Regulate Yourself to Greatness…
and other quaint ideas[1]

by

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Introduction. The digital revolution is changing everything about the way we live, work, play, learn and move about. With innovations like electronic city halls, electronic town meetings, and portals for government service and citizen feedback, the digital revolution is even changing the way we govern.[3]

Yet, unfortunately for Australia's future, most of the public dialogue about telecommunications in this country is about regulations. Unfortunately, we are not talking about what the deployment of advanced telecommunications could do for

- increasing productivity,
- increasing GDP and the wealth of all people and communities with stronger economic growth
- expanding jobs

Or, more specifically,

- improving competitiveness for all of Australia's small and mid-sized enterprises,
- creating new hope for regional, rural and remote communities,
- giving kids in isolated schools 6 megabits rather than 19.6 kilobits to download their distance learning lessons
- giving families with kids in boarding schools the opportunity to use voice over the Internet – called VoIP – providing easier and cheaper ways to stay connected, and

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[1] Paper prepared as background for an address to the annual dinner of the Committee for Economic Development Australia (CEDA) in Sydney on 1 December 2005.

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[3] See the pages of *Government Technology* magazine for a good overview of the many innovations in using the Internet by federal, state and local governments in the US.

- bringing health care benefits to everyone, no matter where they live, through telemedicine.

I spent nearly all of yesterday and today preparing for and then participating in a Workshop on Regulation – when, instead, we should be stimulating public dialogue about how the benefits of advanced telecommunications can be delivered to people, business enterprises and communities throughout Australia.

I do not want to spend this evening addressing the same, worn-out issues, but I don't want to disappoint you by not serving up red meat to intensify the regulatory debate.

So let me try another menu that includes a vision that I hope will cause you to care more about the substance of the regulatory debate[4] – because if we don't get the regulatory settings right, then the great potential of these new digital technologies for Australia – and its 8.2 million households, 400,000 small and mid-sized enterprises, and thousands of communities – will be lost, or at least plagued by long, unnecessary, and costly delays.

Technology and society. Let's begin by stepping back from the on-going battles and look at the role of technology in society. New technologies typically have impacts and consequences that were never anticipated by their inventors and pioneer users.

Consider the **railroad**. The **application of technologies** that were integrated into what we call the railroad, started in the US in 1828 and included things like trackage, rolling stock, steam engines and other inventions.

The invention of the railroad led to many **related innovations** – including the Pullman sleeping car, Westinghouse air brake, electronic signaling systems, remote electronic switching and standardized rail separations that permitted the inter-connection of passenger and freight cars from one railroad to another.

But the real economic, social and cultural **importance of the railroad extended way beyond improvements that were made in the technologies and practice of moving rail cars over fixed trackage.** The impact of the railroad was huge and had enormous spillover effects. For example,

- The railroad clearly had a **major economic impacts**, especially on the economies of large, continental countries such as the US, Russia, Canada, Australia and others by **reducing the costs of transportation and increasing the speed to**

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[4] An increasing number of Australian business leaders and business organizations are speaking out on the issue of onerous regulation. For a recent example, see a new report by the Australian Chamber of Commerce and Industry (ACCI) estimating that regulation costs the Australian economy approximately $86.0 billion per year or 10.2 per cent of GDP. Amongst the biggest losers from anti-business regulation are consumers who are inevitably forced to pay higher prices as compliance costs get passed through to end products and services. See ACCI's position paper *Holding Back the Red Tape Avalanche (November 2005)*, which outlines a plan to reduce the impact of the escalating volume of anti-business regulation.

market – especially for agricultural goods that were often produced in the hinterland.

- The railroad led to **social inventions**. For example, the need to develop reliable railroad schedules led to the **establishment of time zones** – which occurred first in the US and quickly spread to the rest of the world.

- The railroad led to the **demographic decentralization of society** away from seaports and inland waterways. In the US, for example, the railroad led to the **opening of the American West** and transformed the U.S. into a truly continental country, enriched by natural resources and cultural diversity that were found West of the Mississippi River.

- The railroad led to what today we call "green revolution" – advances in agriculture that ended famine and starvation that were regular features of life in India, China and many other parts of the world. The railroad's contribution: **It happened in the US with the establishment of the land grant college with departments of agriculture, agriculture experiment stations and the agricultural extension service including university-based county agent**s — probably the most sophisticated and most successful institutions for systematic innovation and technology diffusion in the history of human civilization. This all happened because members of Congress from the Midwest and Atlantic regions of US needed to be given "inducements" for the many benefits that were being given to the railroad for the benefit of Western states and territories.

Consider the **automobile**. The impact of the automobile is much bigger than paved roads, electric starters and power steering. The biggest impacts were cultural, changing the way we live, work and play. The automobile led to:

- drive-in movies
- motels
- more sexual freedom
- drive-through fast food
- suburbs
- sprawl

The same goes for the **compass**. The compass was not simply a way to find your way around on the planet — especially on the oceans where the traveler-navigator had no landmarks for using dead-reckoning methods of navigation. The improved ability to navigate on the oceans created by the compass led to: [5]

- the **ability to sail in all kinds of weather** since the compass relieved the navigator of the need to be able to see the stars or track the shoreline; and

- the **construction of larger ships** because the compass dramatically reduced the dangers of running aground;[6]

- the ability **to sail long distances, opening up global trade routes** which, in retrospect, we now know, sparked unprecedented wealth creation.[7]

The same thing goes for the revolution in **information and communications technology – the so-called ICT industries**.

While microprocessors, wireless protocols and broadband technologies are getting faster, smaller and cheaper, they are beginning to have **impacts way beyond the information technology industries.**

Like the railroad, the automobile and the compass, advances in information technology – increasing computing power, expanding wireless coverage, greater bandwidth through all channels, etc. – combine with advances in miniaturization and micro- and nano-manufacturing technologies to reshape how we live, work and play – indeed to create whole new industries.[8]

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[5] On these points, see, for example, Amir D. Aczel. *The Riddle of the Compass: The Invention that Changed the World*, New York: Harvest Books, 2001; or Alan Gurney. *The Compass: A Story of Exploration and Innovation*. New York: W.W. Norton, 2004.

[6] In *The Compass: A Story.....*Gurney writes that "the cry of 'breakers ahead!' was the first warning that the navigating officers had made a dreadful mistake in the dead reckoning…"

[7] This story is told most recently in Thomas Friedman. *The World is Flat: A Brief History of the Twenty-first Century*. New York: Farrar, Straus, 2005.

[8] One of those new industries is sensornetics — not an IT industry but a new approach to intelligent control systems and information-based management to improve the management and operation of the engineered world. See, for example, Philip M. Burgess, "Sniffers and Triggers: Using Sensornetics to Manage the Engineered World," paper a background for the keynote address at the Tennessee Summit on Digital Government in Nashville, Tennessee, June 1, 2005.

A major impact of the digital revolution is in the workplace. Reason: New Economy forces reward enterprises that are:

- fast,
- flexible,
- focused,
- customized,
- networked, and
- global.

Result: Many new opportunities for small and mid-sized enterprises (SMEs) that naturally find it easier to be fast, flexible, focused, customized…because they are small and nimble…can now use modern telecommunications technologies to be networked and global as well — just like large companies.[9] So the new mantra for **all** enterprises – large and small alike – is **fast, flexible, focused, customized, networked and global.**

New digital applications change the workplace in three ways:

- **settings**— when and where people work, as the old model of everyone coming to a single workplace, usually at about the same time, is breaking down;

- **technologies** — from telephones, typewriters and mechanical calculators to the modern equipment people use to generate, process, communicate and store information;[10] and

- **organizational culture** — the set of formal and informal rules, practices, policies, ideas and expectations that guide the behavior of organizations that carry out a particular kind of work. [11]

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[9] Other impacts of New Economy forces are more privatization by the public sector; more outsourcing, delayering and downsizing by large private sector firms — so they can behave more like small firms.

[10] **Examples of "modern" equipment not widely available at the beginning of the last decade** include fax, voice mail, e-mail, integrated word processing (integrated with e-mail, fax and copying), groupware, 24-hour server, 24-hour hotline, video conferencing, high speed modems, high speed telephone lines and cable TV lines (HFC, DLS, fiber), CD-ROM, electronic whiteboard, scanner, computer-based slide projector, laptops (recall the Compact or Osborne "luggables" about that time), enhanced keyboards and screens, Internet access, access to information utilities (AOL, Google, Sensis, etc.). It is easy to take this all for granted, but the impact of technology on the workplace and especially the processing of information in an office environment has been dramatic and has happened, for the most part, during the past 10 years, marked by the introduction of the World Wide Web in 1995.

[11] See Franklin Becker, Steve PonTell, Paul Gary and M. Lynne Markus. *WorkSmart: Gaining Competitive Advantage from Integrated Workplace Strategies.* Denver: Center for the New West, 1996,   p. 9. This report grew out of a two year project managed by the Center for the New West and including the Claremont Graduate School of Management and Cornell's International Workplace Studies Program. See also "The New Workplace: Walls are Falling as the 'Office of the Future' Finally Takes Shape." *Business Week*, April 29, 1996.

New digital technologies are shaping **important new workplace trends**: It is noteworthy that each of these trends mitigates or eliminates the tyranny of distance,[12] and each contributes to speed and flexibility in decision-making and action.

> • **Telework**. Moving work to people rather than people to work takes many forms. Many teleworkers are **telecommuters** who work part-time at the office (at a **hot desk** or in a **hot seat**) and part-time at home or from another **alternative workplace** — e.g., airline VIP rooms or hotel business centers. [13]
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> Modern teleworkers also include **freelance professionals – what some call "soloists," "free agents," or "Lone Eagle" entrepreneurs.**[14] These people are "knowledge workers" – writers, analysts, brokers, manufacturers reps, attorneys, accountants, etc. – most of whom are in large cities but many of whom are now moving to small towns and rural areas for lifestyle reasons because they can now stay connected to their suppliers and their markets by faxes, modems, express mail and airplane tickets. Most are also **"amenity migrants" –** pre-retirement all, empty nesters many, looking for a better quality of life while continuing vocationally to do what they have always done.
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> In Australia, those who move to the sun coasts (e.g., the Gold Coast or Byron Bay) are called "**sea changers**;" those who move to the mountains or other inland locations (e.g., Ipswich or Orange) are called "**tree changers**."[15] But the demographic movement is all part of a global phenomenon, one that is largely enabled by new digital technologies.
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> Finally, there is the **small office/home office (SOHO) movement**, as increasing numbers of people are working at home — from professionals to craft workers and the self-employed. [16] Indeed, in the US, more than 50 million people now

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[12] With the possible exception of the alphabet and the printing press, **those inventions that abridge distance have had the greatest impact on civilization.** This is a thought from an inscription on the door of Chicago's Transportation Building.

[13] Others work at **telework business centers** or "remote" business locations that are closer to home and use electronic means to stay linked to the "central office."

[14] I first noticed freelance professionals showing up as amenity migrants in the Mountain West region of the US in the late 1980s. I called them "Lone Eagles" (after the aviator, Charles Lindbergh) and developed this idea in a series of op-ed pages in the *Rocky Mountain News*. Commentaries include "In Chancy Times, Lone Eagles Soar." (June 16, 1992); "'Lone Eagles' Nest in the West." (September 15, 1992; "Lone Eagles Fly Their Own Way." (January 25, 1994); and "Lone Eagles Are a Varied Species." (April 12, 1994). The Lone Eagle idea and stories about Lone Eagles have appeared in most major national news magazines — including *Forbes, Business Week, Time* and the largest newsweekly of all, *Parade*. See Colleen Murphy. *Lone Eagle Reading File*. Denver: Center for the New West, 1996. These are found on my web site at www.annapolisinstitute.net, enter Lone Eagle on the search engine.

[15] On these points see Bernard Salt, *The Big Shift*, South Yarra: Hardie Grant Books, 2004, for an insightful look at the forces driving contemporary demographic shifts in Australia.

[16] **The work-at-home community is very diverse**; it includes plumbers, electricians and taxicab drivers (who manage their business and do auto repairs at home) as well as white collar and professional services providers, such as physicians, attorneys and environmental engineers.   In the US, these general categories break down roughly as follows:

work at home some time during the week — including more than 15 million who work at home full time. [17] In Australia, the number of SOHO workers is nearly 1.0 million.

• **Project management**. Work in large and mid-sized enterprises is increasingly project oriented — work with a beginning, a middle and an end. Project work is limited by time and objectives and work is performed by teams that come together, do the job and break up — virtual organizations that blend in-house personnel and outside consultants, or nomads. Examples: War rooms and skunk works for longer term projects; task forces and working groups for shorter term projects.[18]

• **Professional Nomads**. Nomads are a new class of temporary workers that includes a wide range of highly qualified freelance professionals.   These New Economy hired guns staff include traditional consultants, free agents, soloists, amenity migrants, Lone Eagles, and other project junkies who make these new virtual systems work.[19]

Because of these trends, **alternatives to the traditional office** are now being tried. These innovations, in turn, create new issues in **workplace design** — including human adjacency,[20] privacy, individual control, status, churn, expert and employee involvement, space and furniture standards and office building design, such as "total

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• 60% = White collar — primarily marketing and sales but also writers, analysts, brokers, manufacturers reps, programmers.
• 20% = Professional — engineers, physicians, lawyers, accountants.
• 20% = Blue Collar — construction, fix-it household services, taxi cab owner-operators and other transportation, precision production.

[17] SOHO represents the **unbundling of work and location** and reflects the social impact of new trends in technology (computers, transportation and communications), lifestyle preferences and corporate management practices. On home-based telework, see Philip M. Burgess and Paul and Sara Edwards. *Workshifting*. Denver: Center for the New West Special Report, June 1995. On changing lifestyle preferences, see Faith Popcorn. *Clicking*. New York: HarperCollins, 1996 or *The Popcorn Report.* New York: Doubleday, 1991. On changing corporate management practices, see any of the many books and articles by old stand-bys such as Peter Drucker or Tom Peters or newbies such as Jim Collins (*Built to Last* (2001) or *Good to Great*(2005).

[18] On these points see Bernard Wysocki, Jr. "High-tech Nomads Write New Program for Work." *Wall Street Journal*, August 19, 1996 or John A. Byrne. "The Virtual Corporation." *Business Week*, February 8, 1993. Alvin Toffler called these "ad-hocracies" and "single pulse organizations." See his *Powershift: Knowledge, Wealth and Violence at the Edge of the 21st Century*. New York: Doubleday, 1990.

[19] See Wysocki, ibid. It is noteworthy that Manpower, Inc., the US national temp agency is now the largest employer in the US — with more than 600,000 people going to work for them each day. It should also be noted that more than 125,000 professionals — attorneys, physicians, environmental engineers — go to work each day as temps.

[20] Some organizational development experts believe that groups of roughly 8-25 people are the optimal size for human interaction. Others set break points at 7 and 12.

workplace" concept[21] and others. **Examples of alternative workplaces are detailed in Appendix A.**

These flexible workplace strategies have many **advantages:**

1. **Reduced costs** – from space savings, better team work, lower overhead.

2. **Improved morale**. Companies with telework and other flexible workplace

3. **Improved teamwork**. Employees in the flexible workplace are motivated to develop new habits of communication and collaboration to make things work in environments where job-sharing, flex-time, telework and other flex-work arrangements are in place. People like these new arrangements, so they work hard to make them succeed.

4. **Improved employee recruitment and retention**. People like to work in flex-work environment, especially at a time in our culture when more two-wage earner families are seeking new ways to combine work and family responsibilities.

5. **Increased cycle time**. Flexible working environments help companies increase speed – e.g., by moving more rapidly from the drawing board to a new revenue-producing product or service. From job-sharing and split-shifts to call-in centers and work-at-home arrangements, companies working in continental or global markets can better manage the opportunity to use their best human and technology resources on a 24x7 basis across multiple time zones. For example, by using the Internet, professionals can transfer team-based work from one time zone to another – e.g., from an office in New York to Tokyo or Sydney to Paris or London and back to New York – thereby achieving the 24-hour work day with fresh minds and first-string performers working the problem or issue to each location.

6. **Improved customer service**. By decreasing the employees' focus on the office and providing 24-hour coverage, there is more customer contact. By using "skills-routing" to ensure the best match between a customer and an employee along linguistic, technical or other criteria, there is more opportunity for customized customer service.

7. **Improved performance**. Higher morale, better teamwork, lower turnover and other advantages of the flexible workplace combine to improve employee performance and productivity.

There are, of course, downsides and caveats. Using new telecommuting technologies is not a magic bullet. But the changes in the workplace are enormous.

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[21] That is, instead of the common atrium typical of traditional US offices, many new office buildings, especially in Europe, have "streets" with travel services, convenience stores, cafes, restaurants, and banks.

Still, even in this area, **public policy is often a barrier**, as many are not well-suited to new ways of working. These include transportation and pollution abatement policies that encourage ride-sharing or public transportation. Reason: Flex-work employees have reduced opportunities to use ride-sharing or public transportation.[22] Neighborhood zoning regulations are another obstacle. Some prohibit home offices. Others can be used to stop delivery trucks (such as FedEx or UPS) from regular trips into a neighborhood.

Finally, as more professionals join the ranks of the freelance nomad and run their business from a home office, they encounter a host of obstacles in the business services community. These include:

- bankers who are reluctant to give loans
- merchant accounts are hard to come by
- difficulties leasing anything — space, copiers and other equipment.
- office supply stores won't give credit
- temp agencies won't send people
- insurance companies won't insure
- zoning laws won't permit home offices
- neighborhood covenants won't permit FedEx or other delivery trucks
- telephone companies are often charge more for a phone used for business purposes than a phone used to connect a residential user.

The public policy issues raised by these and related issues are large and the scope is broad. These changes in the workplace induced by advanced communications technologies are creating a huge new public policy agenda — including every from privacy and security and ownership of intellectual property to portable pension and workman's compensation.

- In **real estate**, as new office technologies change how and where people work (especially as increasing numbers of people work at home or on-site with clients. Result: hoteling, JIT offices and other approaches to officing that are dramatically reducing the square footage used by the average knowledge worker in downtown high-rises (and moving much work to peripheral locations. We are already well down the road toward a system of distributed work.

- In **manufacturing and transportation**, as fleet managers of trucking companies use modern network and wireless technologies which make possible **JIT production methods**,

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[22] See report on research on this issue by John Niles in Philip M. Burgess. "Telecomputing May Boost Travel." *Rocky Mountain News.* January 31, 1995. In fact, Becker and his colleagues point out that "...emerging research evidence suggests that electronic communications do not eliminate face-to-face meetings; rather, the new modes of communications tend to supplement and complement meetings." (Becker, et. al., op. cit., p. 78. This paper is an expansion of a presentation prepared for *"Understanding the Communications Revolution."* a briefing for the telecommunications trade media sponsored by Ameritech, in New York City, October 9, 1996.

where Japan has been a leader but others are now catching
up.

- In **education**, where the biggest impact of **distance learning**
  may be to support expanded home-schooling and other forms
  of alternative schools and new approaches to continuing
  education for an aging population.

- In **governance**, where electronic city halls, electronic Town
  Meetings and other telecom-based technologies are changing
  the way citizens participate in government and the way
  government delivers services to citizens.

- In **locational decisions**, as entrepreneurs, freelance
  professionals and other knowledge workers increasingly
  move to small cities and towns, as telecom technologies
  largely eliminate the **tyranny of distance.**

Making things work. New technologies – from the printing press and the compass
from earlier days to digital revolution today – often arrive on the scene before the big
ideas that will help us understand their true significance.

But until we achieve a fuller understanding of what these new digital technologies
mean to us as individuals and to business enterprises, one thing seems clear: New
social **technologies seem to work best when they are part of an integrated
workplace management strategy**. These include:

They also lead to other **important social shifts** — including:

- a **renaissance** for many small towns and rural areas,
- a substantial **change in the economic structure** of many non-metropolitan
  counties, to include more "export" oriented business and industry — i.e.,
  businesses that sell their products and services outside the local area, and
- more **home-based enterprises**, including an expanding SOHO movement.

By contrast, when these communications-facilitated innovations in workplace
management – from furniture and space management to telecommuting and other
forms of telework – are viewed as fashions and fads to be introduced as quick fixes,
they don't work.

Now, **what does all this mean for today**? Let me list three:

1. First, **new technologies unleash powerful social and economic forces** and
   are having **huge institutional impacts** — and it takes a while for new, Big
   Ideas to catch up. In the meantime, tremendous change is going on.

2. Second, established **authorities will almost always resist new Big Ideas and
   try to "guide" and control the introduction and use of new technologies.**
   Examples from : Many intellectuals muse about the "dangers" of an Internet

without gatekeepers, editors and interpreters, The same with new technologies – governments undertake industrial policies manage the way new technologies are introduced and used.   We see this happening today in segments of the telecom industry where there are a lot of people who want to manage the introduction of new technology.

3. Third, but in the end **it is the Big Idea that will determine the ultimate impact of these new technologies**. And so far, I think, the Big Idea is still waiting to be articulated in a way that we can clearly see and makes sense to all of us.

- It is a Big Idea that probably has something to do with more **personal responsibility** in distributed systems.
- Alvin Toffler's idea of **demassification** is probably part of it.
- But whatever it is, when it comes, it will liberate our minds and our spirits and it will reshape society – not unlike the Big Ideas of Columbus and Martin Luther.
- And the Big Idea is likely to be frustrated by, not enabled by, government regulation.

Appendix A

Workplace Design & the Alternative Workplace

Examples of new approaches to workplace design include ***distributed work*** (telecommuting, home working, outsourcing), ***flex-work*** (flex-time, job-sharing), ***flex-space*** (team offices, desk docking, hoteling) and other high performance workplace strategies. Specific examples include:

• ***Cellular or open-plan offices***. This approach uses workstations, movable panels and other flexible systems furniture that allow continuous reconfiguration. It also uses one-size-fits-all or a modified approach that uses an "executive" band, "management" band and "professional" band. Often used to replace the "fixed office and the bullpen." Sometimes called the "universal plan."

• ***Hoteling and other non-territorial offices***. Also called "free address" or "just-in-time" offices. Whatever they are called, it is a situation where the individual does not have a permanently assigned desk, workstation or office. Instead, workers are provided temporary space when they are on site in a process that is managed by an "office concierge." Example: Ernst & Young's offices in Washington, D.C.

• ***Integrated systems furniture***. Uses workstations, variable-height panels, fixed work surfaces, storage space and other systems furniture that allow continuous reconfiguration.
• ***Team offices***. Includes "war rooms," "caves and commons," "shared-assigned" offices, project management rooms and other team rooms. The idea is to group private work areas around larger communal team space. Steelcase, Haworth, Herman Miller and others in the $10 billion office furniture industry are creating highly mobile and flexible systems and other special products like shared equipment, rolling whiteboards, etc. to meet this emerging need.
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• ***"Found" alternative workplaces***. Includes libraries, hotel lobbies, automobiles, airplanes, airline clubs, restaurants, bars, sports clubs. These places are used for scheduled meetings, writing and reviewing reports, accessing information, etc.

• ***"Designed" alternative workplaces***. In fact, sports clubs, large hotel chains, airline clubs are now typically equipped with fax and copy machines, work tables, conference rooms and extra telephone jacks to plug into the Internet. The result, according to Becker, et. al.: "The boundaries between work and leisure, private and public, corporate and retail are blurring." [23]

• ***Home-based telework***. For an overview of the SOHO movement, including the obstacles to working at home, see Burgess and Edwards. *Workshifting*. op. cit.

• ***Telework business centers***. Not to be confused with business "outposts," the more traditional "branch offices" or the full service "executive office."

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[23] Becker, op. cit., p. 28.