

f 4a Disec. of scale
Limits to ac. of scale

ADDRESS OF SENATOR ROB'T S. KERR
BEFORE THE
NEW YORK STATE WATERWAYS ASSOCIATION
NEW YORK CITY, NEW YORK
FRIDAY, FEBRUARY 19, 1960

I was happy when your fine President, Mr. David A. Wright, invited me to address you. I am especially honored to have a part in your program as you observe your 50th anniversary.

New York City and state have always possessed a strange fascination for me. I am thrilled each time I visit this city, the greatest upon the earth.

New York City is not only the largest center of population in the world; it is more than that. It is a symbol of progress, of the most powerful of all nations. The heartbeat and pulse of American industry, trade and commerce, growth and development, are here in this wonderful metropolis. All America shares your pride in this city and all America has a part in your success.

We, out in the middle prairies -- all of the people between the two great mountain ranges, and those beyond the rugged western Rockies -- have an interest in your further progress and development.

We see the mystic beauty of your skyline, unequaled in the realm of architecture; the sweep

of your harbors; fleets of commerce sailing from every corner of the seven seas; the hum of your industries, unparalleled in the annals of time. All of these we have seen and heard. We have felt that this is a picture, not only of your progress but also of the nation's development, of the strength of all the people, North, East, South and West. For truly, New York City is an expression of the production that takes place throughout the nation and around the world.

And your city is but a part of the great "Empire State." One of the countless assets of your state and one of its greatest is a man of rugged character and manner, and of tremendous ability and vision -- Robert Moses.

I wish we had one such human dynamo and leader in each of the fifty states. It has been my privilege to watch and feel his drive, not only in connection with the St. Lawrence power project, but also the Niagara power project as well. I led the fight to give the State of New York the right to build the Niagara hydroelectric power project -- one of the greatest in the world. You are now building it. You are bonding your own assets to finance it.

I led the fight to enable you to consume most of the power to be generated by it for domestic and industrial use within your own state.

That power is a necessity for the continued operation, the growth and expansion of domestic consumption and your thriving industrial economy. That great project and Robert Moses, who did so much to get it underway, are, however, but symbolic of the building of the Empire State.

It was in the early dawn of our nation's history when the pressure for a transportation route to the "West" induced New York to build the Erie Canal. Its promotion and building are now history, but it has long been a monument to the vision, daring and courage of the people of your state.

To me, however, its greatest significance is in what it has meant to the nation and what it symbolizes as we think of the future.

The Federal Government long since took a leaf from your book and launched its own program of improvement of rivers and harbors, building of inland waterways, dams for flood control, hydroelectric power and irrigation.

Attracted by these improvements, people by the uncouthed millions have migrated to the improved areas to play their part in the enjoyment of the benefits and building the economy in the areas where the Federal Government has thus far spent great sums of Federal tax money. Efforts of people everywhere have increased to an intensity never before known to expand the Federal Government's program of development of our natural resources, primarily soil and water.

We, in Oklahoma, are working with the zeal of crusaders for such projects. We know that their development will determine what opportunity we can have in building an industrial economy in which our state and its people can grow, increase and prosper.

Now, the people of New York pay more income taxes to the Federal Government than those of any other state. We know that you are keenly aware of this fact. Yes, even painfully aware of it! I hope that your feeling in this regard is helped to some degree by the knowledge and assurance I now give you that we, in Oklahoma, are really grateful to you for the tremendous sums of Federal taxes you pay! In fact, and I say this in all reverence, we hope and

even pray that you may live long and prosper more and more and accordingly pay more and more Federal taxes in order to make it possible for us to expedite the building of projects in Oklahoma.

We, too, pay vast sums in Federal taxes, and when we have developed our soil and water potentialities, we will pay much more. We know that this will be of benefit to our country, and also to your state which has the largest volume of trade and commerce of any state in the union.

And, then I want to make this clear to you that while we are more interested personally in the development of the soil and water resources of Oklahoma, we will work just as diligently for the development of your soil and water resources as is appropriately possible.

Your navigable waterways have been of inestimable value in the development of your industrial economy. If it conforms with your wishes, their improvement, enlargement, extension and operation should be paid for by the Federal Government as are those throughout the nation.

Yours are a part of the 23,000 miles of improved inland waterways which have been developed since the

building of the Erie Canal. It was the forerunner of barge transportation in America. The mighty St. Lawrence Seaway with its international identity and its enormous potential for growth and progress, not only along its shores, but for the nation, is a product of the same impetus that produced the Erie Canal.

I am not one who regards the expenditure of Federal funds for such projects as "pork barrel." I know of no national and domestic responsibility of government more worthy and more important than that of conservation of the water resources and the development of the waterways in our country. The need for more and wider and deeper harbors and waterways is illustrated by the experience of the first big trans-Atlantic steamer, "The Great Eastern," which came to our shores a century ago. She required a channel thirty feet deep. Thus Portland, Maine, was the only harbor on the Atlantic Sea Coast she could use. New York harbor was then only twenty-three feet deep. The Great Eastern failed commercially because she was too big for her day. She did make history though, and earned undying fame for making possible the laying of the Atlantic cable where smaller craft

had failed. And, also, she pointed the way to the development of harbors and waterways which could handle ships not only of her tonnage and draft, but also those of the super-specifications of today.

Transportation today is one of the largest business operations in America. The public spends about \$65 billion a year for transportation facilities, equipment and service. This is about one-sixth of our national income. Yet the transportation business is one of the fastest growing in our economy. Its traffic grew from 544 billion ton miles in 1939 to one and one-third trillion ton miles in 1957. Only an integrated system of highways, airways, railroads, waterways and pipelines has made possible an increase in industrial production similar to the increase in transportation. It amounts to more than two and one-half times what it was twenty years ago. Each type of transportation has its place in the pattern. Each complements the other and all are necessary. A significant fact about the industrial development in the past ten years has been the growth of new industrial plants, facilities and capacities along our navigable waterways. In ten years we have seen a \$15 billion expansion of industrial plants in the

Ohio Valley. At the same time, we have seen tremendous developments along the Mississippi River and its navigable tributaries, as well as on the Gulf Coast. This expanded industry along our navigable waterways not only enables our country to grow more rapidly than would otherwise be possible, it feeds a constantly increasing volume of business to the entire nation, including all other forms of transportation. It is especially noteworthy that some of our most prosperous railroads today are those which parallel the tremendous industrial developments along our water routes.

When I see New York City and state of today in relation to the nation of today, I wonder what tomorrow will bring. Let's lift the curtain of the Golden Sixties and the fabulous decades beyond and inspect their entrancing possibilities. We are aware that it has taken 352 years to achieve a population of 180 million Americans. Yet Census Bureau experts assure us that the number will double in forty years. Our mighty agricultural and industrial economy is now producing at the rate of \$500 billion gross products per year. Authoritative engineers assure us that this production will double in twenty years. By 1980, they say the value of our gross national production

will be \$1 trillion per year based on the value of the '59 dollar. It seems very probable that in that year our population will exceed 240 million.

Where will the agricultural production occur? Where will the enlarged and new industrial workshops be located? And, now for the \$64 billion question -- Will New York state achieve for herself the same relative position in the America of the Eighties that she now claims as her own? The answer can be found in the quality and quantity of your water resources. Look to your inland waterways; look to your deep channels and enlarged harbors; look to your industrial, agricultural and municipal water supplies.

The nation as a whole will require two and one-half times as much municipal water in 1980 as we used five years ago. The six major water-using industries will use three and one-half times more water in 1980 than they were using in 1954. The electric power generating facilities will require four and one-half times as much water for cooling purposes.

Water is more than a natural resource. It is a necessity of life. It is the priceless ingredient for continuing increase in population and growth in industrial and agricultural production. The necessities

and uses of water in modern society are so tremendous that they stagger the imagination. The Department of Commerce tells us that the cities and towns in America must invest \$80 billion in the next twenty years to keep abreast of the requirements for domestic and industrial water. Four years ago the Army Chief of Engineers reported that many areas even at that time were "constantly going through the ceiling of available average water supply." Even on the basis of our present national population, a U.S. Geological Survey hydrologist finds that most water which is immediately available, and inexpensive at each individual point, is already in use.

Please do not misunderstand me. I do not regard these problems as burdens, but as opportunities. They are burdens for men of little mind and limited vision and inadequate initiative or resourcefulness. They are the source of nearly as much worry to the pessimist as the pessimists are to a growing, thriving, prosperous America.

I am reminded of an incident that took place in Congress soon after the turn of the century. Members then complained of the burden of bureaucracy to the government. People at home were demanding the

year, complaining that it contained provision for some sixty new starts which his Budget Bureau had not approved. He reminded Congress that he had declared a policy of "no new starts." Imagine if you can what America would have been at any point in her glorious history had she been shackled by an effective policy of "no new starts." There would have been no government of the United States of America had King George's policy of "no new starts" prevailed. And then, upon the founding of a government with thirteen states -- that would have been it!

America has reached the greatest heights of wealth, power, industrial production, growth and prosperity of any nation in all history because its people believed in and practiced "new starts." I'm glad my father believed in new starts -- else the log cabin in which I was born would never have been built. And then, tragedy of tragedies, had he practiced no new starts, I would not now be enjoying this blessed privilege of speaking to you here today!

The America of 1980 with its 240 plus million people and its gross annual national production in excess of \$1 trillion will be the product of "new starts" of today and tomorrow.

I told you a moment ago of the estimate that our cities and towns must invest \$80 billion in the next twenty years to keep abreast of requirements for domestic and industrial water. Add the presently projected Federal program to these figures and we learn that the total cost of all water development projects during the next twenty years will require in excess of \$180 billion.

This program is an absolute necessity for the population, economy, and way of life in our country two short decades from now. It is an absolute necessity if we are to maintain and develop the military strength and power required for our survival in this modern world. It is an absolute necessity to meet the challenge of the Soviet rulers whose spokesman, Mr. Khrushchev, now says that he will not need to engage in military conflict to win the cold war or humble and subdue the free world. He has declared that Soviet Russia will achieve its aims of world domination through economic development and power. We stand today appalled at the sight of a godless nation and a pagan philosophy daring the free world to meet it in competition for economic growth and progress.

Undaunted and unafraid, America will answer this challenge. I know that the Empire State of New York and her proud people demand that we accept this challenge. They will cooperate in meeting it. To meet this challenge, we will plan ahead, and then work our plans, to adequately conserve our water resources and develop them as the prime necessity in reaching our goal. This we must do to achieve the agriculture production required. This we must do to build the industrial workshops our people will require. This we will do to improve and provide the recreational facilities for the teeming millions of Americans of today and tomorrow, who in their increasing periods of leisure will need them. Man who is made in the image of God feels an irresistible urge and necessity to spend increasing amounts of time in nature's environment as God made it. He yearns for the murmur of flowing water from pure mountain streams. He yearns to see the glint of the sunshine from the surface of reservoirs, large and small. Man is renewed when he walks within the arches of the cathedrals among the trees of God's forests.

A stronger, nobler America will be built as its people are permitted to enjoy the recreational

facilities of a natural environment as nearly as we can keep it like the Creator fashioned it.

The people of the world respect you of the Empire State. The people of the nation envy you with your natural resources, and unlimited quantities of water. They glory in the opportunity which is yours to play such a great role in the building of the America of tomorrow.

To contemplate the phenomenon which is the Empire State not only strains our powers of perception, it staggers the imagination. Nothing like it has ever existed before. But mark these words: Your fabulous economy has been possible under God, but is man made. And God is no respecter of persons. What man has done here, men are now doing elsewhere. Listen! Are you listening? If you are, you can hear the thunderous roar of the proud and mighty production machines in which the men and women of other states are even now threatening to catch and surpass you.

I know they cannot do so, except by your permission. Does their youth and vigor make you relatively old and feeble? Not at all! Do they possess a boldness and a daring which you once had but now have lost? Never! Yours is the tradition and glory of leadership. It is

written in your factories and mills. It is attested on your farms and meadows. It is certified in your giant financial institutions which have achieved not only nationwide but worldwide leadership.

All of these are fortified by the abundance of your soil and water resources; by your vast forest and mineral wealth; by the wisdom of your leaders; by the daring of your men and women; by the courage and fidelity in the souls of your sons and daughters.

5351

Diseconomies of large scale farming. From Pike, Herbert W. (El Solys? 7/50, dubious)
"What's wrong with Russia's Farms", USN&WR Sept 2 1955 pp. 28-89.

Cornfield shouldn't be longer than half a mile. You start with empty wagon at end, don't want it to be full until you get home.

Large fields, get different soil conditions that call for different handling.

Must keep adapting your plans to weather, change daily.

Very hard to supervise men at distance. Russian farm chairman said his biggest mngmet problem was communicating with his brigades, was going to instal telephone system for it.

✓ Pike sums it up, they need ~~less~~ fewer large self-propelled farm machines and more self-propelled farmers.

They lose something in yields, but still use many men per acre, main loss is in efficient use of manpower. Just can't supervise effectively and, with so many, ~~can~~ and low wages, use them for all kinds of unnecessary things.

Fetish toward large machines. Cumbersome and impractical, inflexible.

✓ "I think, as we have found in America, that as they get rid of horses they will need more small tractors.

During war much trouble with collective peasants grasping more land for individual plots. But then reinventoried, took it back. And now peasants don't give their private plots better care.

No chemical weed killers such as we use, bad weed problems.

Risee. of scale.

Wood loses much weight
in mfg - hence sawmills
shd be in woods, near
source.

Disec of scale:

Army travels no faster than
slowest man.

Group decisions go no faster than
majority.

Chain no stronger than weakest
link.

Bus, frequent stops. Pvt can
goes all way w/o stop.

Disee. of scale.

Auto xptn vs bus.

Bus, obvious ec. of scale.

But dise. too: collection
& distrib, waiting, etc.

Hence autos, small.

"Some organizations use up so much energy and time maintaining a feeling of harmony they have no force left to work for the object for which the organization was created. The only harmonious organization that is worth anything is one in which all members are bent on one purpose -- not to get along with itself but to get along to the objective. I pity the soft and flabby who must have an atmosphere of good feeling before they can do their work." -- Henry Ford

(s478, p. 278)

Disee. of large machine.

In flexible. A major problem in most plants is constant adaptation to changing costs & prices.

Small, flexible, multipurpose machines do this.

Large machine requires fixed complement of other things, no matter what.

(Stigler, ^{Thn of Price} p. 119)

S. F. Needy To Get Free Legal Aid

Needy San Franciscans snarled in knotty legal problems soon will be provided with adequate help—thanks to the city's lawyers.

The 2900 attorneys will back a new Legal Aid Society operating on a \$45,000-a-year budget, the society's president, Herbert W. Clark, told The Chronicle yesterday.

Clark said it is hoped the new society will open offices somewhere in the financial district by October 1.

Clark made the announcement at the opening of the National Aid Association's 30th annual conference at the Sir Francis Drake Hotel yesterday. The three-day gathering is one of the preliminaries to the American Bar Association's meeting here next week.

PART-TIME SOCIETY

A Legal Aid Society has operated here since 1916, but only on a part-time basis.

"They've always been hampered by lack of funds," Clark explained. "They've never had more than \$13,000 a year to spend and all of that has been Community Chest funds."

The Chest has agreed to give the new society \$15,000 annually, Clark said. The other \$30,000 will be contributed by the lawyers.

"We are assessing each law firm partner \$100 and each associate \$50. Individual attorneys with more than five years experience will pay \$10 a year and with less than five years, \$5," Clark said.

The new society now has nearly \$25,000 in its coffers and all that remains to be done before it starts operation is to select a chief counsel and his staff.

6000 CASES A YEAR

"We expect a case load of 6000 a year," Clark said. "We hope to become so well known that every policeman and social worker will automatically refer indigents who need legal aid to us."

"In the past many lawyers have taken these cases out of charity. But the situation requires a professional organization."

"We make much of the phrase 'equality under the law,' but you can't have such equality without proper legal counsel."

The new society will aid only in civil cases. In criminal actions, the public defender's office provides free help to defendants in the state courts.

On small family farm
mgd labor, the most
imptnt kind, is cheap!

And perfectly integrated
w. other labor. & children
available, proper seasonal
pattern, for work. & whole
labor force feels personal
interest in fm.

Too big for
eff.

Ch. 3

p. 59: "The land agent of the N. Pacific willingly granted access to the records showing the location of the company's land and such records as he had regarding the amount of timber. He stated that the company did not have any reliable information regarding the amount of timber on its land, & this statement is believed to have been made in entire good faith. "

549

SP & Weyerhaeuser non-coop.

22

Ec. of scale. Permits employ's mgmt skills (requires it). Div'n of labor, specializ'n w-in firm. (But even large ones may hire specialist only part time, & small ones always can)

Opt. size. Strength of bone & muscle
a cross section, an area. Weight
& volume. So Δ any object to
scale, Δ weight faster than strength.

Paper Cos. - plant
large stands to one
species, attracts only
few birds, so don't
control webworms.

Disec. of scale: mouse
vs. man in sleep's bag, re
raisins & p-nuts.

Army no faster than
slowest man.

Lag in response to stimuli.
e.g. gov't, after change adm.
Harry Bennett at Ford
etc.

Toobig ^{1 p. c/}

130 Owen D. Young, of Insull structure: "But I say it is impossible for any man to grasp the situation of that vast structure."

584

Diseases of Scale.

1. Inflexibility? E.g. H. Ford's commitment to Model T. A vast integrated system was hard to change.
2. Others dislike putting all eggs in one basket, will only do so much of their business w. you.

Mc Elveen, (3376)

Data from samples, '40 & '45 Census.

Relax. He groups fms by value of ^{gross} output. The "larger" ones then have higher output per "acre equivalent". Natch, bes grouped by output. Also, I suspect method of computing "acre-equivalents" was faulty, bes in 1945 there were no data on l.v., & he doesn't mention this.

Table 1, p. 101. Ranks c. 2,000 Ill. fms by acreage. Gets lower gross for larger acreages, tho small diff. Nothing said about land value, so data not worth much.

✓ Small fm, labor flexibility - old, young, ^{& women} pitch in at heavy seasons.

Wartime Δ of output came more from smaller & medium size fms.
- (tho I wonder if his fuzzy stat really prove this). Bes larger fms lost hired labor, & were already mechanized. (p. 100-101)
(I wd. say they had inertia, cdn't adjust to new conditions.)

He freely states his biased opinions w/o any evidence, pro large fms.

Get large holdings where
migratory labor available. So good
transport; good climate; encourage
large holdings. Flat land, warmth,
lack of rain, important.

Discc. of scale: increase
no. of situations where
people must act simul, hence
wait for ea. other.

E.g. at large dept. store,
clerk puts yr payment in
tube, sends to cashier. Must
wait for return. If cashier
over loaded, long wait. If
more cashier personnel, they
spend much time idle.

To warm up stuff for
one person, if is in big
container, much waste.

1955

Rustlers Hit Paso Robles Ranches

Special to The Chronicle

PASO ROBLES, Sept. 30—
Sheriff Paul Merrick disclosed
today he is investigating big-
scale cattle rustling reported
by a number of ranches in
this region.

He said \$30,000 worth of
cattle have been stolen.

Twenty-five steers were miss-
ing from Dorothy Twissel-
man's 18,000-acre ranch; 150
cows from 175 calves from
Ernest Still's 40,000-acre
ranch, and more livestock
from the eight ranches known
as the Houchin holdings, cov-
ering several hundred thou-
sand acres.

A large herd was reported
driven across the Paso Robles
highway by five unidentified
cowboys on the date of the
largest reported theft, August
11, it was disclosed.

*Disec. to
scale*

p. 35 Cites Alfred P. Sloan, sales committee, mtg, 1925.
""There are so many people involved and it requires such a tremendous effort to put something new into effect that a new idea is likely to be considered insignificant in comparison with the effort that it takes to put it accross." 5175
Cited from 1939 FTC rep't on motor vehicle industry.

Toobig

~~11 111~~

55. Those who administer his holdings -- lost in ^{mere} records of them. How actually
administer? Hearest.

570

Keeps pouring in into papers that lose. (Misalloc. resources.)

ch. 3.

Re costs of migratory
labor, cite gundy

McWms, C., "I'll Face the
Land", Boston, Little Brown, 1942.
&

"Factories in the Field"
Boston, Little Brown, 1944.

& refer back to chap 2,
say cd write similarly re hired
labor.

Most discussion of
opt size fails to focus
on vital element of
capital.

Difficulty ~~in~~ to scale is
seeing that cap. is properly
cared for. (& hence collecting cap)

(Hence the less
conserving the operation,
& the less cap. it requires,
the larger it can be)

& impetus to scale
is often diff. m^r, thru effect
on land buying.

(Continuation of Conference Report)

1952, for the coming into force of the revised valuation of property consisting in bare land. It remained to be seen what would result from the publication of those valuations; they awaited the prospect of a Finance Minister seeing the wisdom and justice of replacing some of the most injurious taxes by a tax on the value of land alone. Meanwhile, they carried on, convinced that under the pressure of events in France, as in other countries, the old way of favouring the selfish and the complacent would inevitably be abandoned.

Where Smallholdings Excel

At the evening session following an excursion to the smallholdings colony at Nislev, Mr. Harald Grönborg, principal of the Odense School, spoke to his paper "Smallholdings—Large Farms," in which he contrasted the yields and returns under these types of agriculture. It is a matter on which Mr. Grönborg has made himself an acknowledged authority. The comparison is made between 312 smallholdings of under 10 hectares (24 acres) and 67 large farms of over 100 hectares, based upon the official agricultural survey for the year 1949-50. The economic tests as

to milk yield per cow, corn and other fodder crops per hectare, number of domestic animals per 100 hectares, etc., are all decidedly in favour of the smallholdings. Another table shows that, with the greater number of cows per unit of area and the greater milk yield per cow, if 100 hectares now belonging to large farms were transferred to smallholding cultivation, the actual increase in milk production would be no less than 197,316 kilos. The general results are the more surprising when it is realised how war-time and post-war restrictions work especially against the smallholders. No one should forget, Mr. Grönborg stated, that smallholding cultivation in Denmark is based on open frontiers with free import of corn and feeding stuffs in plenty, at low prices. But for several years they had neither plentiful imports nor low prices for raw materials, so that the smallholders had not been able to produce at full power. On the other hand the large farmers have had a special advantage because they are corn sellers and corn prices have been high. In spite of these advantages, the results of smallholding cultivation are still much superior to those of large farm cultivation. Moreover, and this was the great point in the argument, they could see the immense possibilities through the full application of land value taxation and free trade as demanded in the famous Köge resolution of 1902, so that, as that resolution said, "small farms and independent husbandry have proved the most advantageous form of agriculture in the interests both of the community and the individual and may therefore be expected to become the most general, and in future possibly the only, system of Danish agriculture."

RESOLUTION OF THE CONFERENCE

WE the members of the Eighth International Conference to promote Land Value Taxation and Free Trade, assembled at Odense, Denmark, 28 July to 4 August, 1952, declare:

The fear of war is with us but if we can find and remove the causes there will be no war. If we do not destroy the

(Continuation of Conference Report)

growth of population increased the land value of Adelaide from £3,856 to more than £19,000,000. The paper concludes with a tribute to that enlightened land reformer and greatest of British Colonial administrators, Sir George Grey.

There are not too many People

The cause of *apparent* over-population to be found in some countries and the consequent renaissance of Malthusianism was in every case directly attributable to mis-government. Such was the theme of the paper entitled "The Dispossessed are Over-Populated" presented by W. A. Dowe. Specifically this lay in permitting land monopoly and in fostering protectionism. Governmental direction and control bred scarcity whereas individual freedom and unprivileged private enterprise made for plenty. But when people demanded freedom and equality of opportunity they were given a *plan*, involving large expenditure, the outcome of which was that while temporary relief was given to the sufferers, the rent of land was raised, thus benefiting those who could pocket that. These plans—the Colombo and Marshall Plans and Point Four Programme, for instance—appeared with monotonous regularity. They were but sketchily explained to a credulous world, acclaimed as intelligent statesmanship, and then always revealed by circumstances to be so inadequate that fresh plans had to be devised. The greatest evil of our time was landlordism. It flouted the moral law, standing athwart all economic well-being. Nothing short of its abolition and the restoration to the dispossessed masses of their hereditary rights could establish

lay in their own power. Since the State possessed nothing save that which it had appropriated from its citizens, every welfare scheme necessarily involved confiscatory taxation. Producers were impoverished so that sectional interests might be benefited. The dispensation of public monies endowed government with coercive powers to regulate labour, direct industry, prohibit the building of houses by private enterprise, impose arbitrary penalties, and exercise economic pressure. All these were the political machinery of the Slave-State.

The Welfare State was a complete misnomer. What they must have was the *Just State* and this could be accomplished only by securing the abolition of all taxation on labour and industry, the repeal of legislation which denied the individual the right to dispose freely of his property and which deprived him of responsibility for his own welfare, and the collection of the ever fructifying communal wealth, the rent of land.

Outlook in France

M. Max Toubreau with his son and daughter-in-law (who herself is of Danish parentage) and M. Pavlos Gianellias made up the small but select delegation from the movement in France. The company of two of their eminent colleagues—M. Daudé-Bancel and M. J. A. Simonet—had been expected but circumstances prevented them from travelling and their presence was much missed. In his paper, "France Faced with the Need for radical Fiscal Reform," M. Toubreau outlined the developments in the French tax structure from the days when the Physiocrats led by Quesnay, Turgot, Dupont de Nemours and others had influenced the revolutionary Government.

Ec. A scale is
gn of where shd
unconscious coop'n
replace conscious.

In unconscious,
independent wills are
used.

In smooth sailing,
~~no problems, ec. to~~
scale go far. More
problems, tacking e.g.,
calls for smaller
more maneuverable
ships.

Disec. of scale.

Huge, specialized equipment,
inflexible. So if prices
change, can't shift readily,
easily to other crops.

Disec. of scale:

Collection & distrib.

Delays.

(Large washing vs small)
(Any familiar household
operation, or xptn)

Large items, everything
else must adjust to them,
is costly.

Article on turnover?
ch. 6, esp. conc. of land?

Large ^{drawer} ~~door~~ harder to open
than small

Large tray of ice cubes
harder to handle. If you
just want a few, wasteful
to handle whole big tray

Big garbage can, more
spoilage; harder to handle
longer wait to fill.

Big pitcher of ice water,
more waste left over.

Mass produced things not
personalized.

Disec. of largeness.

Opt. size:

Pregnant woman tries
to get thru narrow door.

Fat major who got
stuck in tunnel.

Millions of autos, eu.
under separate control, go
own way. Imagine central
control of that.

71

Cite 'Hearings on Study of Moppy Power before Subcomm. of Comm. on the Judiciary
HR, 81st Cong, Apr. 26-8 1950 (Celler Comm)

&
M. Watkins, 'Industrial Combs & Public Policy'; H. Miffelin p. 139

Too big.

That giant firms ~~are~~ are big despite ineff.

575

367-9 Many citations that increased size does not bring
more efficiency. The best: 586

Financial
Too big

"Knowledge & technical ability have given place to financial
influence We have learned that the limit of growth is soon
reached at which a central control is effective The idea that
centralization and combination always produce increased efficiency
and profit is a bubble that has been pricked." -- E. S. Sufferin, in
NY Times Annalist, Nov 3 1913, article on "The Apparent Failure of
Industrial Eugenics". p. 367 586

Egypt

"The majority of the labourers are paid by large estate owners in money. In the large estates in the Delta labour is organized in gangs under an overseer. The gang system is open to obvious abuses, employment of children and exploitation by the gang leader being the worst. It is not uncommon to see gangs of small girls, from five years upwards, picking cotton, followed by the gang leader with a whip. pp.36-38. 517d

USS, long M - w 3 states! 2 things come out in depn: basic ineff; ability to weather lean yrs.

(a) As I write, I spend hours & days planning, sorting, revising — others ask's of progress, ask 'How many pages'. & I ask some of them. Concrete, external evidence. — supervisor requires. Cannot trust one w/o ownership int. to sit & think — require concrete evidence of productivity. But the other maybe most important. For a time, new ^{idea} product exists only in mind of originator — & takes labor to put it there. He should be prop.

(b) Divided authority — mgt. on spot lacks authority to experiment, way down chain of command. When too small, have custom work, which has diseconomies. But large has very same diseconomies with subordinates. So where is advantage of scale?

(c) Need nuclei of control near operation. If hold big area, must scatter ops. & nuclei — & then, how does center control nuclei, that mkt. can't do as well if were separate? What advantages from unified ownership? None — but great losses.

Must have one with ownership interest & responsibility in charge of small details — they add up. Advantage of smallness. Contrast bigness: central rep. of ownership int. — & pretty many owners — & if just one, cares nothing for details — all ownership decisions funnel thru center. Inevitable, detail neglected, room for speculation, incompetence, stuffed shirts. Grafts reputation

Area problem — must split up units, to cover area. Hvg. done so, might as well be independent.

Must split among subordinates, giving a sphere of control to each. Only advantage of central control, to coordinate. After a pt., is cheaper to let mkt. coordinate, leave each ~~the~~ indep. of top.

after this, Lange, scheme on paper for coord. a whole ec. by simulating mkt. relations, acct's prices. Big plans doubtless practise something similar. But if must do it, what advantage to scale? & ~~exhaust~~ some disecs remain.

(If your product heavy, mkt. limits its size — play down)

(d) Size, in general, antithesis of specialization, exchange. You do everything. Ec. to scale come from all stages components of final product, or just mass-producing one thing. Very big, turn out many things — Koppers co. classic. Clearer with big corp. ~~also~~ Also misc. ~~apparent~~ products, no semblance of connection. ~~Also~~ Also with big farmer who produces several crops, processes, transports, warehouses them, & dabbles in oil besides.

Argument is, one must be big to get ec.s of scale. Up to some pt., indisputable. But beyond it, ~~it's~~ clearly contrary to fact. Wd. be more convincing if, as giant ~~company~~ hold's units grew, they ~~specialized~~ produced same specialty on larger scale. But in fact, branch out into contributory products, unrelated products, unintegrated plants, etc. Instead of specializing more, spec. less.

Loss flexibility — indep. units can be continually recombining in best ways of moment. But if you make own raw materials, are own customer, are not going to abandon old ways immed. Loss spur of comp. at each stage, must buy & sell w/in own org.

p. C
Then,
p. 71
analyse disecon.
of scale.

(Here, could discuss all diseconomies to scale, dig deep into file. But omit stuff on corps - reader not yet ready for their hold'gs being much land. Just farm stuff. ?)

Consider, now, in general way, what diseconomies-to-scale are encountered. Ingenious plans proposed to make largescale organization economical. Lange even proposed system for unifying whole economy under socialist control, ~~Basic~~ still leaving some scope for individuals. Basic problem: operators deal with capital, must make many little decisions daily about maintenance, rate of depreciation, etc -- basically, same problem as with tenant, don't repeat much. ~~Taxs&xxx~~ Central administrators always wrestling between allowing scope -- & thus giving room to abuse; or ~~xxxxx~~ confining with red tape, preventing abuse -- thus taking scope & incentive. The bigger you get, the harder to effectively supervise men & machines; & the more the men's own interests would differ from company's interests -- they would take liesure, & abuse equipment. So the more you resort to

~~(Select people of fanatic loyalty to yourself - & drill loyalty into them. Which limits their thinking. red tape. Which costs, & enervates. Well known proclivity of big, institutionalized, conservative investors for doing things old style.~~

~~Transportation problem - units, very big, size limited by cost of bringing things to them, or them to things.~~

With tncy, take on these costs, achieve no returns to scale.

When a holding gets so big, are also taking on more & more of these costs, with no advantages from increasing scale. When you just split up into several unintegrated operating units, have all disadvantages, none of advantages of scale. Thus can consider those who man outlying bastions of far-flung corp empires as being much like tenants. (Attach sheet. Maybe leave this deeper thinking until after hypothesis)

We know large ownership units flung together often w/o op. econ.s - e.g. banks - Place, & (d) quote; & tncy in general. So follows is some of size other than op. ec. - to ~~op~~ wd. often draw off. opt.

~~Swindlers, insiders help's selves, etc etc --- much publicized abuses of corps, are diseconomies. 576, eg, describes at length. (B&M) 2575 pp 78-81~~

Show big split up into int-like units.

Quote someone on this

p. 7-8: "Concentration of the ownership of farm lands into the hands
of a few implies uneconomic management: firstly because life of relative ease and comfort deadens the incentive of owners to introduce and enforce practices conducive to maximizing production; 2dly, because the ability of management to render effective surveillance decreases as the number of units under supervision increases." 5166

p. 148, Cites Ulrich Phillips, good re diseases of large scale.

Get on typem.

"The five great southern staples became plantation staples because each of them permitted long-continued routine work in their production." "In truck-farming, dairying, cereal production, when there are long lay-by intervals to be filled economically with odd jobs, and in most sorts of frontier industry, there are positive requirements of versatility and reliability on the part of the laborers; and in these cases no amount of knowledge and will-power on the part of a large-scale employer can make up for a deficiency in the necessary qualities on the part of his employees. Therefore the plantation system, with its crude type of labor, was clearly debarred from these enterprises." Ulrich Phillips, "The Decadence of the Plantation System", Annals of Am Ac of Pol & Soc Sci, Jan 1910, pp. 38-39

Ch. 8

Levy, 5 5164

Sir Francis Channing: "It is an age of extreme luxury, when estates are bought by the enormously rich for social prestige, and without thought of the duty that attaches to the owner of land as the nation's trustee. "With many, the passion for sport overrides everything, and will throw every obstacle in the way of sub-division, which endangers the interests of shooting or of hunting." in Small Holdings Report, 1906, p. 52

disec.
to
scale
Generally cusses out backwardness of present English agric. in these pages. Seems to think it was ok in past, but now he thinks is too much in corn, should be shifted to smaller holdings, should rent to "tenants who are prepared to wring greater results from the soil by the sweat of their brows", but don't, thus produce wrong things.

Stresses political & social motives.

Game
preserve
motive
pp. 118-24, Excellent. Of large landholders, interested in sport etc. "The rents may be small, but he has the satisfaction of being a landlord; and so long as this is his object, he is ready to pay more for the land than its strictly economic value would warrant. 'There are landlords holding even large estates to whom it is not a matter of serious issue whether they get any profit from their estates.': (source of quote: W. J. Malden, "The conversion of Arable land into pasture", 1898, p. 25) and there are others who find farming 'the pleasantest of recreations, giving health and pleasure far beyond yachting and horses', even if the 'farm accounts year by year show a substantial balance on the wrong side' (source: Haggard, H. Rider,) Rural England, Vol. I p 160

Diser. of scale?— you've a large
org. to keep busy, must have
them doing something. Limits
timing flexibility

Disec. of large ~~mach~~ frng.

Hvstg & other op-ns are seasonal, critical, must have men & equipments around to cover whole acreage quickly. So this business of running machines day & nite can be overdone.

In seasonal op-n, must have idle men & equipments in slack seasons. Strike some balance.

5169 p. 33. Cite Scoville, O.J. 'Size of Farm & Utilization of Machinery,
Equipment & Labor, BAE, p. 136 (unpub.) Studied corn-livestock
fms of e-n Nebr. Finds less machines per acre as fms get larger.
" altho the rate of decline of costs is h'w small acreages, a
full-sized family-op fm is large enough to permit reasonably
efficient utilization of equipment. Decreases in machinery costs
per acre become relatively insignificant for farms that are
larger than a 2-man unit." (B & J sp'g)

5169 p. 33. Takes 200 acres to use a cotton picker, Miss delta
On this cites House Comm. on Ag., '47, "Proj. 1. Ag. adj's toward an
effic. ag. in the So." p. 37
& that is biggest. "In other situations the units of machinery are small
relative to common sizes of farms." p. 33

Use in ch. 3; & ch. 1

de Souza, 2

Of Latin America in general:

"A large proportion of the Indian population lives on huge estates managed by a few wealthy landlords who very seldom see their plantations and know little about the welfare of the people living on them." (so how can they be good managers?)

Too big

5152-6



"This should take care of the cat for a week"



Absentee ownership is bad for same reason s cialism bad,
& v.v.: owner careless about tending to his assets. Users
of assets owned by others not careful about their future.
Thus both soci lism & absenteeism are anti-conservationist,
anti-capital formation. Both absentees & socialists
confiscate capital, discourage cap. creation.

So why do tenants waste land? Because absentee owners
are careless. Their carelessness takes this form, of letting
tenants do what they please to land,.

ch. 5

"The Sheikh as Landowner. This wholesale alienation of the land in large blocks to the sheikhs causes injustice to the cultivators and also creates great obstacles to future development. The sheikhs as a class are wealthy and important, since they control stocks of grain, and hoard the output of their estates: but they have no value in relation to the management of production. 'He is in fact too big a man to ~~a~~ be a farmer and too indolent, corrupt and uneducated to make of himself anything else. As regards agricultural activity, the sheikh is completely unimportant; he takes little interest in seed or ground preparation, is more ignorant than his farmers about such matters and performs his large-scale water-sharing functions at the request and on the representations of his farmers and through his agents.'* Thus the bulk of the land has come into the hands of a class from whom no leadership in agricultural methods can be expected and which^{is} tyrannous, callous, and oppressive." p.113 *From an unpublished report prepared for M.E.S.C. on 'Land tenure in Amara Liwa', 1944. 5176 Iraq

One man cannot supervise more than a few other men without
reducing his instructions to cover^{only}/the barest outline of their
total behavior, or simplifying their work so they are little better
than machines. He ~~xxxxxxxx~~ compromises somehow between routinizing
them on the one hand, and losing control of them on the other, in
the one case failing to exploit their full abilities, in the other
case failing to turn those abilities to his advantage.

Not worth much!

Suggests
most op-ns
too big. -
i.e. That part
of problem is
worst.

p. 358 "The only empirical studies which have been made to test returns to scale in agric. suggest either decreasing or constant returns." But not conclusive. Cites self, 359, "Production Functions from a Random Sample", JFE, v. 28, a table showing elasticities of returns to scale for various kinds of farms in Ia. All are less than 1: i.e., the proportional increase of output is less than proportional increase of inputs, including land. Indicating they were all already large enough or too large. -- whatever their present size. Not clear how he did it.

p. 350, says that farm ~~mgmt~~ mgmt studies "over past several decades" have "provided inferences" of returns to scale -- I think he means they took it for granted, w/o proving, & he is mildly criticizing.

p. 360 "Much work is yet to be done before any refined knowledge will be had about scale relationships in farming." i.e., subject is up in the air.

No ex. to
scale.

p. 370 Few economies to scale with ~~xxxxxx~~ ^{producing} animal production. Opt. number that 1 man can handle soon reached, & 2 do little better. 5124

Takes output per acre for granted. Wd. just minimize costs. Opposite extreme error from gross output approach.

w. machines.
Or very little

Ia. AES project 1135. With various kinds of "costs per acre" reach a minimum at different spots. They are now making more machines of small sizes, bringing its costs down. Is still somewhat below some of bigger ones, but very little. The 1-plow machine combination (whatever that is) yields no more reduction in costs per acre after 80 acres, where its cost per acre is \$29.47. The 2-plow combo 120 acres, \$27.12/acre; 1-plow & 2-plow arrangements combined, 240 acres, \$26.82 5124
3-plow unit, 280 acres, \$26.19

His point is that these differences are quite small, ~~at~~ their effects apt to be swamped by other factors.
Check source.

Comm. & p. 4.
tentry

"Large-scale ownership means, of crs, tnntry or wg lbr. It is tnntry here & wg lbr there, accrdg to prtclr cirmsncs nt always easy to det; & tho the lbr may bcm a tnnnt & th tnnnt an owner, such xfrmtns are too few & scettrd to affct th gnrl cndtns. Th grt mss of th lnd is held by an insignfcnt few, who do w it as they will, & the ideal of a rural society composed of many small-unit owners, each a tiller of the soil -- the ideal of socially minded men in all times --- is one, so far as so. Cal is concerned, for which thr is not the slightest present basis of hope."

5104

Lee, 4

589

40 Machines on very large farms used more intensively -- run day & nite.

(But as land costs more, is more important to use it intensively.) (& because use depreciates machines, but not land)

I suppose these are operating, not ownership units?

117 Large farms are most efficient in terms of 'output of money per unit of input'. (I say this is why they are less efficient. -- less intensively used)

This summarizes conclusions for all kinds of inputs. (except the land)

Ch. 8 Berle & Means, 2

Disec. of scale swindles, mgs trading on inside info, etc ad inf, ~~not~~ diseconomies to scale,
abundantly described. 576

Diseconomies of size -- colossal peculations by directors, confusion of
overlapping holding co.s, etc -- p 78-81 575

Too big [71]

97 "large business frequently necessitates absentee management."
Directors "almost exclusively confine their attention to the financing
of their companies ...(they) ~~totally~~ often totally neglect the most
fundamental basis of real efficiency in business - the effective
supervision of men, machines, & material so as to eliminate waste &
achieve lower operating costs." 584

Opt size

They think 52, 160 a. ^{is} enough to 'obtain all major economies ass.
with size of farm.' (used) 5115

See

'Do lo i.r. promote
cons.' file.

Coop'n by union of
labor e.g. log rolling;
& ^{separation of effort} div'n of labor,
like splitting man
into parts to be
everywhere at once.
Latter more for small.

Too, ships must go
diff places, Times.

Disec. of scale - fm machine gets so large, packs down earth. Big wheels require much room. Turning chews up crop.

$$\begin{array}{r} 68 \overline{) 58.0} \\ \underline{54} \\ 40 \\ \underline{36} \\ 40 \\ \underline{40} \\ 0 \end{array}$$

~~Order~~ Hamman, C.H., ~~'Intensity & Land Rent'~~ JFE, Nov. '38.

Starch, E.A., "Experiments in the Use of Large Scale Mach." - on opt size - ~~of~~ medium.

Smith, A.G., "A Fm Mgmt Study in Anderson Co, SC", USDA Bul 651, 1918. " "

Too big

p. 256 Chile.

"As in Bolivia, so in Chile, the enormous size and low efficiency of the hacienda or fundo is the most striking characteristic of Chilean agriculture."

5152-6

p. 80 Two man farm, they think "Without question" is most profitable.

But credit rationing prevents growth

5168

p. 56: Operating costs in caring for livestock rise after herd reaches certain number. Cites Wilson & Rauchenstein, JFE, v. 30, pp. 721-22 : "...several herds of 100 cows or more were studied. 5168

p. 56, opine that "In most lines of farming, especially those involving livestock production, economies arising from the scale of operation are rather fully realized on the medium to large commercial family farms."

Too big p. 252 "The actual work on the hacienda was done by the oppressed serfs and slaves, who were in no position to change traditional agricultural techniques." (Venezuela, c. 1908) S/52-6

Coord:

Right place at right time
Specs, stovers make it possible.

Need for self-interest: (make small
enterprise better than large)

Wife at home w baby

Fortunately she has self int.

needn't watch her

Ch. 3.

Absentee ^{divided among} ownership, may be
bad, but abs. op'n can be as
bad or worse.

TODAY, some children may still sing about Davy, but chances are you'll have to coax them first. A widely circulated mail order catalogue still carries about fifty Davy Crockett items but it was made up months ago. And since Davy was back on television

Ec. of scale.

Leon, Wm G., "The Am. Woolen Co.", Freeman,
11-41, pp 10-11.

A colossus, 25 mills, 1,000 looms, dwarfs
nearest competitor, Arlington Mills.

Org. 1899 from indep. mills, quickly lost money.

War saved them - (esp. after 1913 loss of much
tariff hurt them). Uniform goods, they did better.

Postwar. "Now w. the rapid change in demand for
styles the colossus became punch-drunk. A small
mill w. from 20 to 200 looms may hit upon a
good style & keep busy all season..... Huge Am.
Woolen w. a capacity of millions of yards cannot
manoeuvr in a fickle market." (p. 11)

'20s, broke up, liquidated. Founders, (Flint, Ayer,
& Wood) obsessed w idea huge conc. of cap. gives
advantage. But lacked mpy base. (also lost tariff.)

Dinosaur, Brontosaurus, appropriate
symbol.

NEW TRIER TOWNSHIP HIGH SCHOOL
WINNETKA, ILLINOIS
MATTHEW P. GAFFNEY, SUPERINTENDENT

Turner, '26

5184 p. 38.

The larger
the landholding,
the worse the
tents.

% of rented farms decreasing in fertility, by no. of
rented farms owned, No. Central States, 1920

1	2-4	5 & up
15%	20%	37%

Disec. of scale.

Can run 100 yds faster per yd.
than a mile

Studies of ees to scale.

1. Limits to ees of scale. Pro 2-man farm.

Bachm & J., citing Scoville; & cotton picker
W & Rauch,

Heady, p. 370, 376

589 - Lee (more in op units tend to med. file?)

~~old ch. 3~~

1-a. Small value of machines of land.

5168

150 census

Schultz

2. Disecs of scale

Pretty general - sum it up w/o quot'g, be brief.

3. Higher output per acre on smaller (obscured by larger having better land, often)

Laird, J.S. Mill cites.

Lee, ~~obiter dictum~~ (at least in my notes. Get Lee, interlit.)

USDA circ 15, Oct. '27. Farm r.e. situation

B2 *

p. 33 farm mortgage rates continued favorable. 5% in best sections. Much higher in S. Fed land bank loans at 5% +.

B1, A *

1928, circ. 60, p. 30-1. Foreclosers like to dispose fast. Letting to tenants, not good for income rate consumption. Hard for them to manage by selves, if prop. scattered esp., tho some tendency toward this, management service development.

V, B1 *

Requirements of law & banking practice urge early liquidation. State loans on ins. co.s place max. time limit on holding. - 2-5 yrs., with extensions granted. (Probably granted freely in depts)

B2 *

Former owners & private lenders hold about 40-60% of mortgages, institutions rest.

*

Circ. 209, 1931.

Thus greatly Δ -ing the cost of cap. movement, Δ ing differences of internal mrs, Δ ing spec.

B1, B2, B3

Breakdown of rural credit facilities. (so no one could buy. Institutions would own, & then what?) Short term rural credit breakdown. So govt. expanded rural credit aid (consistent with crop restrictions) (consistent only in raising land values)

Fed. land banks ave. 5.58%

ED
ON

12 Biggest Pumps to Irrigate Million Acres Of Parched Land in Grand Coulee Dam Area

*principle that general development
means gen. compl. illustrated*

Special to THE NEW YORK TIMES.

dent,
hin'
On

SAN FRANCISCO, June 27—Water-pumps so big that one dozen will provide irrigation for more than 1,000,000 acres are now under construction for the Grand Coulee project in eastern Washington, the semi-annual convention of the American Society of Mechanical Engineers was told here today.

27 —
solve
a na-
rough
very
es S.
river-

They are by far the largest pumps ever designed. In operation, each will have a capacity of 1,445 cubic feet per second and each will be called upon to hoist its water some 350 feet. Each will move about ten times the amount of water used by the entire city of San Francisco, and lift it twice the height of Niagara Falls.

turn
rucial
npro-
"We
right-
es, or
of life

The pumps were designed after two and a half years of research at the California Institute of Technology in Pasadena. Research engineers say that even larger pumps could have been used and are feasible from an engineering standpoint. However, no existing foundries are capable of building bigger pumps, and existing rail-

ening
Insti-
r the
ession-
gious
dents
es of
ment
which

road tunnels and bridges are not big enough for them to be moved.

Six of the pumps are already under construction and six more will soon be built. They are centrifugal-type pumps, each driven by a 65,000-horsepower motor at 200 revolutions per minute. When installed, they will have a capacity far exceeding that of any pumping plant now in operation.

They will be used to draw water from Lake Roosevelt, which stretches 152 miles behind Grand Coulee Dam on the Columbia River. They will lift the water to a reservoir, whence it will flow through an intricate system of canals and ditches to irrigate land now parched and useless.

The contract for manufacturing the first six units has been awarded to the Byron Jackson Company, pump builders, and the Pelton Water Wheel Company, turbine builders.

Details of the pumps were described by E. B. Moses, hydraulic engineer with the Bureau of Reclamation, and by Carl Blom and Ira Morgan White, engineers for the manufacturers.

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the bigger
the owner,
the more
erosion.

5107

p. 41

The more tenants the owner had, the more destructive their
farm practices -- landlords said. So more than no

(showing mgmt problem
As with size, the no
ec.s realized)

Mighell, Ronald L. Am. Ag. NY. John Wiley & Sons Inc. 1955
(for SSRC, in coop w. ARS & Bur. Census)

p. 71 Cites:

Scoville & ~~Fellows~~, Orling, "Relationships between size of
fm & utiliz-n of machinery, equipment & labor on Nebr. corn-livestock fms."
USDA Tech bul 1037, (1951)

and

Fellows, I. F. et al, "Production Efficiency on New Eng.
Dairy Fms," 2. "Economics of Scale in Dairying - ..."
Stons uses bul 285, (1952).

Both found "little additional economy from scale, once
a well-org., fully employed one-man unit had been achieved."

Scoville analyzed 45 tasks on fm, found 2 men handle ok.

✓ Heady, '53 (AER?), found decreasing returns to scale.

Ecs. & direc. of scale, Sources to consult

1. P. Roberts on risk
2. Syn. City
3. Water instn, a f E S, Ec, Aspect of water res. policy.
4. Prior & draft for Lindholm, I.D. & Ec. Dev.
5. Foreign Inv.
6. BMS
7. Atk. report
8. Chap. for Commission & Th.
9. E R T
10. RIMS
11. Chap. 3, my dissm.
12. Phil LeVein
13. Amory Lovins
14. Stigler's feeble effort

Contrasts between large and medium-sized firms, 1979

Notes by M. Gaffney for use in Econ. 160, S86

Fortune Magazine publishes annually a summary of data from the largest 500 industrial firms in the United States, with size defined by sales. Utilities and financial companies are excluded. This group is known colloquially as the "Fortune 500". The following data are for 1979.

Table 1: Employees per \$m of Net Worth and Total Assets

Size Group	Employees/Net Worth		Employees/Total Assets
	How ranked:		How ranked:
	by NW	by NI	by TA
Top 10	22.0	19.3	10.8
Next 490	37.2	37.7	17.2
Middle 10	57.8	40.5	17.9
Bottom 10	93.5	58.1	40.3

The data show that the larger firms, and especially the top 10, are much less labor-intensive than smaller firms. (The top 10 are so much larger than the average Fortune 500 firm that they possess 25.2% of all the Net Worth of the 500.)

Note that the method of ranking affects the outcome, a principle known as "regression fallacy". If we had ranked by Employees rather than Net Worth the principle would have acted to weaken the findings. Ranking by NI (Net Income) is more neutral in this regard (but not completely so, because NI is related to NW). Statisticians you must watch like a hawk.

But why is the first column more extreme than the last one? That is because smaller firms use their credit more heavily than larger ones, as shown in Table 2.

Table 2: Net Worth as share of Total Assets

Size Group	Ranked by NW	Ranked by TA
Top 10	.49	.49
Next 490	.46	.47
Middle 10	.47	.46
Bottom 10	.33	.46

Table 2 illustrates the tendency of smaller firms to use their credit harder. The first column is biased to exaggerate the finding; the second column to offset it. Comparing the two, you see there really is a finding.

Scale

A. Advantages

1. Geometry. $A = \pi r^2$
2. Reduce extra costs.
Subst. bureaucracy for mkt.
3. Objective personnel evaluation -- non-family.
4. "Massed reserves"
5. Bulk deliveries of fuel & materials.
6. " transactions
7. Advertising: brand recognition.
8. Bulk sales -- by-pass middleman.
9. Diversify to reduce risk, stabilize profits.
" to assume greater risks e.g. oil exploration, avoid gambler's ruin.
Diversify products, supply-sources, plants, regions
10. Vert. int., protect sources & outlets
11. Internalize ext.
12. Credit; cap. rate
13. Reserves for price wars (e.g. Saudis today)
" promotional pricing.
14. Tax benefits -- use shelters.
15. Political influence, Chosen instruments -
Deal w. govts.
16. Avoid reg. thru subsidies.

Disadv. of scale.

1. Space

Farm layout. Long hauls. After some size, utilities -- then where are the cars?

2. Gravity

Russian farm machinery.

Big bldgs, longer spans, heavier floors.

3. Loss of edge effect

Productivity of interfaces.

- Ecology

- Parks

- Retail land

4. Time. Slow starting & stopping -- inertia.

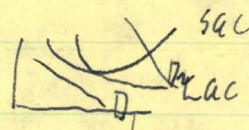
Big things don't get used all the time.

to

a. Build ahead of demand

b. Low load factors (capacity factors)

c. Keep around after demand has changed.



5. Land requirements.

Trucks, turning area.

Boats - Harbors

Dumbo airplanes, bigger airports needed; fewer flights

Land assembly time for large bldg.

Or else use ungen. location

Or else buy 30 yrs. ahead

4

Rising cost of land as you buy more.

6. Separate ownership from mgmt.

Absentee ~~owners~~ owners

Conflict of goals

Tnts vs. landlords. Croppers.

Workers under mgmt.

Pilferage. Loss of surveillance. Cattle rustling, etc.

Bilking owners.

"Internalizing profit". Captive Capl. is invested at low returns.

7. Cross-subsidy.

Winners carry losers

Part carriers present

~~Low~~ Good risks carry bad risks.

Prof. concealed by acc'n. wealth.

Careerists get res. that do not appear in budget

8. Excessive K-intensity, to min. mgmt. problems.

This is why no new jobs come from large firms.

"The sections are buying the $\frac{1}{4}$ -sections". Surplus funds go questing.

9. Long lives of comm. lose contact

a. Ownership w. mgmt.

b. Mgmt w. workers

c. Salesmen w. customers.

d. Engineers w. everybody. They want free K + land.

E.g. of B.C. foresters of Mac + B.C.

E.g. of B.C. hydro

This goes w. (4) - slow replacement.

"Profit, fundamentalism" - medicine, education,
ag. research, nuclear power

10. Good displacement
Concursion in the org. > advancing the org.
Smartest don't rise to top, but best in fighters.
So creative people leave, start new firms.
11. Alienation. Loss of sense of justice, as functional effort goes
unrewarded.
12. Small, ~~new~~ things get overlooked. (small things may have
high % returns)
U.S. govt. as e.g.
P.W. -- trucks ahead of branches.
Green - acquiring firm after studying balance
sheet for $\frac{1}{2}$ hour.
Hardware bias; neglect spare parts, maintenance. K.C. airport.
13. Innovation gets choked.
Calero & the Green Avocado ... fails to turn
black, so they won't touch it
14. Excessive diversification --- to avoid competing w. selves,
they use ~~any~~ retained earnings to compete w.
others.
In contexts, largest become balance-wheels.

15. ~~Punish~~ Penalties for error outweigh rewards for success
— bureaucratic cultures go that way.
16. Empire bldg. Henry VI effect -- Slory is like a rick in the water.
17. Avoid risk + innovation
Underuse credit (except in period of merger).
18. Produce fewer innovations / assets.
19. Best fighters rise to top
- 20.

Baumol on distr. Only # 9 is good, pp. 591-end.

1. Justice & fairness are something else. J.B. Clark was a freak.
(no. Baumol is)
2. Defenses & apologetic re m.p. thy - ignore.
- 3 Euler
- 4 ~~the~~ Wage share is constant. But no good expln. (& it is false.)
5. Ricardo's distr. thy is the only clear one.
He shows it.

5

land. bias

Tendency to suppress intensive margin.

- H₊ limit in cities
- Bias vs. infillings
- Cartel price umbrella
- Coastal zoning

6

Def. of effie.

P/I max

Max. resid. rent is value of I

Argument is claiming this for negent. as
max of effie. Potlatch ad.

4.3.67

✓ Ecs. of scale.

1. Usual arguments are n.g., prove revenue -- too much land
2. Tax gimmicks are bigger factor; largest farms, $\frac{2}{3}$ lose money.

O. Freeman quote

Relate to NFO agitation

3. Multiple plants, multiple lines, & other units.

4. Spend on research, but poor record.

File patents, but discover few.

So seek reasons elsewhere. Find most are anti-social.

- ## ✓
1. Credit

2. Diversify for strength in extinction pricing.

E.g. recent merger of Union Oil & Pure

3. Vertical integration to protect reserves, firms, in imperfect mkt.

4. Advertising, p.r.

5. Internalize externalities

6. This often amounts to assuming role of govt. -

Land planning; streets; u.f. Depends on what govt. does.

6. Strengthen bargaining power; large sales & purchases.

Euphemism for monopoly.

7. Political influence.

Govt. contracts

Pub. works

8. Tax advantages

Can always write off losses. Wait longer

1. Owners lose control, get bilked by mgs. Internalize profit
2. mgs. lose control - problems of bureaucracy.

Long lines of control.

Small opps. get overlooked. Adm. can only afford to look at big ones.

They have to slow turnover to avoid requests, bottlenecks.

Long & Overlapping

Low flexibility, for above reasons.

3. Strong parts of enterprise carry weak. Henry VI effect - glory like air in water
4. Internal xptn. costs rise
5. Ineffic. hidden by accum. wealth

2-21-66

ScaleDist. & Correct OutlinesDiscuss Tiebout on output.

I. Loose ends of prodn. ecs.

A. Ecs. of scale & of propn. are related.

One is too small when lacks enough to complement the indivisible items, so then propn. is too ~~small~~ large.

Usually, land is most divisible. Not always - e.g. under mob zoning. Also, hi legal xfr. costs may limit subdivn., & how small an increment you can add.

In any case, basic ec. of scale is better propn.

Basic direc. of scale is also a matter of proportions:

1. volume too large for owner to oversee properly.

2. No, larger units tend to lower turnover - [will return to that.] Propn. of durables to non-durables rises.

3. Another malproportion. (3) Loss flexibility.

4. Small decisions & small opps. get overlooked - adm. mechanism can only afford to deal w. large ones.

(Large, & durable, too) ~~See~~ E.g. of U.S. Govt. Malallocn.

of res. to concrete, too little to local distribn., & per. land improvement.
another kind of disproportion.

The small opps. do not imply small to returns.

Maybe larger.

5. Internal or intra-mural xptr. cost rises. Esply. if centralized, like farmstead.

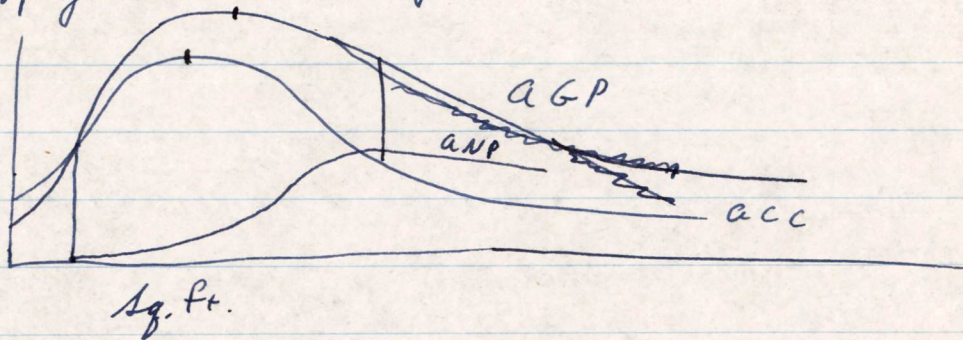
Duplicate units, after a while. Then begin to look for economies a step removed - research, ~~test~~ proving grounds, etc. Or inqst. teamwork.

Most ecsts. skeptical of these claims.

6. Longer lines of control. Not just input, own labor, but the owners over inqrs. Mgt. revn. Failure to account v.c. for basic assets.

7. Strong parts of ent. tend to carry weak.

B. Apply lens ^{anteater?} to bldg. on lot.



ACC is bldg. cost pst

AGP is .. present value pst. (value of bldg. + land together)

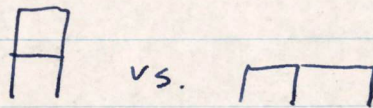
This differs from simpler graph by allowing a stage of Δq rev?
No, but a stage where larger lot size allows more complement/st
i.e., a stage of Δq ACC.

This is not peculiar to bldgs. - applies also to farm rolling
stock, etc.

~~ACC fall bes.~~ For each no. of s^t, limit to ACC bes.

~~Each.~~ ~~For~~ $MC > MP$ from higher bldg.

As can use more land, can cut costs by lower bldg.,
down to 2 stories.



C. $MP = MNP$ for small units.

E.g., add one acre, pull over labor from base acres.

Intramural o.c.

Diff. comes in drawing schedule. Base changes.

D. See p. 4

A.S. 162, Feb. 14.
Scale of firm.

Much social Ag. reth. ~~can~~ can occur using free mkt. as means of cooperation.

Another way is inside large orgn. There are alternatives -- esply. when the big orgn. is govt., or big priv. corps. get so big they become govt. or merge w. govt.

Senator charges that bureaucracy is undermining the armed forces

(The writer, a Democratic U.S. senator from Colorado, has served on the Senate Armed Services Committee for seven years.)

By SEN. GARY HART

New York Times Special Features

It has been more than 30 years since the last clear-cut American victory, the brilliant and audacious landing at Inchon.

Vietnam, the Pyrrhic victory in the Mayaguez affair and the failed Iranian rescue attempt all attest to some deep-seated problems in our armed services. Yet our national defense debate, in Congress and in the press, continues to revolve largely around how much to spend. New ideas, from inside or outside the services, are seldom heard and less often welcomed.

A growing number of my congressional colleagues have come to feel that there is something profoundly wrong. We have joined in what amounts to a military reform movement, an alliance of (mostly younger) military officers, civilian defense analysts and members of Congress. The reformers' goal is to bring our defense priorities back into line with what history tells us is important in winning — and, therefore, deterring — wars.

In seeking to determine where we have gone wrong, we must start by looking at the basic building blocks of any military: (1) personnel, (2) tactics and strategy and (3) hardware.

Personnel questions are usually discussed in terms of pay, service entrance tests, and so on. But these issues miss many of the most critical aspects of military personnel policy.

One such issue is unit cohesion, the psychological bonding between individuals that takes place within the small, basic unit — the fire team, the squad, the aircraft crew, the ship's section. In the stress and chaos of combat, people fight less for "king and country" than for their buddies. If the person next to them is not a buddy but a stranger, they are more apt to sit out the fight or break and run.

Cohesion can develop only when a unit contains the same people for long periods. It takes time for strangers to come to rely on one another. Today we do not provide that time. Many Army combat companies have a personnel turnover rate of 25 percent every three months, the highest in the world. So our troops remain strangers to one another, and strangers do not fight well together.

When we look at tactics and strategy, we find that here, too, basics tend to be ignored. Our doctrine in this field is based on a style of warfare known as "firepower-attrition," the object being to destroy the enemy man by man, killing his troops and blowing up his equipment faster than he can do the same to us. We have fought this way for more than a century.

This style, however, is badly outdated. Firepower-attrition can work for the side with superior numbers, an advantage we no longer possess. We cannot overwhelm the Soviet Union with superiority in manpower and material. We need a different style of warfare — "maneuver warfare." Here, the object is to destroy the enemy's cohesion — by creating surprising and dangerous situations faster than he can cope with them.

A new way of looking at the nature of conflict has been explored in the work of a retired Air Force colonel named John Boyd.

Conflict, Boyd argues, is a matter of "observation-orientation-decision-action cycles," which each contending commander consistently repeats. First, the commander observes — not only with his eyes and ears but with his radar, reconnaissance, etc. He orients — that is, he forms a mental picture of his relationship to his opponent. On the basis of this picture, he determines a course of action — he decides. He acts. Then he begins observing again, to see the effect of his action.

The commander with the faster cycle will eventually win, because he is already doing something different by the time the enemy gets to the action part of his own cycle. The enemy's action becomes irrelevant.

It stands to reason that rapid execution of the Boyd cycle requires commanders with boldness, imagination and initiative. Yet by and large, this is not the type of person being promoted in our armed services today. The cycle puts a premium on decentralization, since rapid decisions can be made only by the officer on the scene. Yet we are busy centralizing our command systems with the latest technology, so the president or a general in Washington can direct a platoon halfway around the world.

The Boyd theory has implications for military equipment as well. In research and development, as well as in procurement of new weapons, the changes made must be quick and major, so as to make the enemy's equipment irrelevant. In our military establishment, the changes are far too slow. A major new weapons system can be 10 to 20 years in development. Our procurement policy favors weapons so complex and expensive that we must keep them in service for decades to get our perceived money's worth.

And much of our equipment is too complex to work well on the battlefield. Look, for example, at the Army's new M-1 tank. It has all the technology money can buy — a gas turbine engine like an airplane's, a computer to control the gun, special layered armor to stop enemy anti-tank missiles. But it has to stop for repairs every 43 miles; the engine eats up so much fuel that it gets only one mile for every 3.86 gallons; the troops often cannot even operate, much less maintain, the computer, and the armor is ineffective against shells fired by enemy tanks. Is it really an improvement over the proved M-60 tank, which costs half as much?

Pentagon spokesmen have taken to calling this a debate between quality and quantity. They portray the services as supporters of quality, wanting only the finest weapons for our soldiers, sailors and airmen. They argue that this necessarily leads to very costly, very complex weapons — the M-1 tank, the F-15 fighter, the big nuclear aircraft carrier. By contrast, they label the military reformers as people who are willing to accept inferior weapons in order to buy more of them — or, sometimes, simply to save money.

In fact, the real debate is between two different
(See FORCES, Page A-7)

Eos. of Scale

Forces . . .

(From Page A-6)

definitions of quality. The Pentagon defines quality in technical terms: High technology equals quality. The military reform movement defines quality tactically, in terms of the characteristics that are most important in actual combat. That definition leads the reformers to emphasize such characteristics as:

1. Small size. Often, being seen means getting killed.
2. Reliability, ruggedness and ease of maintenance. Fragile equipment is soon out of action.
3. Rapid effect. Our highly touted anti-tank missiles, to cite one shortcoming, require the gunner to guide the missile for about 20 seconds, a very long time when someone is shooting at you.
4. Numbers. In tactical terms, quantity is an important quality. The finest fighter plane in the world is in serious trouble if it is outnumbered 3-to-1 or 5-to-1 by enemy fighters.

The same characteristics that give a weapon tactical quality — small size, simplicity, ruggedness — also tend to make it cheaper. Thus, in most cases we can choose between a small number of weapons likely to be unreliable in combat and a large number of more effective weapons. Current Pentagon policy prefers the former.

Where have these misguided policies come from? To answer that question, we must confront some serious problems in the military education and promotion systems.

All organizations need a balance among several different types of abilities — leaders, to motivate other people to overcome obstacles; managers, to organize procedures and processes, and theorists, to determine what the product should be. In a military service, the theorist's role is particularly important; it is the theorist, more than the leader or manager, who understands the art of war as a whole.

Unfortunately, in our armed forces today, these three roles have gotten badly out of balance. Our military educational institutions too often stress management, not leadership or theory. A cadet can graduate from West Point or a midshipman from Annapolis with only a single one-semester course in military history. As one cadet recently wrote, "Cadets are not trained to think and lead, but rather to respond and manage, a situation that we find deplorable."

Poor education in the military schools is reinforced by poor training in the field. To become an expert in tactics, a commander needs to spend time in free-play exercises, where he faces an opponent who is trying to surprise, confuse and defeat him. Instead, most of our exercises follow rigid scripts, where everyone knows well in advance what he and his opponent will do and when. It is more like ballet than war. It is management, not leadership or tactics.

The promotion process further reinforces the manager's predominance. "Efficiency" and "zero defects," the hallmarks of the successful manager, are the best tickets to success. Yet the leader and theorist seldom meet the "zero defects" test.

Their imaginative approach to problems naturally leads to some mistakes, and the promotion system punishes them for these mistakes without rewarding them for innovation. So problems persist and grow, with the underlying reasons often unrecognized and the proffered solutions largely conventional and uninspired.

How did this situation come about? To some extent, the question answers itself: If the military schools do not provide an education in the art of war, and if those who educate themselves and act on their knowledge are not promoted, there will be few at the top to see the need. But that is not the whole answer. We must look deeper still, into how our armed services function as institutions.

There are essentially two institutional models, the bureaucratic and the socialized. In bureaucratic organizations, individuals focus on doing their jobs, defined in narrow "in-box, out-box" terms. This model has become typically American. We see the attitudes it produces in the paper-pushing bureaucrat, the congressman or senator interested only in getting more grants for his own district or state, the assembly-line worker who watches the clock instead

of the quality of his work, the executive seeking laws to throttle foreign competition instead of improving his product.

And we see it in the military. Adm. Elmo R. Zumwalt Jr., the former chief of naval operations, has described some of the ways it works in the Navy. For the last quarter-century or more, he writes, "there have been three powerful 'unions' as we call them in the Navy — the aviators, the submariners and the surface sailors — and their rivalry has played a large part in the way the Navy has been directed. . . . Whichever union a commander comes from, it is hard for him not to favor fellow members, the men he has worked with most closely, when he constructs a staff or passes out choice assignments. It is hard for him not to think first of the needs of his branch, the needs he feels most deeply, when he works up a budget. It is hard for him not to stress the capability of his arm, for he has tested it himself, when he plans an action."

The bureaucrat's narrow focus leads him to believe that the success of his small group within the organization is more important than the goals of the organization as a whole. The socialized model,

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on the other hand, defines an individual's job quite differently. It seeks to persuade all who work within the organization to focus on its overall objectives.

Bureaucratic behavior thus lies at the core of America's military inadequacies. It is a far more fundamental problem than the budget level of any given year. War demands rapid change, to present the enemy with the baffling and the opaque, resolving quickly into the surprising and dangerous. But change is bureaucratically uncomfortable; it upsets the existing arrangements, the traditional fiefs. In industry, bureaucratic behavior leads to bankruptcies like that of Penn-Central. In government, it leads to massive waste. In war, it leads to defeats such as Australia's humiliation by Prussia in 1866 and France's collapse in 1940.

The Pentagon may not be a pleasant place while we re-examine and reform our military services. But it is far less pleasant to confront the new realities for the first time on the battlefield.

The time for reform has come.

The ECONOMIC INSTITUTIONS of CAPITALISM

Firms, Markets, Relational Contracting

Since the publication of Oliver Williamson's modern classic *Markets and Hierarchies* in 1975, transaction cost economics has emerged as a viable and robust approach for studying economic organization. Viewing corporations not as production functions but as governance structures, its theory focuses on negotiating, executing, modifying, and renewing the myriad contractual agreements—formal and informal—by which firms seek to economize on the cost of transacting business.

Now, in this long-awaited sequel to *Markets and Hierarchies*, Williamson develops and extends the transaction cost approach, applies it to a range of economic institutions, and probes its implications for public policy—including its potential influence on antitrust and merger guidelines, labor policy, and SEC and public utility regulations. His brilliant comparative institutional analysis consistently ties questions of economics directly to those of organizational theory and contract law.

Williamson begins with an overview of transaction cost economics and its behavioral assumptions. He also sets forth two crucial—and closely related—principles: asset specificity, which refers to investments that are highly specialized and can be redeployed only by greatly sacrificing productive value, and the “Fundamental Transformation,” in which the initial winner of a bidding competition thereafter enjoys an advantage over rival suppliers because of its ownership of or control over transaction specific assets.

Next, Williamson discusses vertical integration, showing that it may often result not from technological determinism or the desire for monopoly power but from a pragmatic concern for mitigating the contractual hazards of the Fundamental Transformation. (The transaction cost hypothesis not only predicts selective vertical integration but its results are borne out by the data.) Then, demonstrating that the size of a firm has boundaries imposed by incentive and bureaucratic limits, he returns to the uses of *nonstandard* contracting to achieve lasting commitments

between buyer and supplier. While it was earlier believed that such contracting practices were contrary to sound public policy, he argues persuasively that many nonstandard arrangements “serve legitimate transaction cost economizing purposes.”

Finally, Williamson extends the transaction cost model to the organization of work and labor as well as to that of the corporation itself. First establishing that hierarchy can be responsible for comparative organizational economies, he examines the governance structures suited to firms with both specific and nonspecific human assets. He also traces the evolution of the corporation from its traditional unitary form to its modern, multidivisional form, and explores the governance needs met by the corporate board of directors. Concluding chapters analyze regulation in the context of franchise bidding for natural monopoly, and summarize antitrust issues.

Throughout, Williamson contends that an accurate assessment of the economic institutions of capitalism cannot be made without recognizing the central importance of transaction cost economizing and its emphasis on *organizational* (as opposed to technological) features as well as *efficient* (as opposed to monopolistic) practices. For economists, specialists in organizational theory, and attorneys in contract, corporate, antitrust, or labor law, it provides a wealth of dramatic insights into economic organization available in no other single volume of its kind today.

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Free Press News

**THE
ECONOMIC
INSTITUTIONS
OF
CAPITALISM**

Oliver E. Williamson

The Free Press

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Evidence

Misc. of scale, evidence

- Underuse of credit, despite having best credit [†]
- Tax-loss farming, neg. profits
- Studies re sources of innovation. Diverify. by agn., ^{not innovation.} [★]
- of bureaucratic behavior, risk-averse [★]
- Underuse of K, shown by lower T & less labor
- Loss of stockholder control.
- Durable assets, slow replant., vulnerable to obsolescence
- as cartel leader, have to restrain more
- Conflict in large groups

To have autonomy, which all desire, mngt. must insulate

self from stockholders, owners; indiv. must protect ^{themselves} from mngt.; etc.

Incentives for mngs. & workers

- Cost of comm.
- " " xptn
- " " control of time & property
- To avoid cost of unbdy. & rebdy. going concern.

Take on losing invts.

- Inertia, slow to turn around
- Smartest don't rise to top, but best infighters
- Owner loses say over dividends
- Hidden weaknesses accumulate
- Diverifying & slowing down to sustain price.

★ Penalties for error outweigh rewards for success.

† This suggests they can't make the money pay for itself.
They grow by internalizing earnings, captive K.

Mqpl.

1. Society divided into problem makers + problem solvers.

Mqpl. teaches us to solve problems.

2. Dissect. of scale

- centralize, rigidity of orgn.
- smothers indiv. initiative
- prevents adaptation in emergencies
- insufficient coordn.
- take spark out of indiv. living
- ~~soften~~ soften character, people lose self-reliance

3. Re ERA

If the smart capable women refuse to bear children, who will remain to do it?

It's important that intellectuals remain coarse + earthy — in a reproductive mode.

4. Important skill: evaluating relative importance of separate items in a mass of detail. Turning chaos into order, structured around significant ideas.
Students often seize on little procedural details. They

grab superficial + incidental ideas. Thinkers that flash in the light like platelets of gold, + miss the essential structures.

Best remedy: solve problems.

My problem: formulate problem for them to solve.

5. ~~You can't~~ If you don't learn about us from me, you will learn from the leaders - + they ~~their tuition is~~ charge a high tuition.

Life + Nature are what they are. Most people live in a try to cope by following empty slogans, wishful thinking — or rules imposed by others. No wonder they have trouble coping.

6. Many of you will go into specialized niches where you don't need to think much.

But that makes you dependent, + dependence makes you exploitable. Like those who depended over much on soc. sec.

7. Most of you are scared on an idea of finding perfection. ^{rest} ~~then~~ ^{piece} ~~piece~~. Would not like that. You look for training, learn a few tricks, they see

you through life, never have to change again.
 As no step in this dream do you have
 to think for yourself, solve problems.

That's not how it is! Discern,
 bring to order, think, solve — is what you
 must learn.

You are a craftsman, always coming closer

8. Most of what you hear is the naive pishpash
 of mumsqualls.
 Some, tho. is the crafty, cut-fal innuication
 of exploiters
9. Men in the mass, never brook the destructive
 discussion of their fundamental beliefs.
 (As. ed. began course w. questionnaire re
 what students believe. Then tell it back
 to them.)
10. Truth is not always soothing. Analysis helps
 us make hard choices, but its logic drives us to
 them. It is not for dilettantes who like tokenism.
 Most prefer illusion to truth. It soothes; it's easier to grasp.

11. An idea that is attacked enjoys an advantage —
 esp. if there are martyrs.

So, when presenting favored ideas, note how men
 were driven from jobs for them (in the past —
 no one wants that danger today.) Or shot,
 hanged, burned, etc.

So the idea is suppressed. Secret. Hidden.
Unsold. Mysteriously taken from libraries.

Thus get sentimentality with you.

12. Mankind is more impressed w. posturing sentiments
 than w. sober recitals of truth.

13. As to pressing social problems like unempl.,
 ecsts. do not want to solve them, but to
 retain them as mysteries over which they
 are the high priests. Any more than
 priests & rabbis want to wipe out sin,
 (or policemen crime, or doctors illness). They
 want to live off it.

✓ But Mpl. Ecs. is diff; no threat to
 caste in helping people make money.

14. Too much objectivity is depersonalized, leads to depression. Buddhism is subjective + personal. Keep healthy, don't worry, + egoism is a duty. Deliver yourself from suffering, cheerfulness, quiet, + absence of desire. For mgmt., then, put analysis in service of the ego.

15. Hope is great motivator. Hold out hopes to students. Promises - how analysis will help them, they can hope to manage, be mgts. In spite of their physiolog. limitations. A few can make it anyway. More benefit from learning principles. Rise to the top - then succeed in love.

16. But principles are good, depersonalized. Successful people + products have unique personalities. They are individual, highly differentiated. Called "strategy".

14. True problem-solving is in you. Ability to cope w. life - you have it. Solving problems is the proof.

Life is a series of problems to solve. But to solve, you must get yr. mind in a problem.

solving mode. Get your ass in gear. This is a different state of being - psycho + physiology. You'll recognize it when it happens to you - a change from passive + receptive to active + analyzing, from dependent to assertive.

You have enormous brainpower, unused. You just need to learn to use it. Way to do that is challenge + response: problem + solution.

17. The word kills; the spirit brings to life. That means, look beneath forms for substance; beneath mechanisms for ideas + principles. What is really going on here? Look beneath outward forms for inward substance.

14. All the genius that advanced the human race lies latent w/in you. You have a piece of the "great brain", the collective ability of mankind. This is the "good news". The bad news is, you have to put yr. ass in gear to develop yr. inborn heritage of brainpower. In this world of ideas, yr. forebrain never die, their ideas live on; + you never die. The

accumulated knowledge & power & capital of the race lives on.

18. A code of laws, rules for behavior, is slow accretion of experience.

Neoclassical is more like Revelation. Not from experience, but came into being complete, perfect, w/o a history.

Tradition differs from law. It assumes a static law, of divine origin, is a crime vs. forefathers to go. it.

19. You will be what you hope & aspire to be. If you want ~~the~~ mediocrity, that's ok, the econ. machine needs cogs, & I wdn't want to make you discontent. For you I have a syllabus, schedule, etc. I will judge you lightly & send you on your way.

Some of you will aspire to be leaders, creators, ~~prob~~ you will say yes to life - answer its challenges. I will give you harder challenges, bcs. you will regard hard task as a privilege. It is a recreation for you to lift a burden that wd. crush mediocre people. You recognize it as part of growth, something that sets you apart from & above

others.

Life out there is a caste system, based on merit.
You choose your caste by yr. self-image.

20

To the mediocre, mediocrity is a form of
happiness. They usually grasp at some early
specialize.

Their happiness depends on contentment w. their
petty calling. If this is yr. choice, yr.
self-image, choose it knowingly — w/o
resentment, or envy. For these latter destroy
contentment. Recognize that you made a
choice for the quiet life.

Disec. of Scale

1. Everything integrated; change one thing, involve all.
Leads to conservative bias; blocks change.

(Scale of cities is different. - all indep.)

Also blocks eccentricity. E.g. radical ex. at UCR. All parts must "serve" others, in the way they expect, standard + traditional.

Indian Stories (Parables)

1. The Chief ~~and~~ who offered the white man all the land he could walk around in one day.

~~22~~ Use in Appl. Ecs. re direct. of scale

(not used, F/81)

Causes of Dispers. of Scale

A. Spatial factors.

1. Internal distances increase

a. From nucleus to outposts

For instance as e.g.:

Hauling, surveillance, communication & coordin.

Home as e.g.

Dim. value of land & floor space

2. Δ cost of land

Wider streets e.g.

Bigger bldgs. any problem

Bigger trucks, ships

3. ~~Distance~~ External distances: dist. & collection

Volume effects v. distance effects

"Voltage drop" point and cross-hauling

B. Time factors

1. Slow starting, stopping, turning

Load assembly

Trains, making & breaking. 747 Dumbos

Breakdowns, critical downtime

Big generators

Highly integrated, interdependent systems.

Vulnerable to strikes

2. Less frequent service

3. ~~4~~ Inertia of large org. - slow to change.

Reinforced by longevity of large K, & specialized K
& people.

Obsolescence.

4. Hi fixed costs vs. variable demand.

C. Gravity factors

Weight & vol. Δ w. cube of dimensions, if solid.

Hi-rise bldgs. law of gravity overpowers
law of cube.

D. Human factors, personnel

1. Surveillance lost.

Cattle rustling; fruit theft
Thief, embezzlement

2. Dehumanization.

a) Bureaucracy. Slow bank personnel, Tyler B of G.
Excess profits piddled away.

b) Communication.

Loss of meaning in transmission.

✓ Bottleneck at hub of orgn. Cognitive limits.

Force coord. across spokes, along veins,
lose control.

3. Info. leakage.

Intell. espionage.

4. Conflict of motives, owner v. mgr.
Share croppers & land
Mgns. act like sharecroppers.

✓ 5. Need for broad simple policies. LCD.
Uniform. rigid.

✓ 6. Mts in T.O.s. do not fit individuals.
One has to yield.

Compounding the problem are the high fixed costs of agriculture today. As Robert Duxbury, a farmer and former South Dakota Secretary of Agriculture, told the *Wall Street Journal*, "In the '30s and '40s, if there was a bad year, you could slide along awhile; farmers burned wood, had no electricity, and raised their own food. Now, your fixed expenses are so high, you can lose more in one year than you can recover in five or ten years." These fixed costs include interest payments on land and operating debt, machinery/equipment costs, fertilizer and pesticides, fuel, seeds, and transportation and storage costs.

Who will replace the farmers squeezed out by the farm depression? With farm entry costs (for a mid-sized midwestern family farm) now estimated at nearly \$1 million, chances are good that the new

will be absconders w. \$.

Disc. of scale.

Disc. of mechanization,
K-int., dependence on hard
Tech.

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Executive Flaw

Succession: When Firms Often Falter

By JOHN M. BRODER,
Times Staff Writer

David G. Schmidt's career at Ducommun Inc. came to an abrupt end Feb. 26, when he resigned the company presidency after just 363 days in the job.

The public explanation was that Schmidt left because of differences in business philosophy with his boss, Wallace W. Booth, Ducommun's autocratic chairman and chief executive.

The dispute, however, was deeper and far more personal than that. The issue was who would succeed Booth as chairman—and when.

Schmidt was Ducommun's crown prince, in line for the chairmanship upon Booth's planned retirement next year at age 65. Schmidt, 46, had been Booth's protege, almost a son to him, for more than a decade at three different firms.

But the plan for a smooth succession fell apart. Schmidt showed too much impatience for the top job; Booth decided that Schmidt was not the right man to replace him and reconsidered his retirement. Schmidt was given a severance payment and pushed out of the company.

Problem Spans World

And, like so many neatly laid plans for transferring power, the firm's strategy collapsed in a clash of ambitions. In the story of Ducommun, a Los Angeles electronics and aerospace concern, can be seen the age-old themes of betrayal and estrangement, of frustrated princely ambition and regal refusal to yield power.

The question of succession bedevils every organization on Earth, from the American family to the Roman Catholic Church. It spawns bloodshed in organized crime, shatters families, sparks sectarian warfare and sets the future course of nations.

The study of succession is more an art than a science, a central concern of prophets, poets, playwrights and psychoanalysts. It is the motif of the game of chess, in which the move of every pawn affects the defense, and ultimately the demise, of a king.

No Proven Formula

In corporate America, the language of succession planning is borrowed from the Bible and medieval monarchies: dynasty, crown prince, heir apparent, kingmaker, the anointed. A multibillion-dollar industry of management consultants and executive recruiters has developed to counsel firms on how to handle the problem, yet there is no proven formula for successful transition.

American democracy and the Roman Catholic papacy have survived as long as they have, in part, because both have explicit and accepted rules of succession. But no 25th Amendment or College of Cardinals exists in the corporate sphere to ensure an orderly and peaceful transfer of power.

"Choosing the next CEO (chief executive officer) is the single most important decision any company makes," said Alex Kyman, president of City National Bank in Beverly Hills. Kyman is the pre-

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Compiled from the Los Angeles Times, the Times-Washington Post news service and for wire and supplementary news agencies.

In View

Anna Conrad, who survived an avalanche in which seven skiers died in 1982, now teaches skiing safety at Mammoth. (Page 1.)

Many people appear to favor drug-testing in the workplace—as long as it's being done in someone else's profession. (Page 1.)

If William Inge were around to see the revival of "Picnic" at the Ahmanson, he'd probably—with one or two reservations—be pleased. (Page 1.)

ow Monkeys

head of the National Aeronautics and Space Administration after leaving General Dynamics. He has since resigned from NASA.

A Brea metal-plating firm has been charged with repeated illegal dumping of toxic chemical solutions into sewers in what authorities said was the toughest enforcement action yet against Orange County industrial polluters. The district attorney's office and the Orange County Sanitation Districts are seeking civil penalties of \$266,000 against Bristol Industries and its president, Frank Claus, for violating state hazardous waste disposal laws and sanitation district discharge requirements for the so-called "batch dumping" of excessive amounts of heavy metals on three days in January and February.

Stressing the seriousness of the crime, U.S. District Court Judge A. Wallace Tashima sentenced Tony Carreon, 54, of Pico Rivera to two years in federal prison for conspiracy and fined him \$2,000 for possession of more than 60,000 cartons of stolen untaxed cigarettes. Asst. U.S. Atty. David A. Katz said evidence at the trial disclosed that Carreon and Eugene Edward Seal, 57, still a fugitive, arranged to bring a truck load of cigarettes—stolen in transit from Georgia to Ohio—to Los Angeles for sale for little more than a dollar a pack. The criminal operation was discovered by the FBI.

An accused murderer on the FBI's 10-most-wanted list was arrested in San Diego after a resident recognized him from an FBI poster in a local post office. Brian Patrick Malverty, 26, using the alias Tom Louzzi, had been living in San Diego for several months and was working as a self-employed carpet layer, FBI agents said. Malverty is wanted in connection with the double slaying of Gene West, 47, and Ricky Lee Sims, 17, in Atlanta on April 23, 1985. Authorities suspect that the killings may have been drug-related. Malverty is being held in federal custody pending his extradition to Georgia.

A 2-day-old boy was in guarded condition at California Hospital Medical Center after being found locked in the trunk of an automobile parked on USC's fraternity row. A passerby called police after hearing the infant's cries and tracing them to the car. Officers pried the trunk open and took the baby to the hospital, where he was treated for dehydration and subnormal body temperature. Nurses said the child weighed six pounds, six ounces and had blue eyes. Police were searching for the parents.

POWER: Most Firms Lack Plans for Succession

Continued from Page 1

assumed heir to Bram Goldsmith, 63, the bank's current chairman. As in many firms, however, the question has never been broached openly.

"We've never discussed it," Kysman, 56, said. "It's obviously a delicate matter, particularly when you have a dynamic chief executive who normally is not in the mood to talk about his human frailty."

Grooming a new generation of leaders is at once the most critical and the most sensitive of tasks for business managers. Those who do it poorly—or fail to do it at all—risk the future of their enterprise.

According to one study, 70% of family firms collapse or are sold when their founders die, largely because of failure to prepare a successor. Examples abound of larger companies floundering after the unexpected death or removal of their chiefs.

Even the largest multinational corporations, which would be expected to groom a sizable pool of talented executives, can suffer for years after the departure of a charismatic chairman who neglected to provide for an orderly succession.

Reluctance at the Top

Booth of Ducommun spoke candidly about his clash with Schmidt and his desire to find a successor and step aside. Yet, at this point in the process, he has shown reluctance to give up authority, and company insiders are beginning to doubt his stated intention to retire next year.

Last month, Booth named W. Donald Bell, 48, to replace Schmidt as his No. 2 man, but he is withholding his endorsement of Bell as heir apparent.

"I think it's generally known that he is the only logical candidate to succeed me, but others might come along who are younger," Booth said. "If it doesn't work out, I'll probably be going outside" the company to find the next chairman.

Students of succession say that this is the classic behavior of a strong man nearing the end of his reign.

"CEOs, for the most part, are passionate, compulsive, driven people. They don't want to give up their power, and there are lots of things they do to avoid the inevitable," said Robert Paulson, managing director of the Los Angeles office of management consultants McKinsey & Co.

Typical Defensive Plays

The defenses of a chief executive officer include assuring himself of a friendly board of directors, stirring

losers. The eventual winner assumes the chairmanship but is surrounded by enemies or preoccupied with filling top posts vacated by dispirited losers. In contrast to his unchallenged predecessor, the new boss looks weak. In some cases, the company recalls the former chief to straighten things out.

One time-honored tactic, practiced by industry giants such as Armand Hammer at Occidental Petroleum Corp., Harold Geneen at International Telephone & Telegraph Corp., William Paley at CBS, Henry Ford II at Ford Motor Co. and Donald T. Regan at Merrill Lynch Pierce Fenner & Smith Inc., is to run several candidates through the No. 2 job and replace them after brief tenures because of age or some unspecified shortcoming.

French History Example

One former Merrill Lynch executive compared Regan, who ran the firm from 1971 to 1981, with Louis XIV, who structured his kingdom so as to eliminate potential rivals:

"It's a fascinating study. Louis XIV centralized France by bringing in all the nobles from around the country to a glittering court at Versailles. They all left their drafty castles and boring night life—but they also left their private armies and independent power bases.

"Regan brought the managers of major Merrill Lynch offices around the country to New York. He took away their real power bases and gave them staff jobs with no authority."

Regan then placed a series of managers in the No. 2 slot, but never allowed any of them real power or a realistic chance to succeed him. Three highly qualified Merrill Lynch managers, stifled under Regan's autocratic system, departed to become chief executives at other major financial institutions: George Shinn at First Boston Corp., John Orb at Smith Barney Harris Upham & Co. and Ross Kenzie at Goldome.

Regan's ultimate successor, Roger Birk, took over the chairmanship when Regan left to become President Reagan's first secretary of the Treasury. Without Regan's grasp of the brokerage house's levers of power, Birk lasted only two years in the job.

The companies that have the least difficulty with succession

generally are those that have carefully charted a route to the top, spelled out the rules of succession and created a corps of executives with broad backgrounds of experience and strong constituencies in various parts of the firm.

International Business Machines Corp. is the classic case. The face at the top of the giant bureaucracy changes predictably, each chief executive stepping aside at age 60 after a comparatively short stint during which he shares power with his successor.

The naming of a new IBM chairman last month was played on Page 36 of the Wall Street Journal in the paper's Who's News column. When most companies the size of IBM choose a new chief executive, it is a major news story.

"From the management-succession point of view, IBM is a well-oiled machine," said a computer industry analyst. "IBM is organized like an efficient army. Substitution of one *generalissimo* for another doesn't make much difference."

At many other firms, however, it makes a critical difference. The most dramatic examples are to be found in cases of the sudden death of a founder or central figure in a business.

Sudden Death Leaves Void

In June, 1983, Eagle Computer Inc. was a high flier in the booming computer business. The Los Gatos, Calif., firm (since moved to Garden Grove) had grown from \$8 million in annual sales to \$80 million in a little over a year. It had just announced its first public offering of stock, which made its president,

Dennis Barnhart, an instant millionaire.

The day the stock was issued, Barnhart accidentally drove his new Ferrari over a cliff and was killed. The firm has suffered several other setbacks since then, including a legal fight with IBM and two consecutive years of multimillion-dollar losses. Barnhart's replacement, Ron Mickwee, lasted barely a year in the job.

Eagle Computer's current chief, co-founder Gary Kappenman, said that the company would have had difficulties even if Barnhart had lived. His sudden death compounded the problems, however.

"I was 38 at the time and Barney was 40. We certainly weren't thinking about drastic things like that happening. . . . It hurt, on a personal level and on a production level."

'Clear, Formal Plan'

Kappenman added that, even today, Eagle does not have a formal plan for replacing the chief executive. "It hasn't really been discussed. It's something you don't want to face unless you have to."

One company that has an explicit plan for dealing with the potential loss of its top officers is Arrow Electronics, based in Greenwich, Conn. Arrow lost 13 of its ranking executives, including two of its three founders, in a hotel fire in suburban New York in December, 1980.

"We have a clear and formal succession plan," said John C. Waddell, the current chief executive and the surviving co-founder.

Please see POWER, Page 13

Gavin's line in a TV liquor commercial before he became ambassador—"Have you tried the test of maturity?"—triggered endless plays on words in the Mexican press as it ridiculed his nomination. "Perhaps we should name Can-

tinflas to Washington," a Mexican official remarked sourly, referring to the Mexican comedian who played the part of Passepartout in the film version of "Around the World in 80 Days."

Purcell recalled that when Rea-

gan tapped Gavin to be ambassador, "many of my Mexican friends said: 'That's an insult, how can you send us an actor?' I said: 'You don't understand, you should take it as the highest compliment. The President of the United States, who

thinks highly of himself, chooses someone who is like himself.'"

The ridicule endured by Gavin was similar to that heard by Reagan himself—and eventually overcome—when he ran for governor of California and for President.

I demand quality . . . But I didn't get where I am by paying more than I had to!

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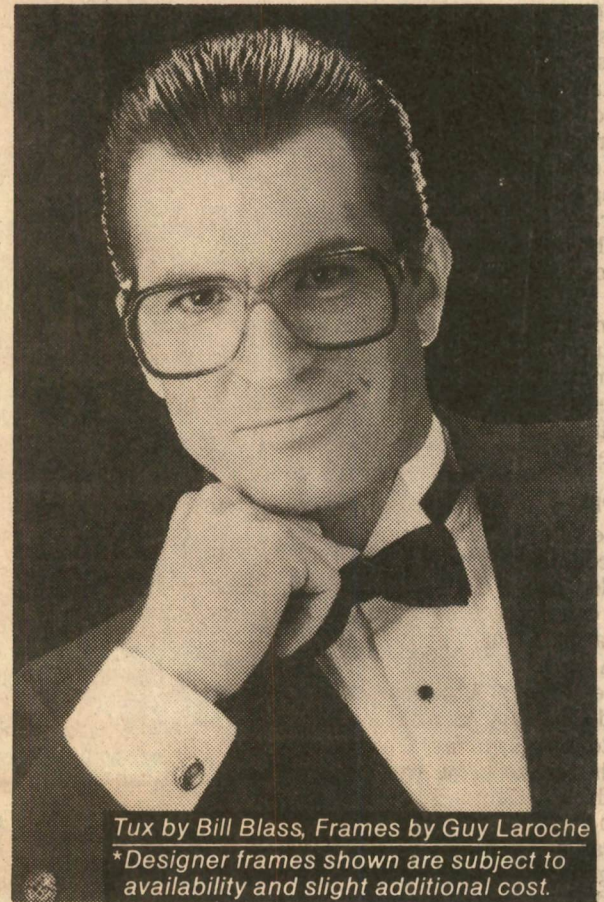


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POWER: Few Top Executives Groom Successors

Continued from Page 12

"I have a president and chief operating officer, and he would be the clear successor."

"I'm perfectly willing to say it out loud, because that's why the plan is there. It's obviously important, given our experience, that there be a clear line of succession."

Arrow has trod a rocky path since the 1980 catastrophe. Earnings plummeted in 1981 and 1982, rebounded in 1983-84, then fell again last year. Waddell blamed many of the problems on an industry-wide slump, but said that rebuilding the devastated executive corps consumed much of the time and energy he otherwise might have devoted to corporate strategy.

Turning over the corporate reins probably is most difficult in family-controlled businesses. Families have been shattered and empires diminished by disagreements over who would assume control of the enterprise.

The Bingham family of Louisville, owners of the Louisville Courier-Journal and other media properties, was driven to put its holdings up for sale earlier this year after an emotional family feud erupted over who would operate the family business. The fight pitted father against son, brother against sister. Although father and son have reached a limited reconciliation, the tragedy tore apart a proud, patrician clan and caused dissolution of a 70-year-old company.

Much the same outcome befell the Uihlein family, which owned the Schlitz brewery in Milwaukee. The large family, which controlled

nearly three-fourths of the brewery's stock, had a history of family brawls that exploded in tempestuous corporate annual meetings. When Schlitz President Robert Uihlein Jr. died in 1975, family members could not agree on an acceptable successor. The brewery's fortunes deteriorated and the company was sold to Detroit's Stroh Brewery Co. in 1982.

Publicly held companies are not scorched by the emotional heat that family succession fights engender, but the process is touchy nonetheless and leaves many—such as Ducommun's Schmidt—feeling betrayed and personally hurt.

It is a common misconception, encouraged by corporate public-relations officers, that chief executives of major companies are "elected" by the board of directors in a rational, democratic way. In fact, most American CEOs are hand-picked by their predecessors.

A 1982 study by the Conference Board, a business research organization in New York, found that two of three current CEOs expect to name their successor with little or no involvement of others. Only about one in five chief executives is chosen by a corporate board of directors.

"As long as the corporation is doing well, the CEO is able to name his successor from within the corporation with little interference from the board," said Michael P. Allen, a sociologist at Washington State University who has written extensively about the subject.

"However, 'crisis' succession, precipitated by some form of fail-

ure, often weakens the hand of the CEO in naming his successor and is more likely to involve other board members."

What do CEOs look for in a successor? Another Conference Board survey found that by far the most desired trait is "personal leadership style," followed closely by an "aggressive, competitive outlook."

These are qualities most chief executives ascribe to themselves. In other words, CEOs seek their successors in a mirror—and often are disappointed.

"They tend to look upon themselves as almost superhuman beings. An individual like that is unlikely to tolerate or develop someone like that under him," said management consultant Robert Waterman, author of the best-seller "In Search of Excellence."

Creative leaders tend to surround themselves with technicians or administrators, Waterman said, while strong potential successors grow impatient for power and leave. The ultimate effect, he said, is "a natural process of decay in companies."

William Ouchi, professor of management at UCLA, said the issue of succession strikes at the heart of every chief executive and every parent. Their actions and motivations cannot be studied scientifically, he said, because "fundamentally, it's not a rational, orderly process."

"It's the first time they are confronted directly with the reality of their own mortality. And mortality is not something that's dealt with rationally by most people."

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Study Aid #4

Econ. 162, F86

Advantages and disadvantages of large-scale operations

A. Advantages of large-scale operation, ownership and control

1. Engineering indivisibilities. *ANP concept needed.*
 - a. Simple geometrical laws: the circle, the cube, etc.
Difference of indivisibility and discontinuity. Land and labor more divisible than capital.
 - b. Specialization of capital
 - c. Other
2. Labor specialization and teamwork
3. Reducing transaction costs: substituting intra-mural for extra-mural transactions.
4. More objective, non-familial personnel evaluation and leadership succession.
5. "Massed reserves"
6. Bulk receiving and deliveries: fuel, utilities, raw materials, products.
7. Bulk transactions: purchases and sales. By-passing middlemen.
8. Advertising; brand recognition.
9. Diversifying:
 - a. To pool risk, stabilize returns.
 - b. To permit assuming greater risks (e.g. oil exploration, avoiding "gambler's ruin": safety in large numbers).
 - c. Diversifying products, supply sources, plants, regions.
10. Vertical integration to protect sources and outlets.
11. "Internalize externalities": capturing and bottling your own fragrance; minimizing your own stench.
12. Superior credit rating: lower borrowing rate; longer terms; less collateral per dollar borrowed; lines of credit; less transaction-cost per \$ borrowed; etc.
Exaggerated need for credit caused by high values of "good-will" and land. Lower cost of "carrying" durable assets.
13. Reserves for price wars ("predatory" pricing, promotional pricing, etc.)
14. Full use of tax losses.
15. Political influence. Subsidies; military and other public contracts; tax preferences; sweetheart leases and other deals; bail-outs (RFC and its tradition; Continental Illinois Bank; Chrysler Corp); dealing on equal or superior terms with governments, from small towns to 1st-class sovereign powers;

"chosen instruments"; utility rate discrimination; support from social-climbers and yokels; dependence of candidates on large contributors; etc., etc. The long, sad history of governmental bias against small business.

16. Use of subsidiaries to avoid regulations (e.g. against trading with the enemy).

17. Preferential access to markets when access is rationed by cartels and/or governments based on capacity (e.g. to produce corn from 300 acres you have to own 400 acres, because there is a 25% acreage cutback).

18. Market Power. Ability to monopolize markets; "throw weight around" when dealing with small suppliers and contractors and customers; dominate trade associations, etc.

Question: which of the above are net social benefits; which are zero-sum or negative-sum benefits?

B. Disadvantages of large-scale

1. Space. Long hauls within the firm: example of farm layout. Long hauls for supplies and markets and waste disposal.

After exhausting scale economies in capital, mitosis sets in, new nuclei needed -- then where are the scale economies?

2. Gravity vs. geometry. Larger buildings need heavier footings, have longer spans to support, etc. Russia's ideological fixation on giant machines and the disaster of Russian farming.

3. Loss of "edge effect". Superior productivity of edges: e.g. in parks, hotels, retailing; accessibility of edges for maintenance and repair.

4. Time. Big things are slow to assemble and disassemble, start and stop: e.g. long trains. Long building period, preceded by longer period of land assembly or reservation. Once built, many big hulks don't get used all the time: long build-up period to full utilization, if built ahead of demand (e.g. many power plants); low load factors unless prevented by costly connections to market; kept around after demand has subsided or changed, wasting their sites. "The case of the traveling demand curve", and the plant that is always too large or too small.

Inflexibility.

5. Land requirements. Big trucks and turning areas; ocean vessels and harbor dredging; dumbo airplanes and airports (and reduced frequency of flights).

TO BE CONCLUDED

Land assembly time for large capital: either assemble small units; or go to cheap land in bad location; or hold for decades in advance: all are expensive. Increasing cost of land as neighbors get crowded.

6. Absentee ownership. Separating owners and managers - crossed incentives. Tenants vs. owners; workers vs. managers vs. owners. Pilferage, loss of surveillance. Effect of absentee ownership on attitudes toward property, theft and maintenance.

Managers' internalizing profit against wishes of owners, investing captive capital for low returns.

7. Cross-subsidy, the growth of parasites. Winners carry losers; past successes carry present failures; good risks cover bad risks (the seamy side of pooling risk); waste concealed by accumulated wealth; insiders get to use resources that do not appear in budget; line workers carry swollen staff; growth of frills, hobbies, indulgence of uneconomic ideologies.

8. Excessive land and capital-intensity to minimize management problems. No new jobs are coming from the big firms. Surplus funds go questing for outlets, and the slower the turnover the longer before the "problem" of placing the funds returns. Slow turnover, slow replacement, obsolescence and senility.

Historical success of GM in offsetting this weakness. Management genius of Du Pont and Donaldson Brown. (Has it finally run out its string?)

9. Long lines of communication; loss of contact:

a. Owners and managers; b. Managers and workers; c. Salesmen and customers; d. Engineers and everybody: the propensity to play with other people's money and rationalize on "technical" grounds. Replacement of profit motive by "professional fundamentalism": examples from medicine, education, forest management, research, nuclear power. Capturing pension funds; etc.

10. Goal displacement. Advancing the firm is submerged to advancing in the firm. Skills of the courtier win; those of the producer lose. Creative people leave to start new firms.

11. Alienation. Loss of sense of justice, as top management fails to reward functional effort.

12. Small things get overlooked. Small things may have high rates of return, and high growth potential. Examples: U.S. Government; public works planning, with trunks preferred over branches and twigs; preference for big hardware over humble spare parts -- the "Russian Disease", right here at home.

13. Innovation gets choked, when it threatens or inconveniences the main chance of the time. (Case of the Erie Canal and the Pa. R.R.; case of Calavo and the Gwen Avocado; etc.)

14. Excessive diversification to avoid self-competition. Tendency of largest firm in cartel to restrict output the most, go into other lines. (Saudi Arabia and Alaska subsidizing petro-chemical plants; from USS to USX; from ALCOA to Century City, Kaiser to Kacor, etc.: what's in a name?)

15. Bureaucratic cultures and distorted reward systems militate against risk: high penalties for error, low rewards for success. Rewards for back-scratching, penalties for criticizing. Premium on herd-following, conventional behavior.

16. Empire-building as a personality disorder: hooked on acquisition, bored with stewardship. Henry VI effect: "Glory is like a circle in the water, Which never ceaseth to enlarge itself, Till by broad spreading it disperse to nought."* Overextension precipitates liquidation, and you read reports of the wreckage in the papers every week.

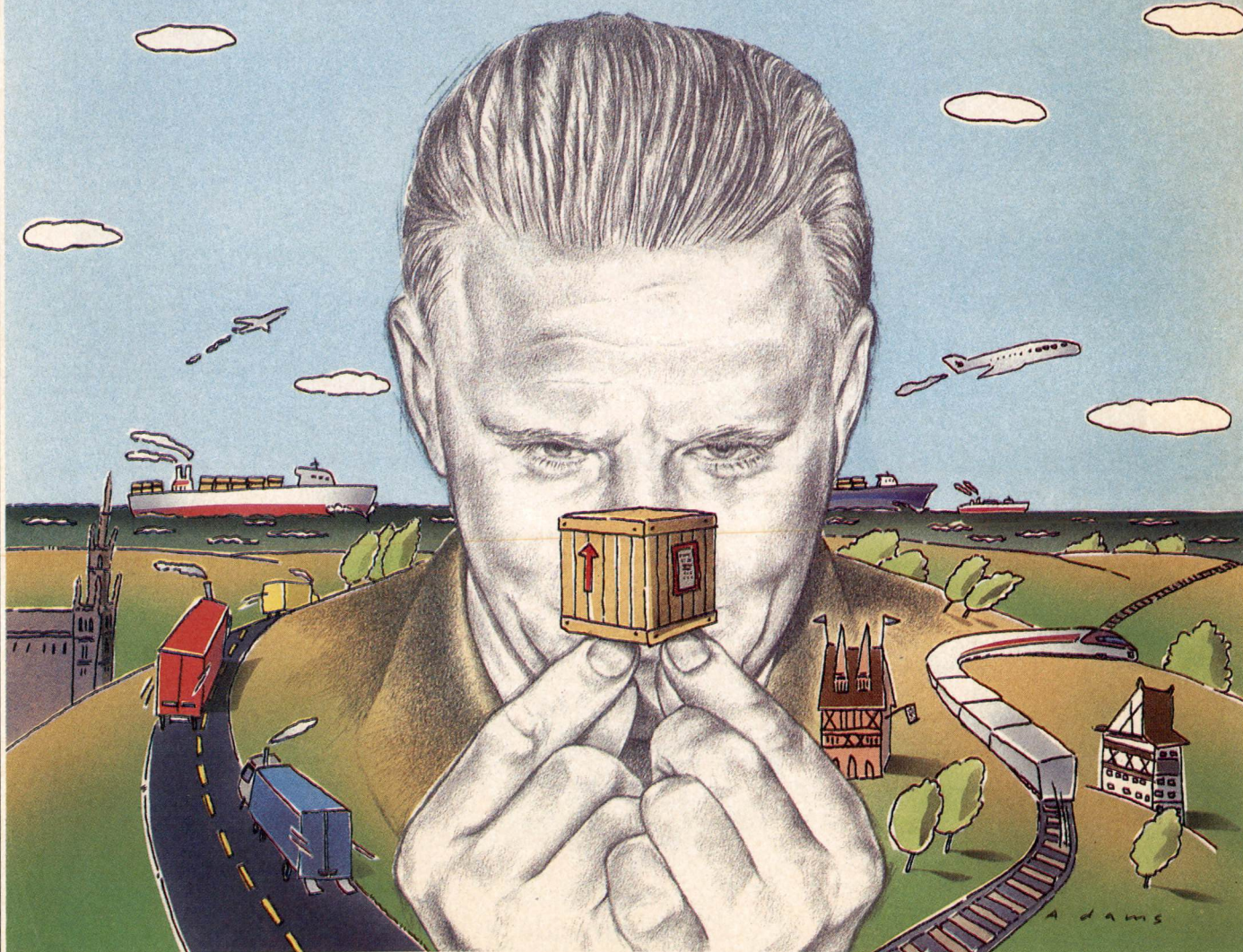
17. Underuse of credit for production; overuse for acquisition. (This one is frankly tricky and puzzling.)

18. Weak record of innovation per dollar of assets -- a fact masked and obscured by publicity given to innovations from large firms.

*Poets seem to relish this theme. Here is Kipling: "Far-called our navies melt away, On dune and headland sinks the fire; And all our pomp of yesterday, Is one with Nineveh and Tyre." Or try Omar Khayyam: "They say the lion and the lizard keep the courts where Jamshyd gloried and drank deep; and Bahram, that great hunter, the wild ass stomps o'er his head but cannot break his sleep." Or, finally, Shelley: "And on the pedestal these words appear: 'My name is Ozymandias, King of Kings; Look on my works, ye mighty, and despair'. Nothing beside remains. Round the decay of that colossal wreck, boundless and bare, the lone and level sands stretch far away."

THINK SMALL

THE EXPORT LESSONS TO BE LEARNED FROM GERMANY'S MIDSIZE COMPANIES



If you want to get a close look at Germany's export juggernaut, don't go any farther than the Glasbau Hahn factory on the outskirts of Frankfurt. Although it has only \$12 million in sales, Glasbau Hahn is the Mercedes-Benz of glass showcases. Its products are jammed with technology to protect the world's most valuable art objects—such as the bust of Queen Nefertiti at Berlin's Egyptian Museum. Top-drawer customers such as New York's Metro-

politan Museum of Art and London's British Museum eagerly fork out up to \$100,000 apiece for custom-built wall-size showcases from Hahn, complete with heat-free, fiber-optic lighting and precision climate control. "Museums always ask us to do the impossible," says CEO Till Hahn.

About 300,000 other small and mid-size companies such as Hahn—collectively dubbed the *Mittelstand*, meaning midranking—perform Mission Impossi-

ble on a daily basis. Although Daimler Benz and Siemens are best known abroad, it is these companies with fewer than 500 employees that produce two-thirds of Germany's gross national product, train 9 out of every 10 apprentices, and employ 4 out of every 5 workers. They make everything from the predictable motors and machine tools to such consumer goods as camping equipment and high-fashion garments. Some, such as Krones, a maker of bottle-pro-

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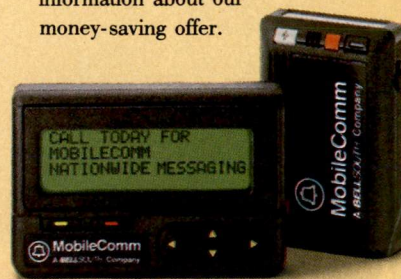


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cessing machines, have become major suppliers to U.S. industry. Says Klaus-Peter Müller, a board member of Frankfurt's Commerzbank: "Germany's post-war economic miracle is a *Mittelstand* miracle."

The *Mittelstand* are a major reason Germany is likely to fare well in the 1990s, despite the pain of reunification. They may even be a key to turning around the former East Germany. These companies are already powerful exporters, used to competing with Asia's and America's best. They know how to use innovation and applied research to overcome some of the world's highest labor costs and a strong currency that makes their exports more expensive.

BETTER MODEL. In the U.S., a small but growing number of executives and gurus think the *Mittelstand* provide a far more relevant model for American exporters than the Japanese trading companies and industrial groups often held up to business students as organizations to emulate.

That's because the U.S. has hundreds of thousands of small and midsize companies that, given the proper orientation and support, could become export powerhouses. "We've got this huge midsize sector, but it falls through the cracks," says management consultant Tom Peters, co-author of *In Search of Excellence*. "Before we leap overboard and say we require the Japanese model, let's look at the German model."

Unlike Japan's export leaders, the *Mittelstand* have collectively grown big by thinking small. They work out of small plants often located in towns you've never heard of, and they target small but highly profitable niches in global markets. Their bosses belie the cardboard-cutout image of German managers as narrow-minded corporate bureaucrats, scared to jeopardize their salaries by taking



■ The Zuleeg family's textiles compete successfully with low-cost Asian rivals

risks and unable to innovate. Pouring huge portions of their revenues into research and development, *Mittelstand* companies routinely beat the biggies to market with new products. One reason is that they are mostly run by owner-managers who have their families' wealth on the line. They are, says Bonn-based management consultant Wolfram Hatesaul, "the terriers of the German economy."

FREE SPIRITS. While a relative handful of U.S. companies accounts for the lion's share of exports, thousands of *Mit-*

telstand companies collectively generate 30% of German exports. To be sure, there are some who refrain from direct exports, choosing instead to give a helping hand to the big guys. Munich-based luxury-automobile manufacturer BMW, for instance, uses 1,000 suppliers. Daimler Benz's Mercedes-Benz auto and truck unit buys more than \$15 billion worth of supplies annually from 50,000 companies inside Germany. That is similar to the Japanese model in which smaller companies supply big exporters in their *keiretsu*, or industrial group. But in contrast with Japan, the vast majority of *Mittelstand* companies are fiercely independent.

The economic payoff from these companies is huge. At \$1.4 trillion, Germany's economy is less than a fourth the size of that of the U.S., and its work force of 34 million is dwarfed by America's 115 million. Yet year in and year out, Germany has vied with the U.S. to be top gun in the export battle. Now, with unification, it's pulling in front. Last year, Germany sold \$421 billion worth of exports, comfortably ahead of America's \$394 billion and Japan's \$286 billion. Those numbers show that dominating hundreds of small niche markets works well for Germany.

Part of the *Mittelstand's* success stems from the German business culture itself. Unlike their Yankee counterparts, *Mittelstand* chiefs aren't obsessed with quarterly earnings growth. Instead, they are devoted to quality,

HOW GERMANY'S EXPORT NETWORK DOES IT



SPOTTING THE DEAL

Embassies, banks, trade associations, and chambers of commerce in dozens of countries funnel details of potential export deals to companies back home via newsletters, data bases



DOING THE DEAL

Trade associations, export trading companies, and banks help with documentation, translation, legal, and shipping services. They also provide office space and secretarial help in far-flung markets



FINANCING THE DEAL

Specialized banks or *Mittelstand* departments of big banks provide export finance and arrange credit and political risk insurance through government-backed Hermes export credit agency

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profits, and family ownership. They place a major emphasis on training apprentices. In their terms, success means handing a healthy company on to the next generation, not making a fast buck selling off shares to the public once they take off.

But aside from culture, the Germans also have built an export infrastructure that greatly assists smaller companies (table, page 59). Part of it dates back to the banking and trading system established during the last century, but other aspects developed during the grim days

of the U.S. to create the same kind of support system for an American *Mittelstand*. The thinking is that with a bit of tinkering, U.S. entrepreneurs and policymakers could give rise to a growing core of small and midsize companies that would be competitive in global markets. Already, a coalition of businesses, universities, and local governments in the Pittsburgh area is trying to build an export machine based on the German experience. From Oregon's sawmills to New Jersey's electronics companies, the Americans are quietly

company in the industry with 65 employees, has 70% of the global market, up from 25% 10 years ago. Mayer-Potschak's infrared technology narrowed the variance in roasting temperatures from 5C to 1C—a precision edge that gave customers such as Ghirardelli Chocolate Co. and Hershey Foods Corp. added control over the taste of their chocolate. "Barth is really strong in roasting machines," admits a European competitor.

RICH WATERS. Another tried-and-true *Mittelstand* strategy is to be the big fish in small but rich ponds. Munich-based Panther, for example, and its high-tech equipment unit make state-of-the-art cameraman's chairs. They were the first to install a computer in the chairs used for filming movies—giving photographers the ability to program the chairs' movement. Panther equipment has already been used on a string of hits, including *Working Girl* and *Broadcast News*. The 5-year-old company now has 50% of the European market for such chairs and is battling to boost its 10% share in the U.S. "In 10 years, I'll be the world leader," says founder Erich Fitz, surveying his world map on which colored pins represent sales.

Mittelstand companies often take their ideas to market so fast that they don't bother

to patent them. For instance, Dortmund-based Geers moved the world's smallest hearing aid, which uses a microchip, from drawing board to retail shops in just nine months. The new model, which first appeared in 1986, now generates 30% of Geers's \$34 million in sales. Geers, which claims former President Ronald Reagan among its satisfied customers, is racing to fill new markets in the east, opening shops in Kiev, Prague, and Warsaw. By contrast, rival Siemens took nearly three years to get its micro hearing aid to market. "We don't need patents" with that kind of competition, says owner Volker J. Geers, also head of the ASU, the German Association of Entrepreneurs—a lobby for *Mittelstand* owner-managers.

Mittelstand companies couldn't cash



following World War II when Germany faced an export-or-die imperative. The result is a sort of "export CIA," peopled by diplomats, bankers, and trade-association officials, that helps spot, process, and finance export orders. German embassies aggressively promote exports, and industry associations, usually little more than lobbying groups in the U.S., pull out the stops to facilitate their members' sales overseas.

While experienced exporters soon come to rely on their own resources, the network gives neophytes a head start. "You don't have to pay—most of the information is free," says Andreas Mai, a German banker who helped the New York-New Jersey Port Authority's Xport trading company improve its export-promotion activities.

There is now an effort in some quar-

■ Museums around the world pay up to \$100,000 for Glausbau Hahn's showcases

seeking lessons from the German experience (page 64).

A key factor in the German companies' success is a willingness to pour big money into R&D. Take Karl Mayer-Potschak and his cocoa-bean-roasting machinery. When the 51-year-old chief executive risked \$1.8 million on complex new technology to boost the yields and fine-tune the temperature control of his machines during the 1980s, other makers were skeptical.

Now, his competitors are scrambling to catch up. Mayer-Potschak's Ludwigsburg-based G.W. Barth, the smallest

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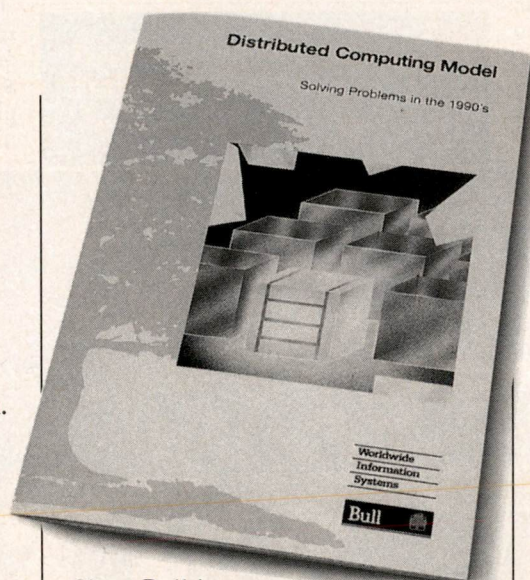
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in on their specialized products without investing big marks in flexible production lines. That makes short runs of such products economical. In 1983, when Heinz Greiffenberger took over ABM Baumüller, an ailing \$40 million maker of motors and gearboxes for cranes, he did away with standard products and focused on tailoring motors and gearboxes to customers' wishes. Revamping production, he installed \$20 million in highly automated machines. "I can switch production to a different product within seconds," boasts Greiffenberger. That strategy worked. Within one year of a \$6 million loss, he was in the black.

By steadily infusing manufacturing with high technology, Germany's little-known tigers are holding their own in surprising markets. Wilhelm Zuleeg, an \$18 million textile company, has no problem fighting low-cost Asian textile giants as well as high-end Italian and French rivals. In the middle of the Bavarian countryside, computer-controlled looms whirl, churning out high-fashion fabrics for some of the world's swankiest designers, including Cerruti, Anne Klein, and Georges Resch, with just 85 employees. "We have the most modern factory and no machine older than five years," says Stefan Zuleeg, who has built up exports from zero to 20% in three years.

In concert with hundreds of similar companies, Zuleeg has powered Germany to a surprise position as the world's No. 1 textile exporter, selling more than \$11 billion worth a year—a third more than Hong Kong. Indeed, Far East rivals show respect for the Germans. "They have very strong technology," explains Masanori Yamamoto, an international-affairs official at the Small & Medium Enterprise Agency of Japan's International Trade & Industry Ministry. "In Japan, we tend to use German machines where making good, precision products is important."

All these successes increase the *Mittelstand's* political weight at home, assuring plenty of gov-

ernment support. Small companies are eligible for up to \$6 million in cheap funding from the government-owned Kreditanstalt für Wiederaufbau. And the government reserves a fat slice of research funds for *Mittelstand* companies. Those with annual sales of less than \$590 million can get grants covering 40% of the costs of developing and implementing modern biotechnology-production methods. The growth in R&D outlays for companies with fewer than 1,000 employees is a stunning 21% a year. So it's no surprise that nearly two-thirds of German exports are technology-intensive.

Moreover, industry associations produce standard contracts translated into different languages and offer legal assistance in reading foreign contracts at

no charge to members. They also allow German companies to use their foreign offices when negotiating deals, especially in places where the infrastructure is poor, such as Moscow.

When a deal needs financing, companies can turn to a banking system sensitive to the needs of exporters rather than takeover artists. Deutsche Bank, for example, offered Barth's Mayer-Potschak use of an office and secretary while prospecting for business in Indonesia, Nigeria, and Russia.

EXTRA MILE. But the vast majority of *Mittelstand* CEOs argue it is their own efforts, not this infrastructure, that make the difference between success and failure. Consider the role of unions. *Mittelstand* companies seem to enjoy better labor relations than most foreign competitors. Under a costly social security and health system, employees shell out 18.4% of their annual wages up to \$45,900, a contribution matched by employers. But this helps German companies minimize confrontations with labor.

Only 30% of *Mittelstand* companies are unionized compared with the national average of 70%.

The *Mittelstand* work force is highly trained, thanks to apprenticeship programs. Training an apprentice costs \$18,000 a year for two to four years, roughly the same a year as an Ivy League education. Although trainees are not required to stay on after completion, many remain for life.

The lack of comparable training programs in the U.S. may account for the problems Germans say they encounter when trying to find suppliers for American operations. For instance, Hans Knürr, owner of a Munich-based electronics components company, spent two years scouring the U.S. for suppliers to his subsidiary there. In the end, he sent Bavarian punching, bending, and drilling machines to the U.S. facility. "Americans don't take the time and trouble to make a really good product because they want an immediate return," Knürr says. Now, he makes a profit selling components to customers

■ Putting a computer control in a cameraman's chair made Erich Fitz's company a global player



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such as NASA, Hughes Aircraft, and Texas Instruments.

The Germans are having to apply the same determination in eastern Germany. Not surprisingly, Bonn officials see rebuilding the *Mittelstand* there as the fastest way to turn around a collapsed socialist economy. The Treuhand privatization agency is helping former owners buy back companies that were na-

tionalized and run into the ground. Already, management buyouts total 500 out of 3,000 companies sold in the past year. Employment in small and midsize companies is up to 20% of the work force, from almost nil. In the east, "the *Mittelstand* companies already are the most successful ones," says Treuhand head Birgit Breuel. She is now racing to chop the former state *Kombinate*, or

conglomerates, into smaller, more competitive companies to be sold to their old managers.

With the collapse of the Soviet empire and the need to transform centrally planned economies to a market system, policymakers throughout Europe are watching Breuel's efforts closely. The *Mittelstand* were crucial in transforming Germany's war-ruined economy in

WHY JOHANN CAN EXPORT, BUT JOHNNY CAN'T

At a time when U.S. export growth is flagging, the problems that frustrated Ron Ekas speak volumes. So, too, do the proposed solutions.

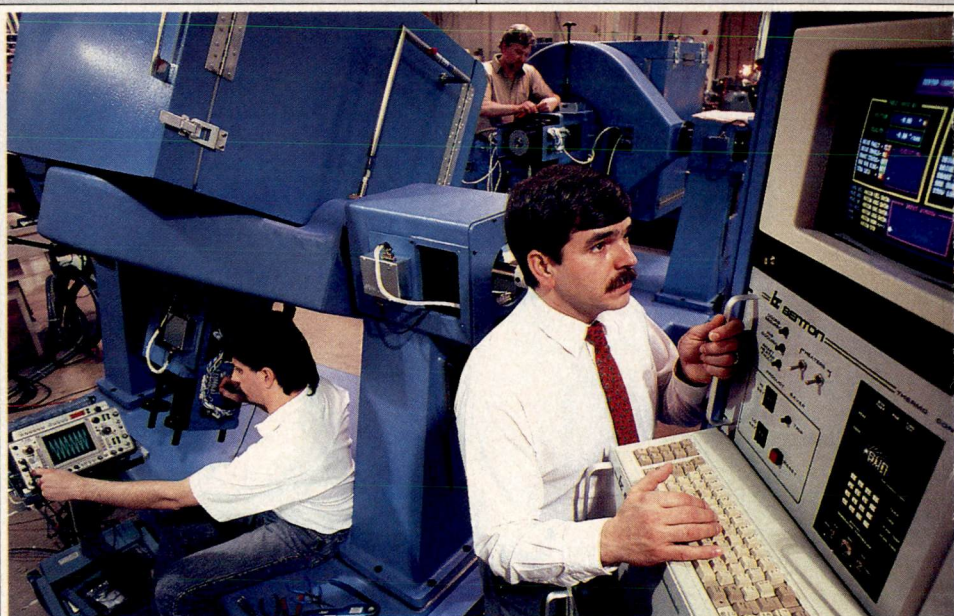
As the new international marketing manager for tiny Benton Corp. in Warrendale, Pa., Ekas sought help in discovering how to export the company's navigational testing devices. He got a list of foreign distributors from the Pittsburgh office of the U.S. Commerce Dept. But his quest for working capital took him in a circuitous route from Duquesne University to the Small Business Administration, from the Pennsylvania Commerce Dept. to the Export-Import Bank, and back again. "I got right in the middle of a big loop," Ekas says. "Everyone sent me other places to look for assistance."

Benton, with only \$4 million in sales, did eventually sell a \$1 million missile simulator to Australia. But the presence of dozens of competing yet poorly staffed agencies in the U.S. export "infrastructure" is a major factor holding back thousands of smaller U.S. companies such as Benton. To lure more such companies into the export game, a growing number of experts argue, the thicket of federal, state, and local agencies must be made more rational.

TURF WARS. That's why Germany's *Mittelstand* system is a model. While the central governments of Japan and France take much responsibility for trade, Germany's export growth, similar to America's, is spurred by coalitions of local and state agencies backed up by chambers of commerce, industry associations, universities, and similar organizations. With Washington keeping the U.S. Commerce Dept. and Small Business Administration on short leashes, local export "movements" sprang up in the late 1980s in the dozen or so states that account for the bulk of America's manufactured exports.

A key difference from Germany, however, is that American exporters compete

with one another for money while facing a morass of conflicting advice and buck-passing. Because the Germans started their export drive decades ago, they have had time to reduce the clutter. "They've eliminated the turf problems," says German-born Burkhard Holzner, director of the University of Pittsburgh's University



■ Despite buck-passing by government officials, Benton made a \$1 million sale

Center for International Studies. "Here, it is still a problem."

With Germany as a model, Pittsburgh's civic elders are trying to grease their export machinery. In December, 1990, more than 200 business, government, educational, and nonprofit organizations endorsed the Pittsburgh International Initiative, in large part to make the export support structure more user-friendly. "We're trying to sort out the competition," says John McCartney, who

heads the local U.S. Commerce Dept. office. Along with Holzner, he has been a sparkplug behind the initiative.

Nearly a year later, progress has been slow, but the end result could make a big difference. One accomplishment has been to pinpoint what role a World Trade Center can play. The World Trade Centers Assn. puts up major buildings in different cities where providers of export services, such as translators, can find office space.

But in U.S. cities such as Minneapolis-St. Paul, these trade centers have

sparred with state and other export agencies for political and financial support. That's bad news for confused would-be exporters. So when Allegheny County decided that it, too, wanted a trade center in Pittsburgh, it worked with the other members of the Pittsburgh International Initiative to eliminate overlap.

Pittsburgh figures that these midsize exporters could be the key to future growth. The city already has such giants as Westinghouse Electric, USX, Alcoa, H. J. Heinz, and PPG Industries. A second tier of Pittsburgh companies, including Black Box Corp., a \$100 million-a-year distributor of computer gear, and Mine Safety Appliances Co., is clicking in a big

the 1950s. Now, the Germans see them as a model for rescuing eastern Germany and indeed much of Eastern Europe from the economic wreckage of communism. Given the reluctance of Western European and U.S. governments to pour in massive amounts of foreign aid, there may be no other option.

By Gail E. Schares in Munich and John Templeman in Berlin, with Robert Neff in Tokyo and William J. Holstein and Stanley Reed in New York

way on exports. With \$474 million in sales, MSA makes gas masks, chemical suits, and similar equipment, a prime example of an American *Mittelstand* company. These niche market companies have built their international strategies from scratch, and new expansion is weighted toward faraway places.

That means smaller companies could be a major force in creating new jobs for Pittsburgh. Of course, a better export infrastructure won't help unless the companies also improve their own business culture. The depth of resistance is great: A survey sponsored by the U.S. Commerce Dept. found that many smaller companies do not have a basic knowledge of world markets, do not want to go on trade missions, and do not want to translate sales material into foreign languages—all basic requirements for successful exporters.

QUIET COMEBACK. Others are learning the same lessons. The state of Oregon commissioned a study of how German *Mittelstand* companies can be such successful exporters of wood-manufacturing equipment. The New Jersey unit of the American Electronics Assn. is trying to imitate German industry associations by providing its members with export help. And export-trading companies, widely discredited in the early 1980s, are making a quiet comeback. The single most successful such company is the Port Authority of New York & New Jersey's Xport unit, which says it has helped smaller companies rack up \$200 million in exports.

It's not likely that the American *Mittelstand* will ever become as well organized as Germany's. "The pieces of it are there, but there isn't a consensus about it," says James D. Thayer, president of Portland-based Overseas Strategic Services, which is conducting the Oregon study.

But even modest progress could have an impact on faltering U.S. export growth. "We're in the early days," says management consultant Tom Peters. "It's all part of a long-term transition" to a more globe-girdling economy. Now that the U.S. has reaped the full benefits of a cheap dollar, the tougher step of creating a more export-conscious manufacturing sector is just beginning. Digging out of hard times may depend on it.

By William J. Holstein in Pittsburgh



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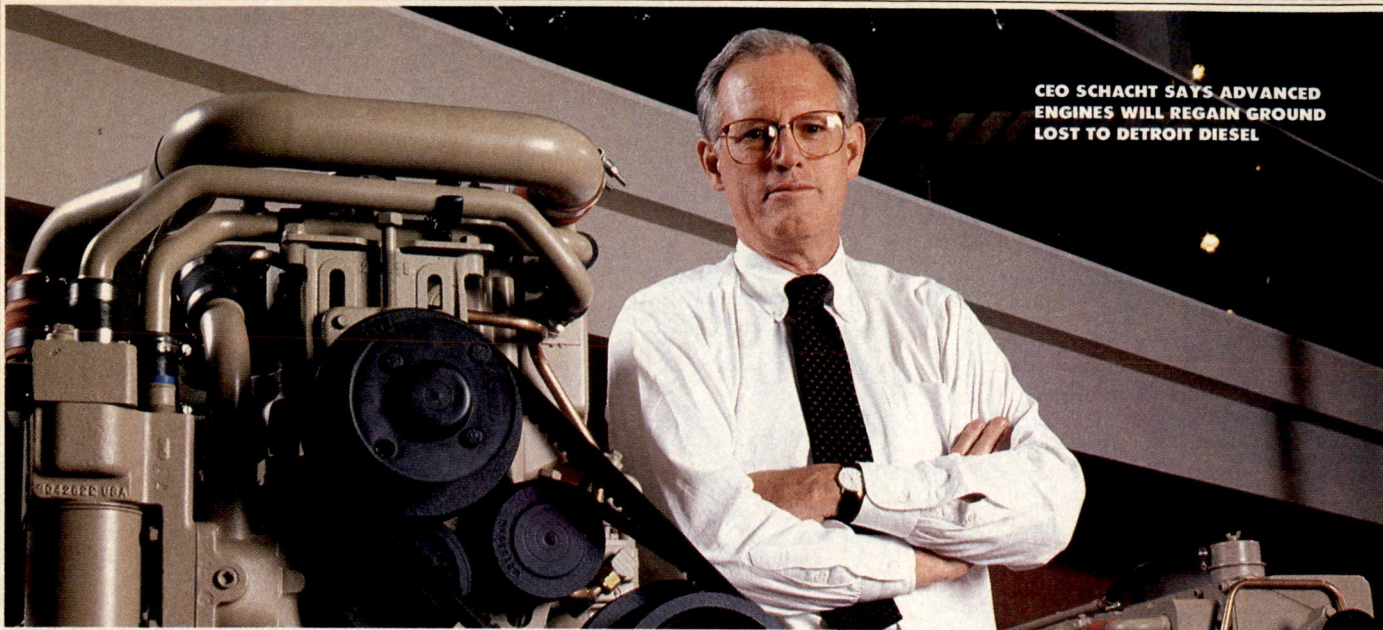
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CEO SCHACHT SAYS ADVANCED ENGINES WILL REGAIN GROUND LOST TO DETROIT DIESEL

DOES CUMMINS HAVE THE OOMPH TO CLIMB THIS HILL?

The truck-engine maker faces slack demand—and a strong foe

Henry B. Schacht won plenty of accolades in the mid-1980s for fending off a Japanese foray into the U.S. heavy-duty truck-engine market. When rivals such as Mitsubishi Corp. and Nissan Motor Co. threatened to win over U.S. customers, the Cummins Engine Co. CEO slashed prices by a resounding 30%. He then quickly embraced such Japanese techniques as just-in-time inventory management and flexible manufacturing systems. Although Cummins lost a truckload of cash—a total of \$207 million in net losses from 1988 to 1990—Schacht kept the Japanese from denting the company's commanding 50% market share.

Unfortunately, while Schacht was patrolling the borders, all was not well behind the lines. An important new launch of Cummins engines was a disappointment, the company was late to develop key products, and Cummins' trucking-industry customers went into the tank along with the economy. Then, there was a decidedly un-Japanese competitor known as Detroit Diesel Corp. The once-sputtering engine maker, formerly a unit of General Motors Corp., was being turbocharged under the leadership of auto-racing great Roger S. Penske.

Detroit Diesel has been leaving Cummins in the dust for more than two years now, thanks to its ground-break-

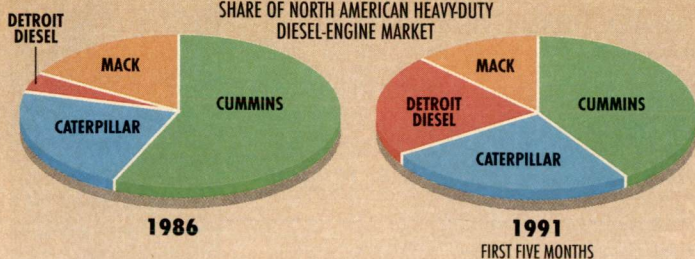
ing Series 60 electronically controlled diesel engine. Besides offering dramatically better fuel efficiency, it boasts nifty computerized features that diagnose mechanical problems and can monitor engine use—and thus track driver productivity. Detroit Diesel's market share has rocketed to roughly 22% this year, from 6.5% in 1989, while Cummins' share has slid precipitously, to 40% in 1991, from 50.3% two years ago.

ON THE ROAD. Schacht is responding to this latest jam with typical fervor. Cummins went into full production of its own line of electronic heavy-duty diesel engines in late 1990. And nowadays, you'll find the patrician 57-year-old Schacht, a Harvard MBA, out on the road pressing the flesh with truckers, something Penske has done for years. One Cummins customer, U.S. Xpress Enterprises Chairman Max Fuller, says he had never met Schacht until this year, despite a 15-year business relationship. Meanwhile, Cummins will soon announce a joint venture with Soviet truckmaker Kamaz to build engines.

Stateside, Schacht has cut overhead

CUMMINS IS CEDING GROUND TO RIVALS...

SHARE OF NORTH AMERICAN HEAVY-DUTY DIESEL-ENGINE MARKET



...AND LOSING A TRUCKLOAD OF MONEY

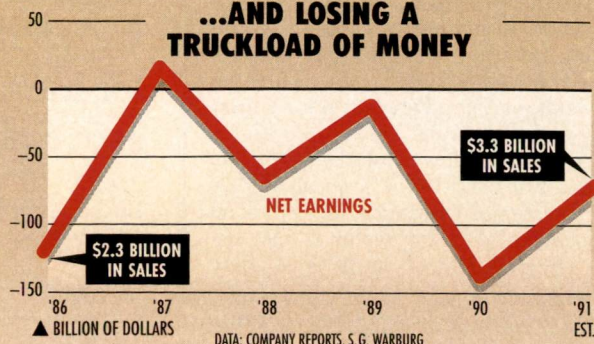


Exhibit I

Earnings, including compensation of officers, per dollar of assets for corporations with and without net income, by asset class, 1972

Asset class (in thousands of dollars)	Manufacturing	Services	Construction	Transportation	Wholesale and retail trade
Under \$25	\$.49	\$2.42	\$.85	\$.42	\$.49
\$25-\$49	.39	1.03	.53	.26	.34
\$50-\$99	.35	.53	.40	.26	.29
\$100-\$249	.28	.29	.30	.23	.24
\$250-\$499	.24	.19	.23	.18	.21
\$500-\$999	.22	.13	.19	.15	.20
\$1,000-\$2,499	.18	.11	.16	.13	.17
\$2,500-\$9,999	.16	.09	.13	.11	.15
\$10,000-\$24,999	.14	.09	.09	.10	.12
\$25,000-\$99,999	.12	.09	.08	.08	.12
\$100,000 and over	.10	.07	.05	.05	.09

Income = total receipts - (total deductions + interest + officers' compensation + charitable contributions)

Source: The Office of the Secretary of the Treasury and the Office of Tax Analysis, November 12, 1975.

Exhibit II

Cash flow of corporations, per dollar of assets, by asset class

Asset class (in thousands of dollars)	Manufacturing	Services	Construction	Transportation	Wholesale and retail trade
Under \$25	\$.58	\$2.44	\$.88	\$.45	\$.53
\$25-\$49	.48	1.05	.56	.29	.36
\$50-\$99	.44	.55	.43	.29	.31
\$100-\$249	.37	.31	.33	.26	.26
\$250-\$499	.33	.20	.25	.20	.23
\$500-\$999	.31	.15	.21	.17	.22
\$1,000-\$2,499	.21	.12	.18	.15	.19
\$2,500-\$9,999	.18	.10	.15	.13	.16
\$10,000-\$24,999	.16	.10	.11	.12	.13
\$25,000-\$99,999	.14	.10	.10	.10	.13
\$100,000 and over	.14	.08	.07	.07	.10

Source: The Office of the Secretary of the Treasury and the Federal Trade Commission.

ment rate on accounts receivable to obtain a cash payments schedule.

3. Estimate the total cash inflows by combining the cash sales, the accounts receivable payments schedule, and the projected sale of any business assets.

4. Test the reasonableness of the estimates by comparing the cash inflow with comparable standards for like companies in the same industry, such as the data from *Exhibit II* (which is on an annual basis) or other more specific trade association data on cash

flows within one's own industry. To use *Exhibit II*, multiply the appropriate number in the exhibit by the business's assets to get the cash flow.

5. Make a budget of all operating and capital expenditures with an estimate of the timing of payment to arrive at a cash outflow schedule.

6. Plan to pay fixed costs first (e.g., rent or interest), payrolls second, other operating expenses third, and capital items fourth to yield a priority schedule of cash outflows.

7. Pay officer compensation last, if there is a net balance of cash remaining after all outflows, but do not overdraw the projected cash balance.

8. If there is no cash balance, see an accountant and a banker about the possibilities of using float, accounts payable, or loans as temporary sources of cash inflow.

9. If credit is needed to meet the cash requirements temporarily, go through the exercises of steps 1 through 7 a second time to see if cash balances are likely to materialize in the future by either strengthening sales or paring costs. If not, the projection implies impending failure, and consideration should be given to early termination to conserve the assets for the owner as well as for the creditors.

The management discipline in this process, of course, lies essentially in steps 3 and 6 where all cash inflows and outflows are scheduled and compared. To make this comparison, the manager must have adequate financial records, budgets, and cash-flow statements.

The reason a cash-flow statement is so important to a small business is that it forces a second kind of discipline—that is, combining the net effect of operations on the balance sheet as well as on the income statement. Herbert N. Woodward has shown that one of the weaknesses of small business is undue concentration on the income statement, particularly an attempt to achieve growth for growth's sake while reducing fixed costs per unit and trying to optimize net income on the income statement (which is on an accrual, not a cash, accounting basis).⁴

The fallacy of such strategy is that there are relatively few true fixed expenses, except in the very short run. Therefore, to concentrate attention on them (by trying to reduce fixed costs per unit on an accrual accounting basis) can cause a manager to over-expand operations beyond the capacity of his cash resources.

Thus the cash-flow statement provides a check and discipline on the manager, because it shows him how

4. Herbert N. Woodward, "Management Strategies for Small Companies," HBR January-February 1976, p. 113.

the balance sheet items such as cash, inventory, accounts receivable, accounts payable, and capital expenditures are likely to be affected by operating decisions reflected in the income statement. That is, the cash-flow statement keeps operations (as reflected in both the balance sheet and the income statement) within the cash resources of the business.

In short, the cash-flow statement is perhaps the single most important control that the manager of an enterprise has, particularly for small companies, which are inclined to be short of cash.

Capital productivity

So far this discussion has treated profit estimates and cash-flow planning as though all or most of the expenditures were operating expenses; this is likely to be true, especially for the new companies in trade and services, where facilities requirements are relatively small and may often be rented. Even manufacturing organizations frequently start with low overhead in the owner's garage.

However, as an enterprise grows, particularly in manufacturing, capital equipment or buildings may be needed. Such capital expenditures should only be considered when the cash-flow statement indicates that the net cash balances are large enough either to buy the equipment outright or to pay the service costs on a loan to finance it. At that time, the entrepreneur or manager should have some historical standards by which to compare his own capital performance before making capital expenditures.

One such standard is to calculate the capital-output ratio of the capital investment—that is, to see how many dollars of new output (and sales) can be produced per dollar of investment input. The standard to be used might well be this: the capital budget item must be able to produce at least \$0.30 in new added output for every \$1.00 of new capital invested, and, after the addition, the net capital stock of the enterprise (i.e., all its capital assets less depreciation) should be able to produce at least \$0.80 in total output per \$1.00 of capital invested.

Exhibit III

Capital-output ratios of proprietary and corporate business, 1949-1975 (in constant 1972 dollars of sector income per dollar of net capital stock)

	Average capital-output ratios		Marginal capital-output ratios	
	Proprietary	Corporate	Proprietary	Corporate
1949-1953	1.34	.92	.37	1.05
1954-1960	1.12	.90	.30	.19
1961-1969	.92	.96	.40	.84
1970-1975	.75	.86	.01	.15

Source: U.S. Department of Commerce, Bureau of Economic Analysis.

The reason that marginal productivity of new capital investment is lower than the average historical standards of performance is that the new capital additions are usually not used to full capacity immediately on installation, but rather they provide some excess capacity. If the proposed capital item does not meet this test, its inclusion in a capital budget should be gravely questioned, because this standard is about the average performance of business investments throughout the economy in the recent past, as shown in Exhibit III.

In this exhibit, the average capital-output ratio, or average capital productivity, is the net output divided by the net capital stock. The marginal capital productivity is the net increase in output divided by the net increase in capital stock.

The indication is that the capital productivity of the United States has been falling gradually for the past three decades, for both proprietary and corporate business, and for both average and marginal capital productivity. These facts are cause for considerable concern because they indicate that the growth rate of the economy is falling and that the economy is in a state of diminishing returns on capital investment.

A variety of reasons may account for these diminishing returns on capital investment, such as (a) declining rates of technological advancement, (b) increasing marginal costs of new resources (e.g., deeper oil wells or less-concentrated mineral ores), (c) inflation of capital equipment prices, or (d) poorer management decisions regarding the company's capital budget expenditures.

Perhaps the entrepreneur or manager can do little about the first three items, other than encourage effective research in his own organization and encourage a more balanced fiscal policy on the part of the federal government. However, the manager can do something about the fourth item; he can make better capital budget decisions.

One criterion for better decision making in capital budgeting is that new expenditures must at least meet average historical standards in the economy for capital productivity. That is, a new investment should be able to produce at least \$0.30 per \$1.00 invested in marginal (net new) output and \$0.80 per \$1.00 invested in average output.

In the final analysis, better decisions are what management is all about. Improved decision making is especially vital when the standards and techniques are relatively simple to use and when the growth rate of the venture and the economy depends on it.

David E. Gumpert

Venture capital becoming more widely available

If the 1960s with its anything-goes investment activity was the venture capital industry's drunken spree, then the 1970s became an awful hangover. Increased capital gains taxes effectively deterred potential investors from making risky investments. The public market for new securities virtually disappeared, removing the most effective device for venture capital firms to cash in on successful investments and move on to new ones.

And those few venture capital firms with money to invest found that the sour economy through much of the early and mid-1970s discouraged probably the most crucial ingredient in the venture capital equation—the entrepreneurs; they more often than not decided to remain in secure jobs with large companies.

Painful changes resulted. Possibly as many as one-third of the venture capital firms in existence at the end of the 1960s failed to survive the first half of this decade. Most of those that did became particularly unventure-some. Some turned totally inward to concentrate all their energy and available funds on existing investments. Others swore off start-up and early-

stage investments and instead put their money into safer situations such as relatively large, well-established, profitable companies, sometimes even buying stock on public markets.

Today, though, there are signs that the venture capital industry's gigantic headache is getting better. Not that the industry is about to revert to the free-wheeling style of the 1960s, but substantial amounts of new capital have recently become available to venture capital businesses, and signs point to increasing amounts of cash becoming available in the near future.

Equally important, there is renewed interest in start-up and early-stage companies to go along with the industry's continuing enthusiasm for more mature companies.

All of which has important implications for potential entrepreneurs and owners of fast-growing small businesses. In light of an expected overall capital shortage in future years that will especially hamper smaller businesses, the new sources available from the venture industry could be of crucial importance. No one is suggesting that such capital will satisfy all demand, but for entrepreneurs who decide to pursue it with an understanding of the changes that have occurred in the venture capital area, there could be substantial opportunities.

The suddenly revived venture capital industry—which consists of nearly 600 partnerships, corporate subsidiaries, small business investment companies (SBICs), and wealthy individuals—invested nearly \$500 million during 1978, compared with from \$350 million to \$400 million in 1977 and \$300 million in 1976, estimates Stanley Pratt, the publisher of *Venture Capital*.

The industry is benefiting partly from improved new issues and merger markets, which are enabling venture capital firms to roll over older investments and to free up funds for new investments. For instance, new public offerings by companies with less than \$5 million net worth raised between \$175 million and \$200 million last year versus \$118 million in 1977 and \$145 million in 1976, according to Pratt.

In addition, a relatively buoyant economy encouraged commitment of new funds from various sources. Citicorp Venture Capital Ltd., the venture arm of Citicorp, recently announced availability of \$100 million to be invested over five years. American Research & Development Corporation (AR&D), the venture capital subsidiary of Textron Inc., expects to be investing from \$10 million to \$20 million or more annually during the next few years after several years of relative inactivity. T.A. Associates of Boston raised \$15 million of new funds in 1978 from various investors. And a group of Massachusetts insurance companies last year established Massachusetts Capital Resource Corporation to invest \$100 million over five years exclusively in small Massachusetts companies.

All told, about \$500 million of new money was committed to the venture industry in 1978 versus only about \$20 million in the prior year, estimates Pratt.

Moreover, several recent developments suggest to those who monitor the venture capital industry that increasing amounts of new money will become available in the near future. Among the changes are:

□ The capital gains tax reduction. The venture capital industry has been clamoring long and hard for a reversal of the capital gains tax increases instituted in 1969 and 1976 as the single most effective way to pump new money into venture markets. The reduction in capital gains taxes in the fall of 1978 to a top rate of 28% from a top rate of 49% was less than the venture capital industry would have preferred, but it is expected that any reduction will encourage more investments in high-risk situations.

□ The liberalization of SEC Rule 144. In September 1978, the SEC essentially doubled the amount of unregistered stock private investors could sell in public markets. Now, in most circumstances, up to 1% of a company's capitalization can be sold every three months instead of 1% or less every six months, as under previous rules. The change is expected to help venture capital companies more quickly recycle funds out of old investments and into new ones.

□ The lifting of the public offering ceiling under SEC Regulation A, which provides for exemption from registration under the 1933 Securities Act. The regulation allows a simplified registration procedure to companies seeking to raise relatively small sums of public money. During 1978, Congress raised the maximum offering under the regulation from \$0.5 million to \$2 million, which is expected to be of primary benefit to smaller companies seeking to raise capital and thus could aid venture capital firms in rolling over chunks of their investments.

□ A revision of the "prudent man" rule of the Employment Retirement Income Security Act of 1974 (ERISA). ERISA has been widely interpreted to bar pension funds from investment in speculative securities. However, the U.S. Department of Labor recently adopted regulations that would allow such investments as long as they do not endanger an entire portfolio, and, according to *Forbes*, some institutions have begun buying stocks of small and medium-sized companies.¹

Pension fund lawyers would like Congress to back the regulations with legislation before allowing riskier investments. Congressional proposals have been made to allow between 2% and 5% of pension fund portfolio assets to be invested in smaller, riskier companies; the proposals were bottled up in the last session, but one could be passed this year.

Where will the new venture capital funds be directed? Based on funds that have been invested over the past couple of years and plans for the recent commitments, it appears that new investments will go into a wide variety of situations ranging from start-ups to well-established concerns with as much as \$250 million volume. The wide range of investments contemplated suggests to some observers that perhaps the venture capital industry has become misnamed and its participants should really be known as "development capitalists."

New ventures gain support

Nonetheless, probably the most startling aspect of the changed venture

situation is the renewed interest in start-ups and early-stage businesses. For example, a dozen of California's largest venture capital firms invested more than \$50 million of funds in new or ongoing ventures during the year ending September 30, 1978; during the same period in 1976, the same firms invested only \$18 million and none went to start-ups, according to David Arscott, a San Francisco venture capital firm principal, who monitored the California firms.

Similarly, the dozen or so sizable venture capital firms in the Boston area were not doing any start-ups a year ago, and now practically all are involving themselves in start-ups, according to C. Kevin Landry, a vice president of T.A. Associates. Among the recent commitments involving several Boston area venture capital firms is \$3.7 million to a start-up computer company in southern New Hampshire.

Some venture capital firms contend they cannot find enough suitable start-ups and early-stage investments to use all the potential funds available. Citicorp Venture Capital invested \$10 million last year in a variety of situations, including start-ups and early-stage companies, and might have invested from \$15 million to \$20 million "if the opportunities were there," according to Russell L. Carson, chairman.

T.A. Associates has enlarged its staff of investment evaluators from four to seven to search out new investments, and an official worries that, based on proposals he has seen, the firm will have difficulty generating enough promising new situations to use its \$15 million of funds in three years.

In a few cases, the new zeal has meant competition for deals. Officials of General Electric Co.'s venture capital subsidiary, Business Development Services Inc., complain that they recently were outbid for a couple of early-stage investments.

Thus some young small businesses have discovered themselves in the enviable position of being able to choose among several venture capital firms. Infotecs Inc., a tiny two-and-a-half-year-old Manchester, New Hampshire maker of small business computer systems, found itself the darling of

three different venture groups early last year when it sought funds to finance its rapid expansion. Infotecs first approached First Capital Corporation, the venture capital subsidiary of First National Boston Corporation, the bank holding company, because Infotecs had previously dealt with First National Bank of Boston.

At about the same time, however, two other venture capital firms approached Infotecs separately to inquire about investing in the company. Infotecs ultimately chose First Capital, primarily because it offered the best terms—a loan with an option to buy a minority position of the company within a few years; one of the competing venture firms was seeking a majority of Infotecs's stock.

Also at this time, many venture capital firms are continuing the trend started a few years ago of investing in ongoing and established concerns. Such investments take the form of leveraged buy-outs, issuance of convertible debentures, and various other combination debt-equity packages.

AR&D, the granddaddy of venture capital firms, which is best known for its backing of Digital Equipment Corporation as a start-up in the 1950s, is currently scouting out leveraged buy-outs, public companies, and other established investments. AR&D is quick to note that it is still also interested in start-ups and early-stage ventures.

And Citicorp Venture Capital's new \$100 million investment commitment is intended almost exclusively for companies with volume from \$25 million to \$250 million. (The new commitment is in addition to the \$10 million the firm invested in 1978 in more traditional venture situations.)

To long-established smaller companies, such efforts by venture capital firms is good and sometimes unexpected news. When Emmons Industries Inc., a York, Pennsylvania builder and renter of freight cars, which has been public since 1959 and has \$28 million of assets, was seeking to raise money early last year, it obtained \$5 million from a group of venture capital firms, which received dividend-paying convertible preferred stock.

1. *Forbes*, October 2, 1978.

"We never anticipated going to venture capital companies," says Robert Grossman, Emmons's president. "We thought we were too mature." The marriage occurred because Emmons's investment banker urged the company to explore venture sources in light of expected difficulties in raising public money.

Obstacles remain

There is a less pleasant side to the venture capital story, however. Though more money is available through venture capital firms, that money must be spread much more thinly than venture capital of the 1950s and 1960s, thanks to demands for venture capital from mature small companies that once could go public or, if already public, could make additional new offerings much easier than today.

Even though the public market is brightening some, it still has quite a way to go before it even vaguely approaches the glory days of the late 1960s. That is made clear in government statistics, which show that 80 companies with less than \$5 million in assets raised \$415 million via public offerings during the four-year period of 1974 to 1977; in 1969 alone, 548 such companies raised nearly \$1.5 billion.

One outgrowth of the dampened public market is that venture capital firms must hold onto their investments in successful start-ups longer than ever before. Whereas in the 1960s companies with from \$3 million to \$5 million in sales went public, today companies attempting to go public must typically have \$20 million or more in sales.

A number of factors could inhibit a resurgence of small company public offerings. For one thing, the interest of individual investors, who have been important supporters of small company investments, has declined markedly; currently about 25 million people own equities versus an all-time high of 32.5 million in 1972. Moreover, the recent consolidation of brokerage firms has eliminated many small regional firms that have traditionally been most supportive of young, growing firms' efforts to go public.

The entrepreneur faces a rocky road in other respects. Though venture capital is more widely available than it has been in recent years, it is still extremely difficult to obtain for most entrepreneurs and young companies. For one thing, not all venture capital firms have yet escaped the early-1970s doldrums. One of the nation's largest venture capital operations, Heizer Corporation, with \$81 million invested, is so preoccupied nurturing its existing investments that it still is not making any new investments.

Also, the weeding-out process that took place among venture capital firms in the early 1970s eliminated the least experienced firms and left survivors who are more selective than ever. Venture firms investing in start-ups and early-stage companies are extremely discriminating; Citicorp, for example, figures it comes in contact with 1,000 potential start-ups and early-stage investments annually, investigates 100, and then actually commits itself financially to between 5 and 10. And those statistics reflect greater interest by Citicorp in such investments than three years ago.

Probably the most difficult task in assessing the changing venture capital situation is judging the extent to which potential entrepreneurs are seeking to form new companies. Venture capital firms complain that they are not seeing enough promising new ventures, but to some extent that is a chronic complaint. Nonetheless, there seems little doubt that the long string of reports lamenting the dearth of venture capital has discouraged potential entrepreneurs from leaving the womb of safe corporate jobs for the uncertain world of entrepreneurship. Conversely, venture capitalists expect that as word gets around about the new availability of funds, more entrepreneurs will seek funds.

Entrepreneurial guidelines

What does the changing venture capital situation mean for the entrepreneur contemplating tapping venture capital sources? Venture capitalists offer the following guidelines and advice to entrepreneurs and potential entrepreneurs:

□ Entrepreneurs should try to find venture capital firms that suit their special needs. As always, SBICs tend to favor safer, more cautious investments than private venture capital firms. But because venture capital firms are currently involved in a wider variety of investments covering a larger range of company sizes than during the 1960s, many firms tend to be particularly interested in only certain situations; for instance, some still concentrate on start-ups and early-stage investments, but others have shifted and now emphasize more mature companies and leveraged buy-outs. Thus it is important for entrepreneurs to find the most appropriate firms and not waste time with others.

A starting point in the search is a directory known as *Guide to Venture Capital Sources*.² This book lists nearly 600 venture capital sources specifying whom to contact and the type of investment preferred by each. It also includes about 30 articles by various experts providing information on raising and using venture capital and guidance for going public, as well as a bibliography to other venture capital publications.

□ For the start-up concern, proven managerial talent seems crucial to winning backing. Because venture capitalists still view start-ups with extreme caution, entrepreneurs without a track record of previous start-up success can almost forget about obtaining seed money. They must get their company going with other capital sources and show solid evidence of potential success, preferably a profit, before they can expect to obtain venture capital.

The previously cited start-up New Hampshire computer company that raised \$3.7 million of venture capital is headed by an entrepreneur who successfully started other companies. And Infotecs, which was able to choose from three venture capital groups, has shown impressive profits.

□ Once venture capitalist interest has been won, expect some leeway in

2. *Guide to Venture Capital Sources*, ed. Stanley M. Rubel (Wellesley Hills, Mass.: Capital Publishing Corp., 1977). [Another source of publications useful to entrepreneurs is Arlyne A. Jackson, "For the Manager's Bookshelf," HBR September-October 1977, p. 182.]

terms. In recent years, venture capital firms have ordinarily been obtaining 70% ownership of start-ups versus the 30% ownership typical of the late 1960s. However, with more money and competition for attractive ventures, terms have begun to ease some.

□ Take great care in choosing a venture capital backer, considering other things besides financial terms, because entrepreneurs and venture capitalists are involved together for lengthy periods; thanks to unreceptive public markets, venture capital firms must hold onto their investments typically twice as long as in the 1960s before they can be taken public. Therefore, it helps for entrepreneurs to be involved with venture capitalists who can offer management guidance and possible additional financing as small company investments reach growth milestones.

For more mature smaller businesses, the simple knowledge that venture capital is available to them can be a crucial revelation. Indeed, such businesses are likely to find venture capital more readily available to them than it is to young up-starts. Terms are likely to be more flexible too.

Venture capital firms are increasingly seeking investments yielding immediate income, so combination debt-equity packages can frequently be negotiated. But the established companies, accustomed to having more capital source choices, will inevitably find themselves wrestling harder than up-starts over the prospect of giving up large chunks of equity interest in their companies.

Like start-up companies, established small businesses are also advised to search long and hard for the right venture capital source. That is partly because debt-equity packages can come in more forms than straight equity deals and because mature companies, being in greater demand by venture capital firms, can expect more negotiating leeway.

Also, different types of small companies require different venture capital sources. A fast-growing \$10 million to \$15 million volume computer or medical instruments company with hopes of eventually going public should not seek out a small SBIC. But a profitable, slower-growing company with no pub-

lic issue aspirations and consequently smaller capital requirements might do best with a small SBIC.

The rules promise to change even more because increasing amounts of venture capital seem likely to become available. The effective doubling of the capital gains tax between 1969 and 1976 was cited by nearly every witness in May 1978 hearings before the Senate's Select Committee on Small Business as the most serious obstacle to availability of venture capital; thus the easing of the capital gains burden will undoubtedly generate new money.

And a further change in the ERISA prudent man provision could have huge ramifications, since pension fund investments total an estimated \$200 billion; even 2% to 5% of that amount becoming available for smaller company investment would be quite significant.

The end result would be much more investment activity. Start-ups could become more widespread as qualified entrepreneurs go out looking for backing and venture capital firms become more daring. The public issues market could improve enough to allow venture capital firms to cash in on many of their long-standing investments and have added funds for new investments; also, established small companies could more easily go public, giving them an alternative capital source.

The implications of such developments would, of course, be immense. The opening of new capital sources to mature, profitable small companies would slowly remove them from the venture capital marketplace, forcing venture capital firms to concentrate more fully on promising start-up and early-stage companies. That could mean a step-up in the pace of technological progress and innovation which could aid this country's capacity in such areas as energy, international competition, and employment.

However, it is still a long way back to the happy investment days of the 1960s.

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Performance measures for small businesses

Stahrl W. Edmunds

Venture capital becoming more widely available

David E. Gumpert

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Growing Concerns

Edited by David E. Gumpert

Topics of particular interest to owners and managers of smaller businesses

In this issue, HBR introduces a feature intended to inform and guide owners and managers of smaller businesses. "Growing Concerns" will include articles exploring the ramifications of legislative and regulatory developments, rationale for making wise accounting, computer, and management succession decisions, and research on entrepreneurship and other areas. The column may also include articles directed to managers of nonprofit and government organizations as well as interviews with business and government leaders with special experience or influence on smaller businesses. This issue's feature offers two selections—one by Stahrl W. Edmunds explaining how the early detection of venture success or failure can be improved by measures of profitability, cash flow, and capital productivity, and the other by this column's editor documenting the increased availability of venture capital and offering guidelines to entrepreneurs seeking such capital.

Mr. Edmunds is dean of the Graduate School of Administration and professor of administration, University of California, Riverside. He is also director of the Dry Lands Research Institute, University of California, Riverside.

Stahrl W. Edmunds

Performance measures for small businesses

Large and small businesses have at least one thing in common. That is, both types of enterprises start small and must master successful venturing to survive and grow. Large businesses may do their venturing in the form of new product lines or new venture subsidiaries. Small businesses are usually entrepreneurial ventures by reason of their owner's purposes. Small companies have trouble surviving, and their failure rates are high. Large corporations have been singularly unsuccessful in starting new ventures, because the requirements of venturing differ markedly from the more highly structured regime of a large ongoing corporation.¹

Therefore executives of large and small businesses alike have a common interest in devising some simplified schematic for planning and decision making that will help improve the probability of venturing success, or at least give an early indication of the probable lack of success.

Small as well as large businesses need benchmark planning data if they are to develop operating plans and policies that are effective in controlling performance of their enterprises. The literature suggests that small ventures have more difficulty in planning than do larger enterprises. The smaller the venture, the less time and staff available to search for planning data. Part of this difficulty may be due to lack of managerial skill or experience. Part of the planning problem, too, may be the greater difficulty of finding appropriate statistics by which small ventures can measure their performance, because small businesses are numerous and diverse, and the data base on the U.S. small business universe is poorly defined.

Statistical measures of planning performance can present insurmountable obstacles for small businesses. Data must be locally available or easily at hand to be usable in a simplified planning exercise. The following discussion attempts to provide some rough target data that may be useful for decision purposes, together with a simplified planning framework for their use.

The most comprehensive data on the business universe, including small business, are found in the tax returns of the Internal Revenue Service, the industry statistics of the U.S. Depart-

1. See, for example, Mack Hanan, "Venturing Corporations—Think Small to Stay Strong," HBR May-June 1976, p. 139.

ment of Commerce, and the credit data of Dun & Bradstreet, Inc. However, these data sets are frequently not current, reconciled, or tabulated in a form that reveals size, industry class, or performance characteristics; indeed, the special tabulation costs of the huge data bases are very high.

Fortunately, former Secretary of the Treasury William E. Simon had a special tabulation made in 1975 for his testimony to the Select Committee on Small Business of the U.S. Senate, which provides the basis for estimating several performance targets for businesses of all sizes.² This tabulation, together with interpolative data from the Commerce Department and the Federal Trade Commission, can be used effectively as the basis for rough estimates of *profitability*, *cash flow*, and *capital productivity*. Taken together, the use of these measures—whether these performance targets are exactly appropriate or not—imposes a tight planning discipline on managers of small ventures that forces them away from failure and toward at least average historical standards of performance.

Profitability estimates

One measure of profitability is the amount of net earnings per dollar of assets employed in the business, which is the special tabulation Simon presented to the Select Committee on Small Business. Corporate earnings per dollar of assets were compiled by both industry class and size and included and excluded executive compensation.

Excluding officer compensation, the earnings per dollar of assets were somewhat lower for businesses having under \$100,000 in assets than for larger enterprises. Including officer compensation, shown in *Exhibit I*, the earnings per dollar of assets are seen to be higher for smaller business ven-

tures of every size and of every industry class.

The earnings including officer compensation provide the most comparable data across size classes, because of differences in effective tax rates. The statutory income tax rate is lower for small companies than for larger ones; yet the effective tax rate is consistently higher for small businesses—averaging 50% for those under \$25 million in assets but only 35% for those over \$1 billion in assets.

That is, the corporate income tax is regressive and declines with company size. Under these circumstances, a rational small business executive would withdraw earnings as personal income from his enterprise at least until his personal tax rate exceeded 51%. Of course, in small businesses, these withdrawals could constitute a large part of total earnings; hence the earnings per dollar of assets including officer compensation provide the most comparable data across size classes.

Exhibit I presents two significant sets of fact: the first concerns profit planning targets and the second, relative efficiency. For *profit planning*, a small business manager can use the data in this exhibit to set minimum profit goals for himself, on the assumption that if his enterprise cannot match the average earnings per dollar of assets for others in its industry class and size, then the funds might be better invested elsewhere. Consider:

A venture with assets of \$25,000 to \$50,000 should be able to set planning targets for earnings (including officer compensation) of \$1.03 per \$1.00 of assets in a service industry, \$0.53 per \$1.00 in construction, and \$0.34 per \$1.00 in wholesale or retail trade. Those figures represent averages, of course, plus or minus what other deviations the manager may be able to ascertain regarding his own two- or three-digit standard industrial classification. Such deviations may be obtainable from comparative statistics within trade associations.

Similarly, a large corporation in manufacturing or retailing with assets from \$25 million to \$100 million could expect to set a profit target of \$0.12 per \$1.00 of assets.

For *relative efficiency*, this exhibit clearly shows that smaller companies

have higher earnings in every industry group and size class. The smaller the company, the higher the earnings. That is, earnings are inversely related to size.

The data shown in *Exhibit I*, far from demonstrating economies in scale, suggest that there are large diseconomies of organizational scale. The small companies (under \$250,000 in assets) consistently show earnings rates from two to five (or more) times the largest corporations' (\$100 million and over in assets). Such findings bely the common presumption that small businesses suffer from management inadequacies. Indeed, the management of smaller companies, by this performance standard, is superior to that of the large ones.

Cash-flow planning

Exhibit I also makes it possible to approximate some rough estimates of cash flow by industry group and size class. This may be done by using the **Federal Trade Commission data on depreciation allowances by asset size and adding them back to earnings to obtain the average cash flow.**³ This cash flow by industry and size class is a useful planning target and tool, particularly since cash-flow planning is one of the more difficult and vulnerable areas in small business management. *Exhibit II* shows the average cash-flow estimates by size and industry class.

The advantage of cash-flow planning to businessmen, whether in large or small enterprises, is that it imposes the discipline of a cash budget, which is essential to survival. Because records, budgets, and cash flow closely interlink, it is scarcely possible to solve the cash-flow problem without dealing with the adequacy of financial records and budgets as well. Yet the techniques for cash-flow planning are relatively simple, and they may be summarized in the following nine steps:

1. Make a sales projection based on historical experience by week or month, broken down by cash and credit sales.

2. Analyze accounts receivable by adding projected credit sales weekly (or monthly) and subtracting the pay-

2. U.S. Senate Select Committee on Small Business, *The Role of Small Business in the Economy—Tax and Financial Problems*, 94th Congress: 1st Session (Washington, D.C.: Superintendent of Documents, November 21, 1975), p. 19.

3. U.S. Federal Trade Commission, *Quarterly Financial Report*, 4th Quarter (Washington, D.C., 1975).

Disec. of scale.

Tom Martinsek says.

Compounding of error in large org-n. Like whispering to neighbor around circle, getting garbled message at end. Suppose 2% error, const. In genl, $e\%$. Let n be no. of xmens. Then $1-e$ is % of truth. And $(1-e)^n$ is % of truth after n xmens. Then % of error is $1-(1-e)^n$. (Note that this makes absolute error get smaller as go along. Wd probly get larger).

Figure cost of communication



Let l be no. of stages levels.

" s " " subdivisions in ea. stage.

" c be cost of communication, const.

$c(s)^l$
 ~~$c(s)^n$~~ is cost total?

Then add something for Δ_j cost

Big lumber mill, can only handle highest grade, i.e. easiest to work (tho not nec. best for consumer) logs. Wastes much, i.e. underuses land.

Requires large area to feed it, & must hold trees too long, others too short, all adjust to mill.

Big mill is stationary, all must move to it.

Lasts long time, inflexible.

Linear city is least effic., but
if all must move thru one
point, least eff. of all - no-
dimensional. Hierarchies are
+ his.

Ec. of scale.

How can moonshiners
make whiskey on very
small scale, sell cheap.

Yet legal stills band
into immense firms -

Schenleys, Nat. Distillers

Why no bootleg
cigarettes?

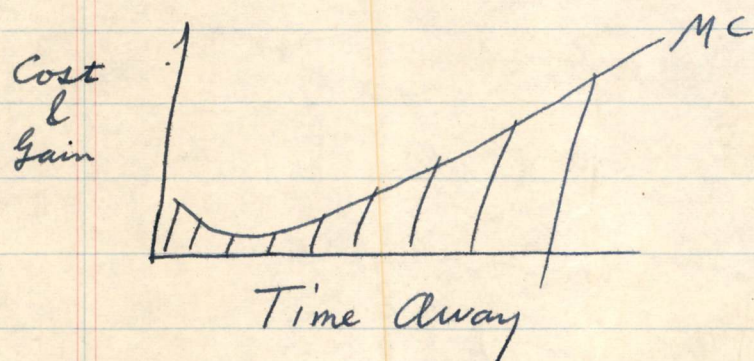
The things gov't does (or
should do) probly can be
handled easier on large scale
than on ordinary production.

Blanket judgements, on
simple criteria - e.g. color -
do not treat individuals as such,
hence miss much of value. Individ
humans, individ. situations of all
kinds. But that is what
top exec. must do.

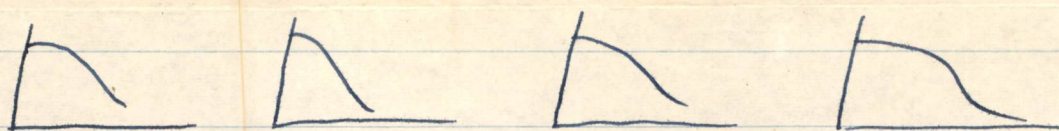
Diser. of scale. A sort of
indivisibility - the top decision
is on a few simple bases, such as
no negroes get credit, or all Mex. higher
ins. rate. Lose many good risks, &
take many bad ones.

Big lumber mill w. much land,
only takes best trees, so culls
are left for reseedling.

~~Harlan Browning~~



$\frac{MC}{TC}$ may keep getting smaller



This contradiction betw. % Longt reasoning may explain some anomalies. In large dealings, $\frac{MC}{TC}$ becomes small, is probly tendency ~~not~~ to figure very closely on MC. — (which may take form of under as well as over expensing)

Here is discc of ~~state~~ — not just for time, but much of any input

But also w. time: Long period calculations apt to be less certain than short

As soon as become
master of craft, move
into admin. in big
firm.

Disec. of scale, distrib.

Turn on hot water, lose
much in pipes. Line losses
greater when must be
just a little supplied
off & on.

Large
not
more
efficient

{ Dewing, 'Financial Policy of Corps'
IV, 224 ff.

" QJE, 'A Stat. Test of the Success of Consolidations'

Opt. size: fluctuating prices encourage smaller units, as they are more flexible, shifting between types of production. Hence price fixing by govt. increases opt. size.

On other hand, stability may make for more specialization, larger market.

& who says larger outfits are always less flexible or more specialized?

Was in depression that Morgan picked up rivals, & Rockefellers.