space-consumption rather than wt. matters. Cu. ft. — adjusted for symmetry. Maneuverability. Irrelevance of the \$ measure ... the wrong concept or abstraction ... in ad val taxes on cars, houses.

Value of wt. in alt. uses. Problems in creating commensurability. Begin w. crop measures, wt. or volume. Adjust for quality. Multi. by price ... & forecast price. Adjust for variability — of wt., of price. Compute discount factor for variability — how aware to it are we? Subtract O&M. Subtract cap. recovery. Discount futurity of deferred yields, e.g. orchards — annualize. Subtract conveyance cost, (O&M; capital). Allocate conveyance cost — s.r. or l.r., ~~adjust~~ MC or AC pricing, etc.; postage stamp or graduated rates.

Some e.g.s of abstraction. Decide from what you want to abstract

C.p. vs. mut. mut.

Concepts of site value: Omnibus par. (rebus sic stantibus)

Usibus par.,

Partibus par. (zoning)

Dominibus par

Terminis par (boundaries)

Vicinis par.

Vii's par

Cet. par.

Mut. mut.

Macro ec.

Wide range of choice. Theory consists in reducing this to order, so you know what you're doing, lay out the ground rules.

Advantages of abstraction

1. Isolate the essential. Avoid distractions.

a. Of incidentals & irrelevancies

b. Of pressure groups. Story of Principal Brown.

E. has been held back precisely bec. people are so interested in it. Too interested to be objective. Too excitable & prejudiced to permit innovation.

Theory limits the dialogue to those who are capable of some intellectual discipline, objectivity

c. Weed out sheer incompetents, fuzzy thinkers.

2. ~~App~~ Carry over discoveries of one field to another. Theory transcends techn. Transcendental quality of movements - romantic, rational, impressionist, ~~etc.~~ Baroque, Renaissance.

E.g. replacement pol. Timber carries over to all biol. & apprais. assets. [And are only 2 kinds]. Amazing how few real theorists there are, who see this.
E.g. gain from Trade; applies to new p.u., new xpt, etc.

3. Economy in commun. A language, full of compressed ideas, in code form.

4. Exploit man's ability to manip. symbols
See logical relations unambiguously.
Use math. & logic.

Deduction reasoning

5. Define norms.

Powerful stuff. Human mind grasps for them, evaluates life accordingly. E.g. studies of prejudice, don't depend on experience but training.

Estr. seek to shape world in image of norms they learned in grad. school. Watch those prototypes.

6. Evaluate quality & precision of another's thinking. Their orals are largely theory. Easy to spot blunders, nonsense.

7. Vehicle for creative thought. Machine - tools of ess. Cow-counters, easy to spot. Weeks on theory.

Abusers of the inductive method.

Δ mental agility, imagination, see new angles - e.g. s.r. & l.v.; envelopes.

8. No obsolescence - if good.

Again, b.s. theory transcends techn. Automation, no difference. Thus Newton is vitally interesting today. His contemporaries who built gadgets are mere historical curiosities.

Weaknesses & dangers of theory. Abuses.

1. Cabalism.

Occult, arcane, esoteric, cliquish, mystical gobbledygook & jargon - Chocław.

Exclusionary fr. used to eliminate not just the quarrelsome & ex parte spokesmen, mercenaries, & special pleaders, but everyone, to aggrandize the class of Mandarins or Levites themselves, a ^{closed} priesthood.

Very common - in every profession. Phrases not to edify but to impress, & mystify.

Mem., 2-3-64

Theory -

Abstraction, advantages. Greater freedom of thought. Releases from curse of econ., which is pressure from vested interests. Econ. held back precisely bcs. people are so interested in it, is so vital, they are not good listeners, get excited: & suppress or pervert innovations.

Theory, exempt.

Is abstraction UnAmerican? The \$ is an abstraction.

But run afoul of another vested: cherished ways of thinking. Harder to change theory than point to facts. - maybe.

Tyranny of Aristotle, & Baconian Reason.

They may be abused. So much empiricism - nail counting. Colleges of Edu. & Ag. Idolatry. They not an end, save to a few who enjoy it as a game. A means - a capital good, abstract

Norms. Easy to spot ex. nonsense. Present generation of scpts. are reformers - trying to make world correspond closer to norms of theory they learned as students. So watch these prototypes - dealing v. powerful stuff.

Inductive & deductive reasoning.

(Analogy of "movements" that transcend techn. Theory transcends technology. No obsolescence. Enduring values.

Advantages - A mental agility, ability to see new angles. E.g. s.r. & l.r. See parallels ... again, s.r. & l.r. N. & S. timber

~~Tools, machine-tools of eng.~~

Has advantages & disadvts. of being furthest removed from applications. Lags, impatience - but deep impact.

Better analogy might be survey & platting - bec. imposes rigid cast on later bldg. Wd. be better if more flexible. Just a gleam in Tj's eye - never saw Mbe. Like U.S. Const., framework of all later work.

Role of Thy. as Sacred Writings, ~~no~~ few understand, but all refer to. Watch that!

~~Maximization & =ingulum. -- show identity.~~

~~Role of c.p.~~

~~Lick is overly modest re value of price theory. It can tell you how to get more from less.~~