

# ANALISIS INDUSTRI RETAIL NASIONAL

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## ABSTRACT

*Fast moving in retail industry is the latest trading industry in trading chain. The study is to identify the condition of retail industry in Indonesia. This uses normative juridical approach. The research material is gathered by literature or document review. The analysis for modern retail industry is conducted through qualitative, thus explaining law material gathered from library being selected, arranging systematically, and finally getting conclusion figured to answer problems related to the rules for monopoly and dysfunction business competition in retail industry. The study result showed that modern market, which so far having a good performance, will have challenges. One biggest challenge is the potential for slow-moving revenue growth as the effects of slow-moving economic caused by global crisis.*

**Keywords:** *industry, retail, trading, modern market, business competition*

## ABSTRAK

*Perkembangan sangat cepat terjadi pada industri retail yang merupakan industri perdagangan terakhir dalam rantai perdagangan. Studi ini bertujuan untuk mengetahui kondisi industri retail di Indonesia. Metode yang digunakan yaitu dengan pendekatan yuridis normatif. Bahan penelitian dikumpulkan dengan cara studi pustaka atau dokumen. Analisis pemain retail modern dilakukan secara kualitatif, yaitu menerangkan bahan hukum yang diperoleh dari kepustakaan setelah terlebih dahulu diseleksi, disusun secara sistematis kemudian disimpulkan untuk mendapatkan gambaran atas jawaban permasalahan yang berkaitan dengan penerapan aturan larangan praktek monopoli dan persaingan usaha tidak sehat dalam industri retail. Hasil studi ini menunjukkan bahwa pasar modern, yang selama ini menunjukkan kinerja yang sangat baik, akan menghadapi tantangan. Salah satu tantangan terbesar adalah potensi perlambatan laju pertumbuhan revenue sebagai dampak dari perlambatan perekonomian yang diakibatkan oleh krisis global.*

**Kata kunci:** *industri, retail, perdagangan, pasar modern, persaingan usaha*

## PENDAHULUAN

### Retail di Indonesia

Bisnis retail adalah penjualan barang secara eceran pada berbagai tipe gerai seperti kios, pasar, department store, butik dan lain-lain (termasuk juga penjualan dengan sistem *delivery service*), yang umumnya untuk dipergunakan langsung oleh pembeli yang bersangkutan. Bisnis retail di Indonesia dapat dibedakan menjadi 2 kelompok besar, yakni retail tradisional dan retail modern. Retail modern pada dasarnya merupakan pengembangan dari retail tradisional. Format retail ini muncul dan berkembang seiring perkembangan perekonomian, teknologi, dan gaya hidup masyarakat yang membuat masyarakat menuntut kenyamanan yang lebih dalam berbelanja. Industri retail, terus tumbuh pesat, bukan hanya di Indonesia, melainkan juga di Asia. Era retail modern menjelang Asean Economic Community (AEC) 2015 diprediksi akan tumbuh lebih cepat. Hal itu didukung oleh banyak perusahaan asing yang akan investasi di Indonesia.

Retail modern pertama kali hadir di Indonesia saat Toserba Sarinah didirikan pada 1962. Pada era 1970 s/d 1980-an, format bisnis ini terus berkembang. Awal dekade 1990-an merupakan tonggak sejarah masuknya retail asing di Indonesia. Ini ditandai dengan beroperasinya retail terbesar Jepang 'Sogo' di Indonesia. Retail modern kemudian berkembang begitu pesat saat pemerintah, berdasarkan Kepres no. 99 th 1998, mengeluarkan bisnis retail dari negative list bagi Penanaman Modal Asing. Sebelum Kepres 99 tahun 1998 diterbitkan, jumlah peretail asing di Indonesia sangat dibatasi. Saat ini, jenis-jenis retail modern di Indonesia sangat banyak meliputi Pasar Modern, Pasar Swalayan, Department Store, Boutique, Factory Outlet, Specialty Store, Trade Centre, dan Mall/Supermall/Plaza. Format-format retail modern ini akan terus berkembang sesuai perkembangan perekonomian, teknologi, dan gaya hidup masyarakat.

Ketua Umum Asosiasi Pedagang Retail Indonesia (Aprindo) Pudjianto optimistis, retail asli Indonesia bisa bersaing dengan retail negara lain. "Kita harus bisa bersaing, begitu juga supermarket. Pertumbuhan mini market juga, harus didorong. Bahkan. Jepang dan India sudah Jenuh dengan *convenience store*, malah memiliki kecenderungan meniru konsep kita, yang menjual kebutuhan rumah tangga." ujar Pudjianto di sela-sela acara Media Tour bersama Aprindo dan Alfamart di Bangkok, Thailand.

**Tabel 1: Karakteristik Beberapa Jenis Ritel Modern**

URAIAN	PASAR MODERN (PASAR SWALAYAN)	DEPARTMENT STORE	SPECIALTY STORE	MALL/ SUPERMALL / PLAZA	TRADE CENTRE
Definisi	Sarana penjualan barang-barang kebutuhan rumah tangga termasuk kebutuhan sembilan bahan pokok.	Sarana penjualan berbagai macam kebutuhan sandang dan bukan kebutuhan sembilan bahan pokok, yang disusun dalam bagian yang terpisah-pisah dalam bentuk counter.	Sarana penjualan yang hanya memperdagangkan satu kelompok produk saja. Trend saat ini adalah produk elektronik dan bahan bangunan dalam skala yang cukup besar.	Sarana untuk melakukan perdagangan, rekreasi, restoran, dan sebagainya, yang terdiri dari banyak outlet yang terletak dalam bangunan / ruang yang menyatu.	Pusat jual beli barang sandang, papan, kebutuhan sehari-hari, dll secara grosiran dan eceran yang didukung oleh sarana yang lengkap seperti restoran / food court.
Metode Penjualan	<ul style="list-style-type: none"> <li>Dilakukan secara eceran, langsung pada konsumen akhir dengan cara swalayan (pembeli mengambil sendiri barang dari rak-rak dagangan dan membayar dikasir).</li> <li>Tidak dapat dilakukan tawar-menawar harga barang.</li> </ul>	<ul style="list-style-type: none"> <li>Dilakukan secara eceran dan cara pelayanan umumnya dibantu oleh pramuniaga.</li> <li>Tidak dapat dilakukan tawar-menawar harga barang.</li> </ul>	<ul style="list-style-type: none"> <li>Dilakukan secara eceran, langsung pada konsumen akhir dengan cara swalayan.</li> <li>Tidak dapat dilakukan tawar-menawar harga barang.</li> </ul>	<ul style="list-style-type: none"> <li>Dilakukan secara eceran, langsung pada konsumen akhir, dimana outlet-outlet didalamnya menerapkan baik metode swalayan maupun dibantu oleh pramuniaga.</li> <li>Tidak dapat dilakukan tawar-menawar harga barang.</li> </ul>	<ul style="list-style-type: none"> <li>Dilakukan secara eceran dan grosir; umumnya dibantu oleh pramuniaga.</li> <li>Dapat dilakukan tawar-menawar harga barang.</li> </ul>

Sumber: Peraturan Presiden no. 112 tahun 2007

Pasar Modern, salah satu jenis pasar retail yang diperkenalkan pada era 1970-an, disebut-sebut sebagai format retail yang mengalami perkembangan yang sangat baik dalam 5 tahun terakhir. Bagaimanakah sebenarnya geliat Pasar Modern dalam kurun waktu tersebut? Siapa sajakah pemain-pemain utamanya, dan apa sajakah tantangan-tantangan yang dihadapi Pasar Modern dimasa mendatang? Tulisan ini akan membahas perkembangan Pasar Modern dan siapa saja pemain-pemain utama bisnis ini. Tulisan ini juga akan membahas tantangan-tantangan apa saja yang dihadapi oleh Pasar Modern kedepannya.

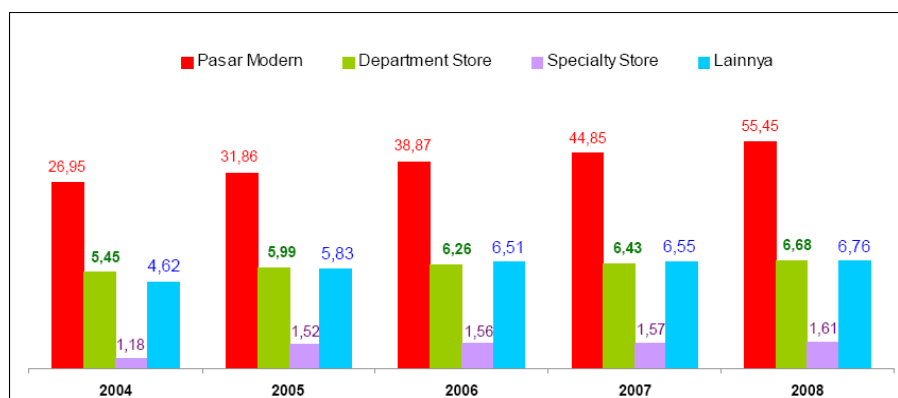
## Perkembangan Pasar Modern

Pasar Modern adalah tempat penjualan barang-barang kebutuhan rumah tangga (termasuk kebutuhan sehari-hari), dimana penjualan dilakukan secara eceran dan dengan cara swalayan (konsumen mengambil sendiri barang dari rak dagangan dan membayar ke kasir). Itulah sebabnya, pasar dengan format seperti ini disebut juga Pasar Swalayan.

Perkembangan ekonomi saat ini memicu persaingan didalam negeri semakin bebas dan ketat sehingga diperlukan suatu strategi bersaing yang baik dan terpadu karena persaingan adalah kunci dari keberhasilan atau kegagalan suatu perusahaan. Kemampuan suatu perusahaan untuk dapat memenuhi kebutuhan konsumennya merupakan suatu tantangan yang harus dihadapi oleh setiap organisasi bisnis. Kebutuhan masyarakat yang makin meningkat berdampak pada persaingan antar perusahaan semakin meningkat tajam sehingga perusahaan harus mampu mendeteksi apa yang menjadi kebutuhan pasar atau keinginan konsumen serta membaca dan menterjemahkan setiap perubahan situasi sebagai peluang. Tujuan strategi bersaing adalah menjadikan perusahaan pada posisi yang menguntungkan dan dapat dipertahankan terhadap kekuatan-kekuatan yang menentukan persaingan industri. Indonesia dengan jumlah penduduk ke-Empat terbanyak di dunia setelah Cina dan India memiliki potensi yang sangat besar bagi pasar retail. Sejalan dengan perkembangan waktu dan perubahan gaya hidup masyarakat yang berpengaruh pada pola belanja, kegiatan bisnis retail atau bisnis eceran modern di Indonesia menunjukkan perkembangan pesat. Pada awal tahun 1980-an perkembangan pasar retail ditunjukkan dengan munculnya gerai perdagangan eceran modern di kota-kota besar dan pada awal 1990-an sampai dengan sekarang gerai perdagangan eceran modern merambah kota-kota kecil.

Dalam 5 tahun terakhir, Pasar Modern merupakan penggerak utama perkembangan retail moden di Indonesia. Pada 2004 – 2008, *revenue* Pasar Modern bertumbuh 19,8%, tertinggi dibanding format retail modern yang lain. *Revenue* Department Store, Specialty Store dan format retail modern lainnya masing-masing meningkat hanya 5,2%, 8,1%, dan 10,0% per tahun (Grafik 1).

Grafik 1: Perkembangan Omset Ritel Modern, 2004-2008 (Rp Triliun)



Sumber: AC Nielsen, Asosiasi Pengusaha Retail Indonesia

Keterangan:

- Pasar Modern (*stand alone* maupun yang berlokasi di *trade center* atau di *mall*)
- *Department Store* (*stand alone* maupun yang berlokasi di *trade center* atau di *mall*)
- *Specialty Store* (*stand alone* maupun yang berlokasi di *trade center* atau di *mall*)
- Lainnya (*factory outlet*, butik, *counter* merk-merk tertentu seperti *Guess*, *Esprit*, dll baik yang *stand alone* maupun yang berlokasi di *trade center* atau *mall-mall* tetapi bukan yang berlokasi di *Department Store*)

Peningkatan *revenue* yang cukup tinggi tersebut membuat Pasar Modern semakin menguasai pangsa *revenue* Retail Modern. Pada 2004, market share *revenue* Pasar Modern adalah 70,5% dari total *revenue* Retail Modern di Indonesia. Pada tahun 2008 telah meningkat menjadi 78,7%. Selain itu, jika dibandingkan terhadap total *revenue* industri retail di Indonesia (retail modern dan retail tradisional), pangsa *revenue* Pasar Modern juga mengalami peningkatan dari 18,3% pada 2004, menjadi 24,4% pada 2008 (Tabel 2).

Tabel 2: Perkembangan Market Share Ritel Modern, 2004-2008

Deskripsi	2004	2005	2006	2007	2008
Omset Pasar Modern (Rp T)	27,0	31,9	38,9	44,8	55,4
Total Omset Bisnis Ritel Modern (Rp T)	38,2	45,2	53,2	59,4	70,5
% Omset Pasar Modern terhadap Ritel Modern	70,5%	70,5%	73,1%	75,5%	78,7%
Total Omset Ritel Nasional	146,9	161,4	183,4	198,0	227,4
% Omset Pasar Modern terhadap Total Bisnis Ritel	18,3%	19,7%	21,2%	22,6%	24,4%

Sumber: AC Nielsen, Asosiasi Pengusaha Retail Indonesia

Selain ini, perkembangan industri retail secara mencolok juga ditunjukkan dengan sejumlah penambahan gerai yang sangat signifikan dari dua pemain minimarket yang besar, yakni alfamart dan indomaret. Untuk Alfamart sendiri mengalami lonjakan dari 1,263 gerai unit pada tahun 2005 menjadi 2,659 gerai unit pada tahun 2008 atau sebesar 110.5%. Sedangkan untuk Indomaret mengalami lonjakan dari 1,402 gerai unit pada tahun 2005 menjadi 3090 gerai unit pada tahun 2008 atau sebesar 120.6%.

Tabel 3 Perkembangan Jumlah Gerai Minimarket

Minimarket	Jumlah Gerai (Unit)			
	2005	2006	2007	2008
Alfamart	1,263	1,753	2,266	2,659
Indomaret	1,402	1,857	2,425	3,093

Sumber: AC Nielsen, SWA No. 06/XXV

Dalam menghadapi persaingan industri retail, beberapa strategi yang digunakan dan telah diterapkan kedua minimarket tersebut saat ini diantaranya adalah pemilihan lokasi yang menjangkau masyarakat, promo harga dan produk, pembukaan sebagian gerai dalam 24 jam, kemudahan pembayaran tidak tunai (*noncash*), terdapat fasilitas kartu anggota, pelayanan *delivery* (antar) dengan persyaratan kondisi tertentu dan penerapan strategi lainnya. Penerapan strategi tersebut merupakan beberapa strategi bersaing dan dapat dijadikan sebagai *competitive strategy* masing-masing minimarket tersebut.

Memang terjadi kecenderungan pergeseran pengeluaran uang para pembeli dari pasar tradisional ke pasar modern. Survei Nielsen (2003) mengatakan bahwa konsumen di kota-kota besar seperti Jakarta, Bandung dan Surabaya cenderung membelanjakan sebagian besar dari uangnya ke pasar swalayan. Hal ini ditunjukkan peningkatan yang cukup besar dalam setahun yakni dari sekitar 35% pada tahun 2001 menjadi 48% pada tahun 2002. Sebaliknya, persentase dari total konsumen ke pasar tradisional mengalami penurunan dari 65% ke 52% dalam waktu yang sama. Khususnya di Jakarta minat konsumen berbelanja ke pasar swalayan meningkat cukup signifikan dari sekitar 31% pada tahun 2001 menjadi 48% pada tahun 2002, sedangkan yang ke pasar tradisional menurun dari 69% ke 52% selama periode yang sama.

Setelah diperkenalkan pertama kali di Indonesia pada era 1970-an, saat ini terdapat 3 jenis Pasar Modern yaitu Minimarket, Supermarket dan Hypermarket. Perbedaan utama dari ketiganya terletak pada luas lahan usaha dan range jenis barang yang diperdagangkan. Berikut karakteristik dari ke-3 jenis Pasar Modern tersebut:

Tabel 4 Karakteristik pasar-pasar modern di Indonesia

Uraian	Minimarket	Supemarket	Hypermarket
Barang yang diperdagangkan	Berbagai macam kebutuhan rumah tangga termasuk kebutuhan sehari-hari	Berbagai macam kebutuhan rumah tangga termasuk kebutuhan sehari-hari	Berbagai macam kebutuhan rumah tangga termasuk kebutuhan sehari-hari
Jumlah item	< 5000 item	5000 – 25000 item	> 25000 item
Jenis Produk	- Makanan Kemasan - Barang-barang higienis pokok	- Makanan - Barang-barang rumah tangga	- Makanan - Barang-barang rumah tangga - Elektronik - Busana / Pakaian - Alat Olahraga
Model Penjualan	Dilakukan secara eceran, langsung pada konsumen akhir dengan cara swalayan (pembeli mengambil sendiri barang dari rak-rak dagangan dan membayar dikasir)	Dilakukan secara eceran, langsung pada konsumen akhir dengan cara swalayan	Dilakukan secara eceran, langsung pada konsumen akhir dengan cara swalayan
Luas Lantai Usaha (Berdasarkan Perpres terbaru, yakni no. 112 th 2007)	Maksimal 400 m <sup>2</sup>	4000 - 5000 m <sup>2</sup>	> 5000 m <sup>2</sup>
Luas Lahan Parkir	Minim	Standard	Sangat luas
Modal (diliuar tanah dan bangunan)	s/d Rp200 juta	Rp200 juta - Rp10 Milyar	Rp 10 Milyar keatas

Sumber: Peraturan Presiden no. 112 tahun 2007

Pasar Modern sebenarnya adalah usaha dengan tingkat keuntungan yang tidak terlalu tinggi, berkisar 7-15% dari *revenue*. Namun bisnis ini memiliki tingkat likuiditas yang tinggi, karena penjualan ke konsumen dilakukan secara tunai, sementara pembayaran ke pemasok umumnya dapat dilakukan secara bertahap.

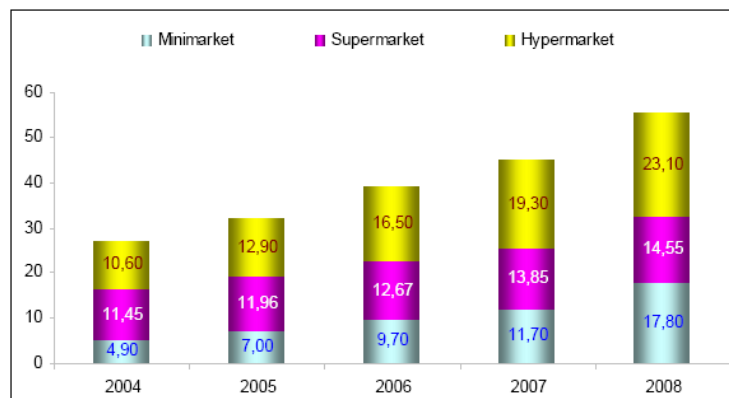
Seperti retail modern lainnya, Pasar Modern umumnya memiliki posisi tawar yang relatif kuat terhadap pemasok-pemasoknya. Ini karena peretail modern, umumnya adalah perusahaan dengan skala yang cukup besar dan saluran distribusi yang luas, sehingga pembelian barang ke pemasok dapat dilakukan dalam jumlah yang besar. Posisi tawar yang kuat memberi banyak keuntungan bagi peretail modern. Selain bisa mendapatkan kemudahan dalam hal jangka waktu pelunasan barang, diskon harga juga akan semakin mudah diperoleh dengan posisi tawar yang kuat tersebut.

Keuntungan-keuntungan dari posisi tawar inilah yang membuat pasar modern mampu menerapkan harga murah dan bersaing dengan pasar tradisional, namun tetap mampu mempertahankan kenyamanan gerai-gerainya.

## Perkembangan Pasar Modern Berdasarkan Jenisnya

Berdasarkan jenisnya, Minimarket dan Hypermarket adalah Pasar Modern dengan performance yang sangat signifikan dalam kurun waktu 5 tahun terakhir ini. Performance Minimarket yang sangat baik terlihat dari laju pertumbuhan *revenue*-nya. Pada 2004 – 2008 *revenue* Minimarket meningkat sangat tinggi, rata-rata 38,1% per tahun. *Revenue* Hypermarket juga meningkat cukup tinggi, yakni 21,5% per tahun. Sementara pada periode 2004 – 2008 tersebut, *revenue* Supermarket meningkat hanya 6,2% per tahun (Grafik 2).

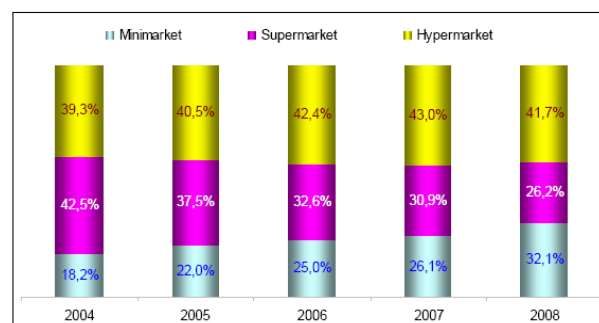
Grafik 2 Perkembangan *Revenue* Pasar Modern Berdasarkan Jenisnya, 2004-2008 (Rp Triliun)



Sumber: Asosiasi Pengusaha Retail Indonesia

Untuk Hypermarket, performance yang sangat baik terlihat dari kemampuannya menjadi Pasar Modern dengan pangsa *revenue* terbesar. Pada 2008, *revenue* Hypermarket adalah Rp23,1 triliun atau 41,7% dari total *revenue* seluruh Pasar Modern di Indonesia, sementara Minimarket 32,1% dan Supermarket 26,2% (Grafik 2 & Grafik 3). Kemampuan Hypermarket menjadi Pasar Modern dengan pengumpulan *revenue* terbesar karena Hypermarket menawarkan pilihan barang yang lebih banyak dibanding Supermarket dan Mini market, sementara harga yang ditawarkan Hypermarket relatif sama, bahkan pada beberapa barang bisa lebih murah daripada Supermarket dan Minimarket.

Grafik 3: Perkembangan Pangsa Omset Pasar Modern Berdasarkan Jenisnya, 2004-2008 (Rp Triliun)



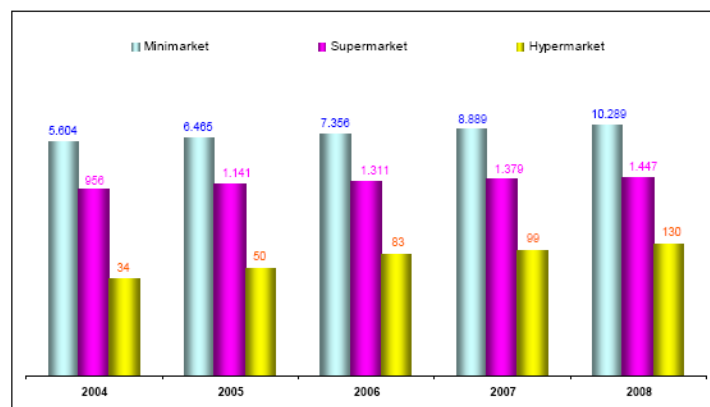
Sumber: Asosiasi Pengusaha Retail Indonesia

Penguasaan pangsa *revenue* oleh Hypermarket telah terjadi sejak tahun 2005. Sebelumnya, yakni pada 2004, market share *revenue* terbesar dipegang oleh Supermarket. Penurunan pangsa *revenue* Supermarket yang terjadi terus menerus – bahkan pada tahun 2008, menjadi yang yang terkecil – menunjukkan bahwa format Supermarket tidak terlalu *favourable* lagi. Sebab, dalam hal kedekatan lokasi dengan konsumen, Supermarket kalah bersaing dengan Minimarket (yang umumnya berlokasi di perumahan penduduk), sementara untuk range pilihan barang, Supermarket tersaingi oleh Hypermarket (yang menawarkan pilihan barang yang jauh lebih banyak).

Bisnis modern terutama retail selalu melakukan transformasi sebagai respon *economic turbulence* yang terjadi pada 2008 ini. Persaingan yang ketat membuat, beberapa retail dunia masuk dalam emerging market yang berada pada Negara berkembang. Survei A.T. Kearney dalam Global Retail Development Index 2008 yang dilakukan pada Negara berkembang atas 25 faktor makroekonomi yang menjadi pertimbangan bagi retailer untuk memasuki Negara tersebut, Indonesia berada pada peringkat ke 15 naik atau naik sembilan peringkat dari tahun 2007.

Kinerja cemerlang Hypermarket juga ditunjukkan melalui pertumbuhan jumlah gerai. Pada 2004-2008 pertumbuhan gerai Hypermarket sangat tinggi, yakni 39,8% per tahun. Gerai Minimarket juga meningkat cukup tinggi, yakni 16,4% per tahun, sementara gerai Supermarket meningkat 10,9% per tahun (Grafik 4).

**Grafik 4: Perkembangan Jumlah Gerai Pasar Modern Berdasarkan Jenisnya, 2004-2008 (Rp Triliun)**



Sumber: Asosiasi Pengusaha Retail Indonesia

Jumlah gerai Hypermarket yang bertumbuh sangat tinggi tersebut menunjukkan bahwa format Hypermarket yang baru diperkenalkan ke masyarakat di Indonesia pada awal tahun 2000-an disambut baik oleh konsumen di tanah air.

Berdasarkan sebaran geografisnya, gerai-gerai Pasar Modern tersebut terkonsentrasi di Pulau Jawa. Pada 2008, dari sekitar 11.866 gerai Pasar Modern, sekitar 83% diantaranya berlokasi di Pulau Jawa (Tabel 5). Propinsi DKI Jakarta, Jawa Barat dan Jawa Timur senantiasa menjadi daerah dengan jumlah gerai Pasar Modern terbanyak. Terkonsentrasinya gerai-gerai Pasar Modern di Pulau Jawa tidak lepas dari kondisi dimana konsentrasi penduduk dan pusat perekonomian Indonesia memang berada di pulau ini.



Tabel 5 Sebaran Gerai-Gerai Pasar Modern, 2008 (Unit)

Propinsi	Minimarket	Supermarket	Hypermarket	Total
<b>Pulau Jawa</b>	<b>8.775</b>	<b>940</b>	<b>107</b>	<b>9.822</b>
DKI Jakarta	3.968	317	40	4.325
Jawa Barat	1.300	194	29	1.523
Banten	1.004	28	14	1.046
Jogjakarta	406	45	4	455
Jawa Tengah	979	172	4	1.155
Jawa Timur	1.118	184	16	1.318
<b>Pulau Sumatera</b>	<b>954</b>	<b>195</b>	<b>11</b>	<b>1.160</b>
Sumatera Utara	412	74	6	492
Riau & Batam	96	62	2	160
Sumatera Barat	205	23	-	228
Sumatera Selatan	206	27	3	236
Lampung	35	9	-	44
<b>Bali</b>	<b>200</b>	<b>52</b>	<b>2</b>	<b>254</b>
<b>Pulau Sulawesi</b>	<b>104</b>	<b>48</b>	<b>7</b>	<b>159</b>
Sulawesi Selatan	56	37	6	99
Sulawesi Utara	48	11	1	60
<b>Pulau Kalimantan</b>	<b>112</b>	<b>56</b>	<b>3</b>	<b>171</b>
Kalimantan Selatan	40	19	1	60
Kalimantan Timur	43	23	1	67
Kalimantan Barat	29	14	1	44
<b>Papua</b>	<b>28</b>	<b>10</b>	<b>-</b>	<b>38</b>
<b>Lain-lain</b>	<b>116</b>	<b>146</b>	<b>-</b>	<b>262</b>
<b>Total</b>	<b>10.289</b>	<b>1.447</b>	<b>130</b>	<b>11.866</b>

Sumber: Asosiasi Pengusaha Retail Indonesia

## Pemain-Pemain Utama Pasar Modern

Pada kelompok Minimarket, hanya terdapat 2 pemain besar yaitu Indomaret dan Alfamart. Indomaret merupakan pemain terbesar dengan pangsa *revenue* sekitar 43,2% dari total *revenue* Minimarket di Indonesia. Sementara Alfamart membuntuti dengan pengumpulan *revenue* sebesar Rp7,3 triliun atau sekitar 40,8% dari total *revenue* Minimarket di Indonesia (Tabel 6).

Tabel 6 Revenue pe-retail minimarket, 2008 (Rp Triliun)

No	Gerai	Omset (Rp Milyar)	Market Share
1	Indomaret	7.682	43,16%
2	Alfamart	7.253	40,75%
3	OMI	731	4,11%
4	Ceriamart	426	2,39%
5	Circle K	386	2,17%
6	Yomart	284	1,60%
7	Starmart	223	1,25%
8	AM/PM	122	0,69%
9	Markaz	102	0,57%
10	Lainnya	591	3,32%
<b>Total</b>		<b>17.800</b>	<b>100,00%</b>

Sumber: Media Data SWA No. 06/XXV

Indomaret juga mempunyai jaringan Minimarket dengan jumlah gerai terbanyak, dibuntuti Alfamart. Pada 2008, jumlah gerai jaringan Indomaret mencapai 3.116 unit atau 30,3% dari total jumlah gerai Minimarket yang ada di Indonesia, sementara jumlah gerai jaringan Alfamart mencapai 2.755 unit atau 26,8% dari total jumlah gerai Minimarket di Indonesia. Minimarket merupakan jenis pasar modern yang agresif memperbanyak jumlah gerai dan menerapkan sistem franchise dalam



memperbanyak jumlah gerai. Dua jaringan terbesar Minimarket yakni Indomaret dan Alfamart juga menerapkan sistem ini.

Tujuan *peretail* minimarket dalam memperbanyak jumlah gerai adalah untuk memperbesar skala usaha (sehingga bersaing dengan skala usaha Supermarket dan Hypermarket), yang pada akhirnya memperkuat posisi tawar ke pemasok. Sistem *franchise* merupakan metode dianggap lebih mudah dan murah karena tanpa mengeluarkan biaya investasi, *peretail* selaku pemberi waralaba bisa meningkatkan volume pembelian barang sebab pasokan barang ke gerai-gerai franchise tetap dilakukan oleh *peretail* pemberi waralaba.

Pada kelompok Supermarket, terdapat 6 pemain utama yakni Hero, Carrefour, Superindo, Foodmart, Ramayana, dan Yogya + Griya Supermarket. Ke-6 jaringan *retail* ini menguasai 76% pangsa *revenue* Supermarket di Indonesia (Tabel 7).

Tabel 7 Revenue Pe-retail Supermarket, 2008 (Rp Triliun)

No	Supermarket	Omset (Rp Milyar)	Market Share (%)
1	Hero + Compact Giant	2.125	14,61%
2	Carrefour	2.030	13,95%
3	Super Indo	1.942	13,35%
4	Foodmart	1.773	12,19%
5	Yogya + Griya	1.690	11,62%
6	Ramayana	1.544	10,61%
7	Gelael	335	2,30%
8	Naga	229	1,57%
9	Hari-hari	217	1,49%
10	Jayasera	207	1,42%
11	Tip Top	159	1,09%
12	Metro	128	0,88%
13	D'Best	112	0,77%
14	Jamesons	80	0,55%
15	Lainnya	1.978	13,60%
<b>Total</b>		<b>14.549</b>	<b>100,00%</b>

Sumber: Media Data SWA No. 06/XXV

Pada kelompok Hypermarket hanya terdapat 5 peretail dan 3 diantaranya menguasai 88,5% pangsa *revenue* Hypermarket di Indonesia. Tiga pemain utama tersebut adalah Carrefour yang menguasai hampir 50% pangsa *revenue* hypermarket di Indonesia, Hypermart (Matahari Putra Prima) dengan pangsa 22,1%, dan Giant (Hero Grup) dengan 18,5% (Tabel 8).

Tabel 8 Revenue Peretail Hypermarket, 2008 (Rp Triliun)

No	Hypermarket	Omset (Rp Milyar)	Market Share (%)
1	Carrefour	11.250	48,70%
2	Hypermart	5.100	22,08%
3	Giant	4.100	17,75%
4	Makro	2.200	9,52%
5	Indogosir	450	1,95%
<b>Total</b>		<b>23.100</b>	<b>100,00%</b>

Sumber: Media Data SWA No. 06/XXV

Hypermarket kini menjadi primadona bagi peretail pasar modern. Ini karena hypermarket dengan cepat mampu memberi kontribusi terbesar bagi pendapatan peretail Pasar Modern. Giant, jaringan hypermarket milik Hero yang baru beroperasi pada 2002, telah mampu memberi kontribusi pendapatan sebesar 40% pada 2005 bagi grupnya dan pada 2008, kontribusi pendapatan telah menjadi 78,3%, mengungguli kontribusi pendapatan Supermarket yang telah lebih dulu exist.

Demikian pula halnya dengan Hypermart milik Matahari Putra Prima (MPP). Pada 2003, pendapatan Pasar Modern grup ini disumbang 100% oleh format supermarketnya. Namun pada 2008, kontribusi supermarket merosot menjadi hanya 20%, sementara 80% pendapatan Pasar Modern grup ini disumbang oleh Hypermart.

Awalnya, pasar retail Indonesia dikuasai oleh beberapa pemain ternama yang sudah lama berkecimpung dalam usaha ini. Hero, Indomaret, Ramayana, Matahari, Alfa adalah beberapa nama yang telah lama menguasai jagad eceran Indonesia. Namun serbuan hipermarket yang begitu gencar di tahun 2000-an menjadikan peta persaingan bisnis retail menjadi makin sengit.

Hypermart, Makro, Giant dan Carrefour adalah nama-nama yang dikenal bertipe hipermarket. Lahan yang luas, display yang lega, pilihan barang yang sangat bervariasi dan serba ada sekaligus menjunjung kelegaan dan kemudahan berbelanja, menjadi karakteristik tersemat dalam istilah hipermarket. Perusahaan yang disebut terakhir, hingga tahun 2007 menduduki nomor wahid dari sisi penjualan.

Carrefour, Raksasa Retail dari negeri Perancis, mulai memasuki pasar Indonesia sejak awal 1998 menyebar benih keuntungan di beberapa kota. Modal pengalaman internasional menyebarkan outlet di berbagai penjuru bumi dan memiliki modal besar membuat Carrefour digdaya bersaing dengan pasar domestik yang dimasukinya. Dengan kata lain, Carrefour punya amunisi berlebih dalam bersaing dengan peretail lokal. Meskipun jika dilihat dari jumlah outlet masih minim di Indonesia, baru 24 outlet, hasil penjualan Carrefour mencapai Rp7.288 Miliar dengan penjualan sebesar Rp43.021.427 per m<sup>2</sup> menjadikan carrefour peringkat pertama di atas Ramayana dengan hasil penjualan Rp4.850 miliar dengan rata-rata penjualan Rp10.615.014 per m<sup>2</sup>.

Dengan diakuisisinya saham PT Alfa Retailindo Tbk (Alfa) oleh Carrefour, perusahaan Retail multinasional, dengan posisi Alfa yang kuat di pasar domestik, jelas akan memperkokoh posisi carrefour di pasar retail Indonesia. KPPU sebagai pengawas persaingan usaha di Indonesia menduga adanya kemungkinan Carrefour akan memonopoli pasar Retail Indonesia.

Jika memang benar terjadi monopoli, maka memunculkan potensi gulung tikar bagi pengusaha domestik, bahkan lebih jauh akan mengkanibalisasi pasar tradisional. AC Nielsen mengemukakan dari tahun ke tahun mulai 2000 pangsa pasar pasar retail tradisional terus menurun. Pada awal 2000 pangsa pasar tradisional 78,3% dan makin berkurang menjadi 70,5% di tahun 2005. Makin mengguritanya Carrefour patut diwaspadai akan mengganggu "wong cilik" yang bekerja pada pasar tradisional. Ditambah adanya pergeseran sosial ekonomi. Di mana awalnya supermarket hanya untuk kalangan "A Consumers" (Konsumen Kelas Atas), namun sekarang merambah ke "B and C Consumers" (Konsumen menengah bawah). Di sisi lain infrastruktur pasar tradisional yang tidak jua diperbaiki sedangkan Hipermarket yang bersemboyan "Choice and quality for everyone" ini menawarkan kenyamanan lebih dengan harga yang murah.

## **Persaingan Usaha**

Fenomena kebangkitan bisnis retail sebenarnya sudah terlihat sejak pertengahan tahun 1990an. Survei yang dilakukan Nielsen menunjukkan bahwa jumlah pasar tradisional di Indonesia sebanyak 1,7 juta atau sebesar 73% dari keseluruhan pasar yang ada. Dan sisanya sebanyak 27% berupa retail pasar modern, yang lebih mengejutkan adalah survey yang dilakukan FAO (2006) yang menyatakan bahwa antara tahun 1997 hingga 2005, bisnis retail meningkat hampir 30% dengan pertumbuhan mencapai 15% untuk retail modern dan 5% untuk pasar tradisional. Hal tersebut menunjukkan terjadinya pergeseran dari pasar rakyat menjadi pasar modern. Tingkat pertumbuhan yang berbeda jauh tersebut, makan akan membuat pasar tradisional tersingkir. Nielsen dalam perhitungannya menyebutkan bahwa eliminasi pasar tradisional setiap tahunnya sebesar satu 1,5%.

Padahal, peran sektor pasar tradisional sangat strategis dalam menyerap tenaga kerja, berdasarkan data Sensus Ekonomi BPS tahun 2006, jumlah pasar tradisional mencapai 10 juta. Selain itu, pasar tradisional paling sering dikunjungi pembeli Indonesia sebanyak 25 kali/bulan lebih besar jika dibandingkan dengan pasar tradisional di India yang hanya dikunjungi 11kali/bulan. Pasar tradisional juga memberi kemudahan bagi konsumen dengan kemudahan akses bagi pemasok kecil termasuk petani. Dan yang terakhir, keunggulan pasar basah tradisional: tawar menawar, barangnya segar dan dekat dengan rumah.

Fenomena yang terjadi memang menunjukkan bahwa semakin tinggi populasi kemiskinan maka akan semakin banyak bermunculnya pasar tradisional. Di lain pihak semakin tinggi pendapatan rata-rata masyarakat per kapita, maka semakin besar kelompok konsumen menengah ke atas dan pola konsumen juga dengan sendirinya akan berubah ke pasar modern yang fisiknya jauh lebih baik dibandingkan pasar tradisional seperti kenyamanan, keamanan, kebersihan dan parkir yang luas. Survei yang dilakukan CESS (1998) bahwa tempat yang lebih nyaman merupakan faktor utama dari konsumen dalam memilih pasar, kemudian baru harga, dan kebebasan untuk melihat-lihat pada posisi ketiga.

## **Tantangan-Tantangan Pasar Modern**

Ke depan, pasar modern yang selama ini menunjukkan kinerja yang sangat baik, menghadapi beberapa tantangan. Salah satu tantangan terbesar adalah potensi perlambatan laju pertumbuhan revenue sebagai dampak dari perlambatan perekonomian yang diakibatkan oleh krisis global. Saat ini, daya beli masyarakat sudah mulai terganggu akibat terjadinya perlambatan perekonomian. Kedepannya, daya beli masyarakat diperkirakan akan terus menurun. Namun sebagai bisnis yang memperdagangkan kebutuhan pokok masyarakat, Pasar Modern diperkirakan masih dapat bertumbuh, walaupun tidak sepesat tahun-tahun sebelumnya. Jika pada 2004 - 2008 revenue Pasar Modern bertumbuh rata-rata 20% per tahun, maka pada 2009 hingga 2010, saat dampak negatif krisis ke sektor riil mencapai puncaknya, revenue Pasar Modern diperkirakan bertumbuh hanya pada kisaran 5-10%. Tetapi, seiring membaiknya perekonomian global, maka pada 2011 pertumbuhan revenue diperkirakan akan kembali mendekati laju pertumbuhan sebelum krisis global terjadi.

Selain itu, perkembangan retail modern masih banyak terkendala, antara lain tingkat suku bunga yang tinggi, dan perizinan yang masih berbelit-belit dan juga persepsi negatif tradisional dan modern masih menjadi kendala tersendiri. Seharusnya pasar tradisional dimodernkan karena konsumen terus berubah, arus informasi sangat pesat dan transparan. Pedagang retail tradisional seperti warung perlu mendapat pembinaan sehingga bisa tetap hidup dan minimarket juga berjalan. Kebanyakan pedagang retail tradisional tidak memiliki kemampuan manajemen retail. Padahal setiap hari banyak produk baru, lalu bagaimana membuat display, rotasi barang, pasokan yang tidak rutin, serta sikap disiplin, hingga modal habis.

Sementara itu, Komisaris Alfamart, Djoko Susanto, menuturkan, mau tidak mau Indonesia memang harus menghadapi AEC pada 2015. Nantinya, lanjutnya, pola belanja akan berkembang terus, begitupun dunia usaha. "Kalau tidak ikuti AEC. akan ketinggalan kereta. Indonesia harus mengikuti zaman." ujar Djoko. Yang perlu diwaspadai adalah retail asal China akan semakin agresif untuk berinvestasi di Indonesia.

Tantangan lainnya datang dari sisi regulasi. Fakta bahwa Pasar Tradisional semakin terhimpit, terlihat dari semakin tergerusnya pangsa revenue Retail Tradisional dan semakin sepiunya pasar-pasar tradisional, membuat pemerintah mengeluarkan beberapa ketentuan yang mengatur harmonisasi antara Pasar Modern dengan Retail Tradisional.

Tabel 9: Beberapa Regulasi Pemerintah Yang Dipandang Menghambat Oleh Peritel Pasar Modern

REGULASI	KETETAPAN YANG DIPANDANG MENGHAMBAT	ALASAN
<b>REGULASI TINGKAT NASIONAL</b>		
Peraturan Presiden no 112 th 2007 dan Peraturan Menteri Perdagangan no. 53 th 2008 tentang Penataan dan Pembinaan Pasar Tradisional, Pusat Perbelanjaan & Toko Modern	<ul style="list-style-type: none"> <li>• Lokasi Ritel Modern selain Minimarket harus mengacu pada Rencana Tata Ruang Wilayah Kota/Kabupaten (RTRWK) <u>DAN</u> Kota / Kabupaten yang belum memiliki RTRWK dilarang memberikan izin pembangunan ritel modern.</li> <li>• Pendirian Ritel Modern wajib memperhatikan jarak dengan Pasar Tradisional yang telah ada.</li> <li>• <i>Trading Term</i> yang diterapkan oleh Ritel Modern kepada Pemasok harus mengikuti syarat: <ul style="list-style-type: none"> <li>- Peritel modern tidak bisa meminta <i>Regular Discount</i> jika pemasok memberlakukan harga netto yang dipublikasikan ke semua toko modern.</li> <li>- <i>Fixed Rebate</i> (potongan harga dari Pemasok ke Toko Modern tanpa dikaitkan dengan target penjualan), hanya dapat diberikan secara periodik 3 bulan, maksimum 1%.</li> <li>- <i>Conditional Rebate</i> (potongan harga yang diberikan oleh pemasok terkait target penjualan) dengan ketentuan: <ul style="list-style-type: none"> <li>• Jika penjualan mencapai 100% dari target, mendapat potongan harga maksimal 1%</li> <li>• Jika penjualan mencapai 101% - 115%, maka kelebihanannya mendapat discount maks 5%</li> <li>• Jika penjualan &gt; 115% target, maka kelebihanannya mendapat discount maks 10%.</li> </ul> </li> </ul> </li> </ul>	Dipandang menghambat karena: <ul style="list-style-type: none"> <li>- Membatasi lokasi pendirian peritel modern</li> <li>- Membuat hubungan bisnis antara peritel modern dengan pemasoknya tidak fleksibel karena menetapkan secara spesifik <i>trading term</i>.</li> </ul>
<b>REGULASI TINGKAT DAERAH (KHUSUS DKI JAKARTA)</b>		
Perda DKI Jakarta no. 2 th 2002 mengenai Jarak antara Pasar Modern dengan Pasar Tradisional yang telah ada sebelumnya	<ul style="list-style-type: none"> <li>- Jarak antara Peritel Modern seluas 100-200m2 dengan Pasar Tradisional minimal 0,5 km</li> <li>- Jarak antara Peritel Modern seluas 200-1000m2 dengan Pasar Tradisional minimal 1 km</li> <li>- Jarak antara Peritel Modern seluas 1000-2000m2 dengan Pasar Tradisional minimal 1,5 km</li> <li>- Jarak antara Peritel Modern seluas 2000-4000m2 dengan Pasar Tradisional minimal 2 km</li> </ul>	Peraturan-peraturan dan draft regulasi ini dipandang sangat membatasi ruang gerak peritel Pasar Modern.
Instruksi Gubernur no 115 / 2006	Penundaan perizinan pendirian minimarket di wilayah DKI Jakarta.	
Draft Regulasi	<ul style="list-style-type: none"> <li>• Terhitung sejak tahun 2009, izin usaha ritel modern seluas &gt; 5000m2 diberikan hanya jika berada di gedung pusat perbelanjaan/mall</li> <li>• Ijin usaha ritel modern yang berlokasi di gedung tersendiri (<i>stand alone</i>) tidak akan diperpanjang.</li> </ul>	

Sumber: Warta Ekonomi, INDEF (Dampak Ekonomi Keberadaan Hypermarket terhadap Pasar Tradisional)

Tidak disangkal, Pasar Modern memang merupakan salah satu format retail yang mengalami pertumbuhan yang sangat baik dalam 5 tahun terakhir ini. Namun kedepannya, industri ini menghadapi tantangan yang cukup besar seperti potensi penurunan laju pertumbuhan akibat krisis global, dan juga regulasi yang oleh peretail Pasar Modern, dipandang kurang bersahabat bagi mereka. Selain itu, Pasar Modern juga menghadapi isu-isu sosial seperti dugaan pelanggaran terhadap aturan zonasi, melakukan praktek monopoli pasar, serta beberapa isu-isu lainnya. Isu-isu pelanggaran tersebut tentu berdampak buruk bagi Pasar Modern. Karena itu, Pasar Modern hendaknya mampu menepis isu-isu tersebut dengan meningkatkan kepatuhan terhadap regulasi yang telah ditetapkan. Peraturan yang telah dibuat untuk mengatur harmonisasi antara peretail Pasar Modern dan Retail Tradisional hendaknya ditanggapi bijak oleh segenap pihak terkait agar tujuan pemerintah mewujudkan harmonisasi antara segenap pihak yang terkait dalam industri retail di Indonesia, dapat terealisasi.

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## **Economic Growth in East Java, Indonesia: A Geweke Causality Analysis**

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### **Abstract**

*This article presents a causality analysis of output growth in East Java, Indonesia's second most competitive province after the capital city, Jakarta. We identify three variables which have stood out prominently for East Java: high output growth in the service sectors, a flexible labour market, and extensive infrastructure. Using a methodology developed by Geweke (1982), we measure the direction of causal effects between the three variables. Our findings confirm existing theories and research which argue that output growth is affected by the extent of infrastructure and quality of labour market. Such findings also support various calls for Indonesia to improve its infrastructure and labour market policies, and present East Java as a case from which lessons could be drawn for other Indonesian provinces.*

**Keywords:** Geweke Causality; Economic Growth; Infrastructure; Labour Market; Competitiveness; East Java; Indonesia.

**JEL Classification:** C32, J21, H54, O10

### **1. Introduction**

The province of East Java in Indonesia has fared favourably for economic competitiveness for the past two decades (Oxford Business Group 2014a; World Bank 2011; Bowring 2015). The competitiveness rankings of 33 Indonesian provinces over the years produced by Asia Competitiveness Institute (ACI) for instance has also consistently ranked the province in second place, just below the Special Capital Region of Jakarta (See Tan et al. 2013 and Tan et al. 2015). Similar studies also confirm the presence of a favourable business and investment climate in East Java (Partnership for Governance Reform 2013), as well as in many cities and regencies within the province (KPPOD and Asia Foundation 2011).

Considering the extent of decentralization that Indonesia has adopted since 2001 (Hill 2014; Ahmad and Mansoor 2002), it is important to understand the processes underlying economic development at the sub-national level. East Java, in particular, is interesting due to its large market (its 37.5 million population in 2010 is equivalent to California's), a sizeable economy (its Gross Regional Domestic Product of about USD 93.14 billion in 2013 is equivalent to 15% of Indonesia's and comparable to that of Ecuador's), and fast growing (its economy grew by 6.22% on average between 2004 and 2013).<sup>1</sup>

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<sup>1</sup> Data on East Java and Indonesia, unless otherwise stated, is sourced from the Central Statistics Agency (*Badan Pusat Statistik* or BPS), accessible through [bps.go.id](http://bps.go.id).

But East Java's growth story is also one about industrial restructuring. The province's economy experienced a long transition from agriculture to manufacturing between 1920 to 1970, but then quickly gained manufacturing competitiveness for a couple of decades (Dick 1995). From the 1990s onwards, manufacturing started to slow down (McMichael 1998; Santosa and McMichael 2004; Irawan 2011), and by 2004, services became the largest component of the province's GRDP (BPS, n. d.).

Despite its oft-cited achievements in the media, business, and policy reports, not many academic studies have been conducted to understand the causes of growth in this province. Considering East Java's potential to pull-up or drag-down Indonesia's overall growth simply due to its size, more research into the factors that may contribute to the province's competitiveness is welcome.

In this light, this paper presents a causality analysis of East Java's output growth using the Geweke causality methodology that identifies and measures the different directions of causal effects between two or more time-series vectors, including the extent to which the causal effects take place instantaneously between the vectors (Geweke 1982).<sup>2</sup> The Geweke causality analysis intuitively helps us to understand and measure the linear dependence and feedback between multiple time series variables. To that effect, we perform both a bi-variety as well as multi-variety causality analysis.

Earlier studies on economic governance in Indonesia's regions have noted that East Java's vibrant business environment benefits from the presence of an ample supply of labour market and favourable industrial relations as well as relatively robust infrastructure (KPPOD and Asia Foundation 2011; World Bank 2011; ILO 2013). The two variables for East Java, namely labour market and infrastructure conditions, are tested against GRDP growth in the services sector, to possibly identify causal relationships among the variables. To preview the main empirical findings, we find our Geweke causality analysis to confirm the general theories and past empirical literature which argue that output growth is affected by good infrastructure and a flexible labour market. These findings further emphasize the calls for Indonesia to improve relevant policies (Schwab and Sala-i-Martin 2014; Oberman et al. 2012), and presents East Java as a case which could be emulated by other sub-national entities in Indonesia.

The rest of the paper is structured as follows: Section 2 begins with outlining briefly the key socio-economic characteristics specifically focusing on the competitiveness profile of East Java. This will form the basis for developing empirically testable hypotheses that we test in the paper. Section 3 details the data and methodology used. Specifically, it furnishes the details of the Geweke causality analysis and the empirical strategy. The empirical results are discussed in Section 4, while Section 5 concludes with a brief note on policy implications.

## **2. Background and Hypotheses**

East Java is the second most populous province in Indonesia, after West Java. In 2011, it had a population of 37.7 million (about 15% of the country's population). East Java's capital, Surabaya, with a population of 2.7 million in 2011, is Indonesia's second largest city after Jakarta. The Surabaya metropolitan area is home to 9.1 million people or almost a quarter of the province's population. Almost half (47.5%) of the province's population live in urban areas (BPS Kota Surabaya 2014).

East Java has the second highest GRDP in the country, only slightly below Jakarta. In 2011, the province's GRDP was Rp 884,143 billion, while Jakarta's was Rp 982,540 billion current market prices (BPS, n. d.). In fact, East Java has the second highest GRDP among 33 Indonesian provinces for each of the three economic sectors. For agriculture and mining it is second after East Kalimantan, for manufacturing it is second after West Java, and for trade and services it is second after DKI Jakarta. This shows that East Java is a well-rounded competitive province with good performance in multiple aspects of the economy. East Java is also Indonesia's second largest source of non-oil & gas exports after Jakarta. The Surabaya metropolitan area is home to the country's second largest cluster of industrial zones (after that located in Jakarta metropolitan area). Other notable clusters of industrial zones in Indonesia are found in Riau Islands province (especially Batam), West Java and Banten provinces (especially the areas surrounding Jakarta and Bandung), and Central Java province (especially those along the Trans-North Java highway).

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<sup>2</sup> Geweke (1982) expanded the methodology of causality analysis developed earlier by Granger (1969) and Sims (1972). See Appendix 1 for a technical description of the methodology.



Despite East Java's favourable economic performance, there is plenty of room for improvement, especially in reducing poverty rate and achieving better human development. East Java's poverty rate was at 13.8% in 2011, while its Human Development Index was ranked 17<sup>th</sup> out of 33 Indonesian provinces. This stands in contrast with the province's economic achievements highlighted earlier, and has prompted the World Bank to propose a growth diagnostic to enable a more inclusive growth in East Java (World Bank 2011).

Several studies including the competitiveness analysis by Tan et al. (2013, 2015) have found that East Java shows notable strengths in dimensions such as Regional Economic Vibrancy, Physical Infrastructure, and Labour Market Flexibility for comparison of East Java's scores with the nationwide median scores). East Java obtained the highest score nationwide for Labour Market Flexibility (Tan et al. 2015), having the largest number of labour force and employment, the lowest unemployment rate, and the second lowest minimum wage among Indonesia's provinces in 2011. Furthermore, surveys conducted separately with business owners, government, and academics in 2013 confirm that labour relations in East Java are harmonious (Tan et al. 2015).

(Insert Figure 1 here)

The analysis also found East Java with the highest score for Physical Infrastructure. Aside from having the highest density of paved roads nationwide, the province's Tanjung Perak seaport in Surabaya is Indonesia's second busiest after Jakarta's Tanjung Priok, and its Juanda airport just outside of Surabaya is the second busiest for domestic travels after the Soekarno-Hatta Airport just outside of Jakarta. Surveys with business owners, government, and academics in 2013 also confirm a positive perception towards the quality of infrastructure in the province in general (Tan et al. 2015).

East Java's economic development has also been characterized by a strong and steadily growing tertiary (services) sector, which has grown substantially higher than the primary and secondary sectors. This can be considered as a restructuring of the economy from one that relies on agriculture and manufacturing to one that thrives on services. The proportion of East Java's GRDP generated by the services industry has risen from 42.9% at the beginning of 2000 to 49.3% at the end of 2011. Meanwhile, the primary sector's contribution to East Java's GRDP has decreased from 21.7% to 17.6% during the same period (BPS, n. d.). **Error! Reference source not found.** 2 shows the increasing proportion of the tertiary sector against the relative decrease of the primary and secondary sectors.

By breaking down the tertiary sector, we can see that the Trade, Hotels and Restaurants sub-sector has been growing the fastest (BPS, n. d.). 3, between 2000 and 2011 the GRDP for this sub-sector has risen by more than two-folds in real terms: from Rp 49,475 billion to Rp 116,645 billion (in constant 2000 prices). Meanwhile, the other service sub-sectors combined also rose in similar fashion: from Rp 45,605 billion to Rp 92,378 billion for the same time period. The Trade, Hotels and Restaurants sub-sector currently produces the most economic output, overtaking manufacturing in 2004.

(Insert Figure 2 here)

These arguments are consistent with the literature. Economists since the time of Adam Smith have identified a theoretical link between infrastructure and economic development. Infrastructure can be seen as public capital that serves as a factor of production. It also allows other factors of production to be utilized more efficiently (Serven 2010; Gramlich 1994), ultimately leading to higher productivity and output growth (Sanchez-Robles 1998; Esfahani and Ramirez 2003; Straub and Terada-Hagiwara 2011; Hashimzade and Myles 2010). Transport infrastructure, in particular, facilitates economic integration (Asian Development Bank 2009; Bhattacharyay, Kawai, and Nag 2012; Brooks and Menon 2008; Sahoo and Dash 2012) and electricity consumption was found to have significant correlation with long-term GDP growth (Aslan 2014; Abdoli, Gudarzi Farahani, and Dastan 2015; Narayan and Smyth 2009; Apergis and Payne 2011).

(Insert Figure 3 here)

Another factor of production which is argued to have direct linkage to output is labour. A flexible labour market enables dynamic allocation of manpower that better responds to changing production demand (Giersch 1985; Busse and Hefeker 2009; Dutt, Charles, and Lang 2015). An equilibrium unemployment and job vacancies contributes to optimal production, and is dependent on the presence of an effective a “matching function” and efficient bargaining between workers and firms (Pissarides 2000; Lisi 2011; Roa, Saura, and Vázquez 2011). The availability of workers who are well-trained and engage with employers in harmonious industrial relations provides the services sector with the needed human resources. The foregoing discussion leaves us with some empirically testable hypotheses. Considering the theoretical links which has been proposed between the strengths of East Java, it is hypothesized that flexible labour market and extensive infrastructure contributes to East Java’s high growth in the services sector. We test this formally in the remainder of the paper.

### 3. Methodology and Data

#### 3.1. Geweke Causality Analysis

Complementary tests for the existence of unidirectional causality has been provided and Granger (1969) and Sims (1972). Subsequently, Geweke (1982) developed the concept further by including instantaneous (two-way) linear feedback between multiple time series. Although the determinants of a single economic variable are likely to be multi-dimensional, most applications found in the literature focus on bi-variety cases. The multi-variety causality test proposed by Geweke (1982) is essentially a test between two vectors of variables. The equivalence of linear dependence measures enables the conduction of a multivariate test which is as convenient as a vicariate test. Essentially, the idea of causality between multiple time series X and Y can be summarized as follows:

$$F_{X,Y} = F_{X \rightarrow Y} + F_{Y \rightarrow X} + F_{X,Y}$$

This means the measure of linear dependence between two series of variables ( $F_{X,Y}$ ) is the sum of the measures of linear feedback from the first series to the second ( $F_{X \rightarrow Y}$ ), linear feedback from the second series to the first ( $F_{Y \rightarrow X}$ ), and instantaneous linear feedback between the two series ( $F_{X,Y}$ ). The measures are non-negative and zero only when feedback (causality) of the relevant type is absent.

Like Granger (1969) and Sims (1972), Geweke’s causality analysis focused the attention on a wide-sense stationary, purely non-deterministic multiple time series  $Z = \{z_t, t \text{ real}\}$ . Therefore, the vector  $z_t$  can be expressed under the following autoregressive representation:

$$z_t = \sum_{s=1}^{\infty} B_s z_{t-s} + e_t$$

Where  $e_t$  is white noise and  $z_t$  can be partitioned into  $k \times 1$  and  $l \times 1$  sub-vectors  $x_t$  and  $y_t$ .

Geweke also showed that a canonical form for the wide-sense stationary time series  $z_t = (x_t, y_t)$  is of the form:

$$x_t = \sum_{s=1}^{\infty} E_{1s} x_{t-s} + u_{1t} \text{var}(u_{1t}) = \Sigma_1 \quad (1)$$

$$x_t = \sum_{s=1}^{\infty} E_{2s} x_{t-s} + \sum_{s=1}^{\infty} F_{2s} y_{t-s} + u_{2t} \text{var}(u_{2t}) = \Sigma_2 \quad (2)$$

$$x_t = \sum_{s=1}^{\infty} E_{3s} x_{t-s} + \sum_{s=0}^{\infty} F_{3s} y_{t-s} + u_{3t} \text{var}(u_{3t}) = \Sigma_3 \quad (3)$$

$$x_t = \sum_{s=1}^{\infty} E_{4s} x_{t-s} + \sum_{s=-\infty}^{\infty} F_{4s} y_{t-s} + u_{4t} \text{var}(u_{4t}) = \Sigma_4 \quad (4)$$

$$y_t = \sum_{s=1}^{\infty} G_{1s} y_{t-s} + v_{1t} \text{var}(v_{1t}) = \Gamma_1 \quad (5)$$

$$y_t = \sum_{s=1}^{\infty} G_{2s} y_{t-s} + \sum_{s=1}^{\infty} H_{2s} x_{t-s} + v_{2t} \text{var}(v_{2t}) = \Gamma_2 \quad (6)$$

$$y_t = \sum_{s=1}^{\infty} G_{3s} y_{t-s} + \sum_{s=0}^{\infty} H_{3s} x_{t-s} + v_{3t} \text{var}(v_{3t}) = \Gamma_3 \quad (7)$$

$$y_t = \sum_{s=1}^{\infty} G_{4s} y_{t-s} + \sum_{s=-\infty}^{\infty} H_{4s} x_{t-s} + v_{4t} \text{var}(v_{4t}) = \Gamma_4 \quad (8)$$

The measure of linear feedback from Y to X is defined as:

$$F_{Y \rightarrow X} = \ln (|\Sigma_1| / |\Sigma_2|) \quad (9)$$

The measure  $F_{Y \rightarrow X}$  is always non-negative and takes the value of zero only if the linear feedback running from Y to X is absent. Symmetrically, the measure of linear feedback from X to Y is defined as:

$$F_{X \rightarrow Y} = \ln (|\Gamma_1| / |\Gamma_2|) \quad (10)$$

The instantaneous feedback is defined as:

$$F_{X,Y} = \ln (|\Gamma_2| \times |\Sigma_2| / |Y|) \quad (11)$$

Where:

$$\Upsilon = \text{var} \begin{pmatrix} u_{2t} \\ v_{2t} \end{pmatrix} = \begin{bmatrix} \Sigma_2 & C \\ C' & \Gamma_2 \end{bmatrix}$$

Thus, the measure of linear feedback between two vectors  $X$  and  $Y$  can be decomposed into the sum of measure of linear feedback from  $X$  to  $Y$ , the measure of linear feedback from  $Y$  to  $X$ , and the instantaneous linear feedback between the two vectors. That is:

$$F_{X,Y} = F_{X \rightarrow Y} + F_{Y \rightarrow X} + F_{X,Y} \quad (12)$$

It is useful to note that the absence of a particular causal ordering implies that one of these feedback measures is equal to zero.

Geweke also proved that the equations in the following set are equivalent:

$$F_{X,Y} = \ln(|\Sigma_1| \times |\Gamma_1| / |\Upsilon|) = \ln(|\Sigma_1| / |\Sigma_4|) = \ln(|\Gamma_1| / |\Gamma_4|) \quad (13)$$

$$F_{X \rightarrow Y} = \ln(|\Gamma_1| / |\Gamma_2|) = \ln(|\Sigma_3| / |\Sigma_4|) \quad (14)$$

$$F_{Y \rightarrow X} = \ln(|\Sigma_1| / |\Sigma_2|) = \ln(|\Gamma_3| / |\Gamma_4|) \quad (15)$$

$$F_{X,Y} = \ln(|\Gamma_2| \times |\Sigma_2| / |\Upsilon|) = \ln(|\Sigma_2| / |\Sigma_3|) = \ln(|\Gamma_2| / |\Gamma_3|) \quad (16)$$

The distribution of statistics and the calculation of their respective confidence intervals can be found in Appendix 1.

### 3.2. Data Description

The dependent variable selected for the Geweke analysis is GRDP growth in the services sector, namely the Change in GRDP in the Trade, Hotels and Restaurants sub-sector (GDP, for shorthand). This variable is chosen to represent the growth of East Java's services sector. Here the change ( $\Delta$ ) is derived from first order difference. Of the two independent variables, one is related to labour market condition, namely Employment Rate (measured in the percentage of labour force who are employed), and the other is related to infrastructure condition, namely Access to Electricity (measured in percentage of households with access to electricity). For all three variables, the data is sourced from the Indo-Dapoer database maintained by the World Bank.<sup>3</sup> To conduct the Geweke Analysis, a time-series data with at least 30 data points is needed for each indicator. Considering two important issues, (1) limited availability of data at the province level that goes back 30 years, and (2) the presence of several structural breaks in Indonesia's political economic history, we used quarterly (instead of yearly) data, for a period of 11 years (2000 until 2011). This provides us with 44 data points (quarters) for each indicator.

Since the data was only available on a yearly basis (11 data points for each indicator), we converted the yearly data into quarterly data. The method of conversion was "Quadratic Match Sum" for the Change in GRDP in Trade, Hotel and Restaurant, and "Quadratic Match Average" for both Employment Rate and Access to Electricity.

The data shows that East Java has had a relatively high employment rate (EMP, for shorthand): consistently over 90% from the first quarter of 2000 until the fourth quarter of 2011. Some fluctuations occurred between 2001 and 2005, but overall we can safely say that from 2005 onwards East Java's employment rate has been growing steadily, reaching a high of 96% in the last quarter of 2011. The data also shows relatively high and increasing access of electricity (ELEC, for shorthand) throughout the province between 2000 and 2011. East Java already had over 93% of its households connected to the state electricity grid in 2000. The coverage has kept on increasing since then until currently almost all of the households (over 99%) are covered.

### 4. Empirical Results

The Geweke analysis is conducted in both bi-variety and multi-variety approaches. In the bi-variety analysis, correlation between the dependent variable ( $X$ ) and independent variables ( $Y_1$  and  $Y_2$ ) were tested separately.

This means that Geweke tests were conducted between  $X$  and  $Y_1$  as well as between  $X$  and  $Y_2$ , checking the extent of correlation in both directions ( $X$  to  $Y$  and  $Y$  to  $X$ ). Results of the bi-variety tests are presented in

**Table 1.**

<sup>3</sup> Indo-Dapoer stands for Indonesia Database for Policy and Economic Research. It can be accessed online through: <http://data.worldbank.org/data-catalog/indonesia-database-for-policy-and-economic-research>. Data used in this research was accessed in September of 2014.

First, we discuss the correlation between the change in GRDP in the Hotels, Trade and Employment sub-sector (GDP) and Employment Rate (EMP).

**Table 1** shows a significant total correlation between GDP and EMP in either direction ( $F_{x,y}$  is significant at 1% level for both directions). Most of the correlation takes place instantaneously between GDP and EMP ( $F_{x,y}$  is significant at 1% level for both directions). When looking at each direction, we find there were no significant correlation for both  $F_{x \rightarrow y}$  and  $F_{y \rightarrow x}$  when GDP was considered as X and EMP was considered as Y. We do, however, find a notable correlation (up to 10% level of significance) for  $F_{x \rightarrow y}$  when EMP was considered as X and GDP as Y. These suggest that GDP and EMP are significantly correlated, with most of the correlation taking place instantaneously between the two variables. However, there is also a possibility that a causal mechanism is taking place from EMP towards GDP.

Next, we discuss the correlation between the change in GRDP in the Hotels, Trade and Employment sub-sector (GDP) and Access to Electricity (ELEC). Similarly, we find a significant total correlation between GDP and ELEC in either direction ( $F_{x,y}$  is significant at 1% level for both directions). Most of the correlation takes place instantaneously between GDP and ELEC ( $F_{x,y}$  is significant at 1% level for both directions). When looking at each direction, we find no significant correlation for both  $F_{x \rightarrow y}$  and  $F_{y \rightarrow x}$  when ELEC was considered as X and GDP was considered as Y. We do, however, found a significant correlation (up to 5% level of significance) for  $F_{y \rightarrow x}$  when GDP was considered as X and ELEC as Y. These suggest that GDP and ELEC are significantly correlated, with most of the correlation taking place instantaneously. However, there is also a possibility of causal mechanism going from ELEC to GDP.

In multi-variety analysis, both the independent variables (Y1 and Y2, or EMP and ELEC) are aggregated (as Y) and its correlation with the dependent variable (X, or GDP) is tested. The multi-variety results are presented in **Table 2**.

**Table 2** shows that when EMP and ELEC were combined, we find a significant total correlation between X (GDP) and Y (aggregate of EMP and ELEC) at the 1% level of significance. Slightly more than half of that correlation (0.4348 over 0.8329, or 52.2%) takes place instantaneously, while 43.7% of the correlation (0.3640 out of 0.8329) takes place from Y going towards X. Both the instantaneous correlation and the correlation going from Y towards X are significant the 1% level of significance. The correlation going from X towards Y, however, is not significant.

These findings suggest in the case of East Java, both Employment Rate and Access to Electricity contribute to a growing GRDP in the Trade, Hotel and Restaurant sub-sector, but not the other way around. While instantaneous correlation between the dependent and independent variables are found, we also found correlation going from the independent variables (EMP and ELEC) towards the dependent variable (GDP). The direction of causality is not two-way, as we did not find a significant correlation going from the dependent variable (GDP) towards the independent variables (EMP and ELEC).

## 5. Conclusion and Policy Implications

As government officials attempt to revive Indonesia's growth level which has slowed down since 2014, it is important to better understand how growth has taken place in the country's major economic engines. This is a call for more sub-national analyses, and it corresponds with the country's decentralization policy (Hill 2014). The latest development of such policy is to re-strengthen the role of the province in coordinating various aspects at the supra-municipality level, including economic development (USAID 2009), as per Law No.12 of 2008.

In this context, this paper offered an empirical analysis of the determinants of growth in services sector of East Java using a Geweke causality framework. The Geweke causality analysis for East Java implies that both Access to Electricity and Employment Rate contribute positively to a growing GRDP in the Trade, Hotel, and Restaurant sub-sector, which helped the province to transition further into a service-based economy. This highlights the importance of both infrastructure and labour market conditions for economic development.

The quality of labour relations in East Java is generally favourable compared to that in many other provinces in Indonesia (Tan et al. 2013; Tan et al. 2015), especially in terms of employment opportunities, earnings for the employed, and bargaining (ILO 2013). However, more still could be done to improve the quality of the workforce.

The East Java provincial government is already taking promising steps by prioritizing the development of vocational education opportunities (ILO 2011; Abdullah 2014). Indonesia in general can improve its competitiveness by making the labour market more flexible, for example by easing hiring and firing requirements (World Bank 2014; Schwab and Sala-i-Martin 2014), but at the same time by providing better social security and public facilities (Republic of Indonesia 2004).

In terms of infrastructure, the national and provincial government have taken commendable steps in recent years by expanding the main seaport to Teluk Lamong, and developing new industrial zones such as those in Mojokerto and Gresik (Oxford Business Group 2014b; JIPE 2015). East Java, however, still faces challenges in terms of the development of technological infrastructure. Access to computers and the internet was relatively low and was ranked as average among Indonesia's 33 provinces (Tan et al. 2015).

To conclude, this research has aimed to contribute to fill the literature gap on Indonesia's second largest sub-national economy, and added value to the general literature on economic growth through time-series analysis. The analysis, however, faced challenges in terms of quality and availability of data. Lack of sufficient number of data points originating from formal sources led to the interpolation of yearly data into quarterly data, which perhaps affected data quality. Furthermore, by focusing on time series analysis of a small number of variables, omitted variable bias may be an issue. Further research on the issue would benefit greatly from a more consistent and frequent tracking of the relevant data by officials.

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**Appendix: The methodology of Geweke causality analysis**

*Distribution of Statistics*

Under the null hypothesis that there is no unidirectional causality running from Y to X:

i.e. if  $F_{Y \rightarrow X} = 0$ , then  $n \hat{F}_{Y \rightarrow X} \sim \chi^2(klp)$  (A1)

If  $F_{X \rightarrow Y} = 0$ , then  $n \hat{F}_{X \rightarrow Y} \sim \chi^2(klp)$  (A2)

If  $F_{X,Y} = 0$ , then  $n \hat{F}_{X,Y} \sim \chi^2(kl)$  (A3)

Since these tests are tests of nested hypotheses,  $\hat{F}_{Y \rightarrow X}$ ,  $\hat{F}_{X \rightarrow Y}$ , and  $\hat{F}_{X,Y}$  are asymptotically independent. The measure of linear feedback between X and Y,  $F_{X,Y}$ , can be tested at once:

If  $F_{X,Y} = 0$ .

$n \hat{F}_{X,Y} \sim \chi^2(kl(2p + 1))$  (A4)

**Confidence Interval**

The 95 percent confidence interval (CI) could be calculated approximately as follows:

For  $\hat{F}_{Y \rightarrow X}$ ,

$\left\{ \left[ \left( \hat{F}_{Y \rightarrow X} - \frac{klp-1}{3n} \right)^{1/2} - \frac{1.96}{\sqrt{n}} \right]^2 - \frac{2klp+1}{3n}, \left[ \left( \hat{F}_{Y \rightarrow X} - \frac{klp-1}{3n} \right)^{1/2} + \frac{1.96}{\sqrt{n}} \right]^2 - \frac{2klp+1}{3n} \right\}$  (A5)

For  $\hat{F}_{X \rightarrow Y}$ ,

$\left\{ \left[ \left( \hat{F}_{X \rightarrow Y} - \frac{klp-1}{3n} \right)^{1/2} - \frac{1.96}{\sqrt{n}} \right]^2 - \frac{2klp+1}{3n}, \left[ \left( \hat{F}_{X \rightarrow Y} - \frac{klp-1}{3n} \right)^{1/2} + \frac{1.96}{\sqrt{n}} \right]^2 - \frac{2klp+1}{3n} \right\}$  (A6)



For  $\hat{F}_{X,Y}$ ,

$$\left\{ \left[ \left( \hat{F}_{X,Y} - \frac{kl-1}{3n} \right)^{1/2} - \frac{1.96}{\sqrt{n}} \right]^2 - \frac{2kl+1}{3n}, \left[ \left( \hat{F}_{X,Y} - \frac{kl-1}{3n} \right)^{1/2} + \frac{1.96}{\sqrt{n}} \right]^2 - \frac{2kl+1}{3n} \right\} \quad (A7)$$

For  $\hat{F}_{X,Y}$ ,

$$\left\{ \left[ \left( \hat{F}_{X,Y} - \frac{kl(2p+1)-1}{3n} \right)^{1/2} - \frac{1.96}{\sqrt{n}} \right]^2 - \frac{2kl(2p+1)+1}{3n}, \left[ \left( \hat{F}_{X,Y} - \frac{kl(2p+1)-1}{3n} \right)^{1/2} + \frac{1.96}{\sqrt{n}} \right]^2 - \frac{2kl(2p+1)+1}{3n} \right\} \quad (A8)$$

**Tables and Figures**

**Table 1: Estimated measures of bi-directional feedbacks Change of GRDP in Trade, Hotels and Restaurants (GDP), Employment Rate (EMP) and Access to Electricity (ELEC) for East Java, Indonesia, 2000-2011<sup>a</sup>**

Economic aggregates		$H_0(F_{x,y} = F_{x \rightarrow y} + F_{y \rightarrow x} + F_{x,y})$			
$x$	$y$	$F_{x,y}$	$F_{x \rightarrow y}$	$F_{y \rightarrow x}$	$F_{x,y}$
GDP	EMP	0.4202*** (0.0029)	0.0168 (0.6974)	0.1049 (0.1049)	0.2985*** (0.0003)
EMP	GDP	0.4450*** (0.0018)	0.1234* (0.0704)	0.0230 (0.6097)	0.2985*** (0.0003)
GDP	ELEC	0.4184*** (0.0030)	0.0013 (0.9726)	0.1541** (0.0364)	0.2630*** (0.0008)
ELEC	GDP	0.3502** (0.0101)	0.0860 (0.1573)	0.0012 (0.9746)	0.2630*** (0.0008)

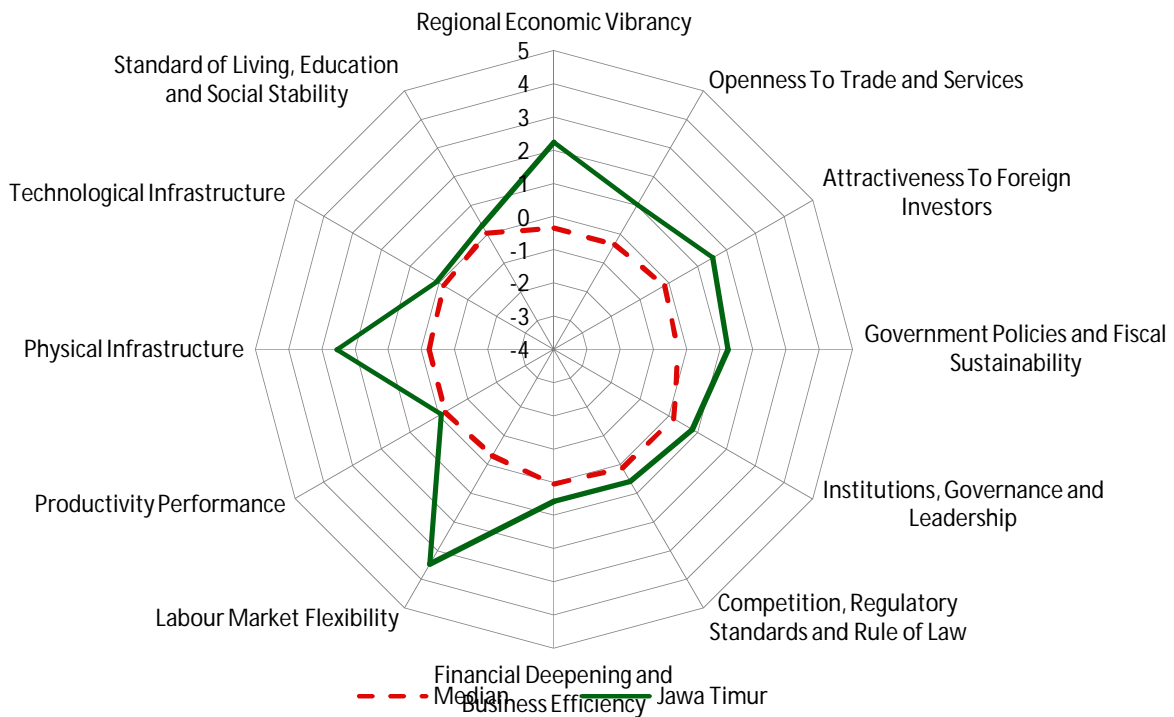
<sup>a</sup> \*, \*\* and \*\*\* denote 10%, 5% and 1% level of significance, respectively.  
Source: Authors

**Table 2: Estimated measures of multi-directional feedback between Change of GRDP in trade, hotel and restaurant (GDP), Employment Rate (EMP) and Access to Electricity (ELEC) for East Java, Indonesia, 2000-2011<sup>a</sup>**

Economic aggregates		$H_0(F_{x,y} = F_{x \rightarrow y} + F_{y \rightarrow x} + F_{x,y})$			
$x$	$y$	$F_{x,y}$	$F_{x \rightarrow y}$	$F_{y \rightarrow x}$	$F_{x,y}$
GDP	EMP	0.8329 *** (0.0001)	0.0341 (0.8326)	0.3640*** (0.0035)	0.4348*** (0.0001)
	ELEC				

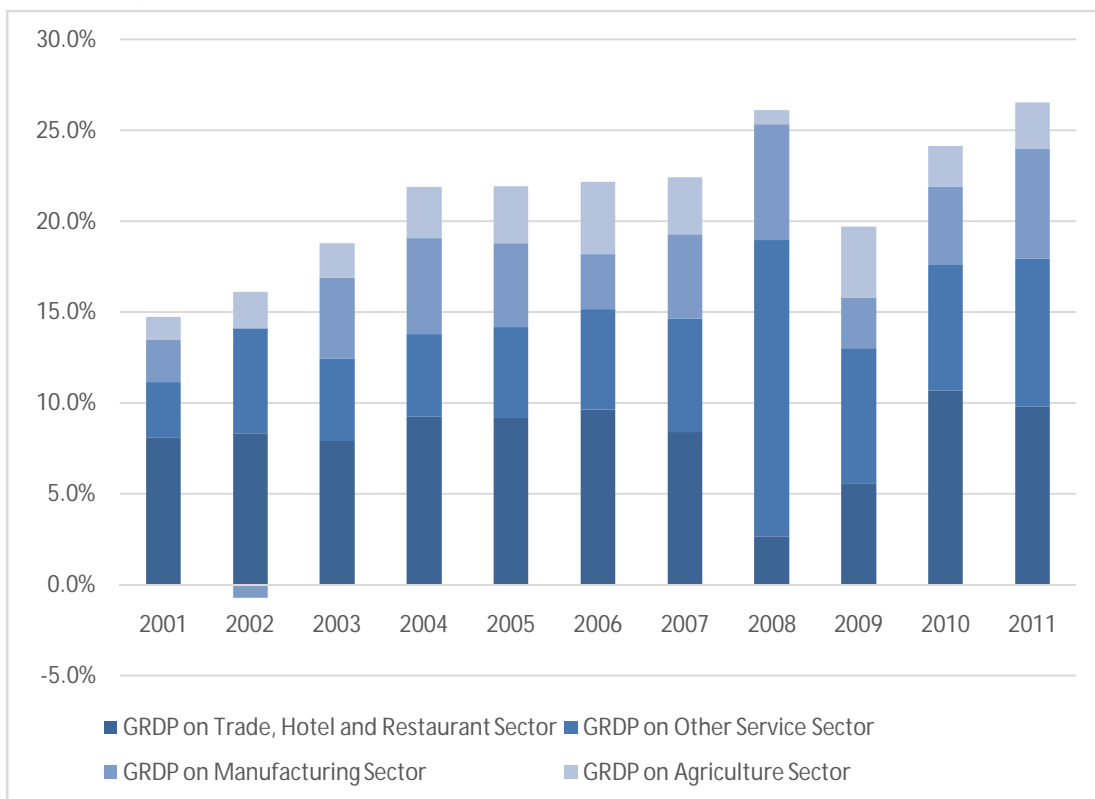
<sup>a</sup> \*, \*\* and \*\*\* denote 10%, 5% and 1% level of significance, respectively.  
Source: Authors

**Figure 1: East Java’s “Median Competitiveness Web” compares the standardized scores obtained by East Java to the median scores obtained by 33 Indonesian provinces across 12 competitiveness sub-environments**



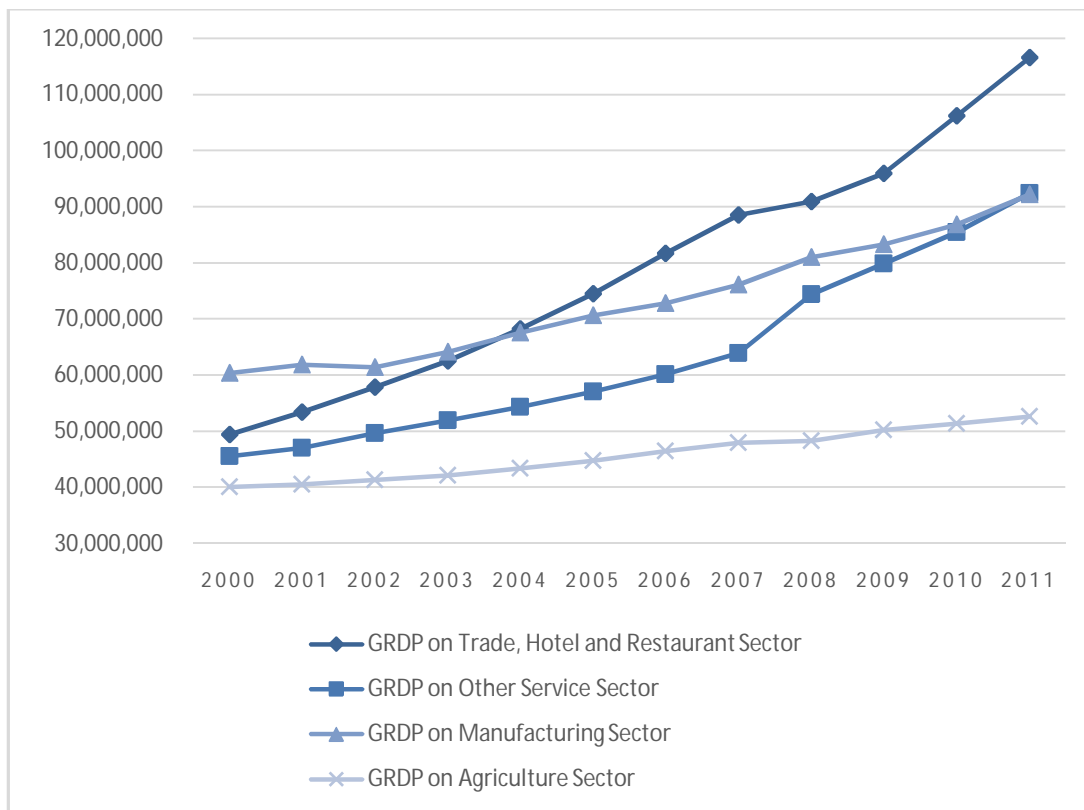
Source: Tan et al. 2015

**Figure 2: East Java’s GRDP Growth Rate by Major Sectors: 2000-2011**



Source: Authors based on Indo DAPOER data

**Figure 3: East Java Gross Regional Domestic Product (GRDP) by Major Sectors: 2000-2011**



**Source:** Authors based on Indo DAPOER data

# How Business Enterprises Use Technology: Extending the Demand-Side Turn

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JOANNE YATES

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Today, we are all aware of the importance of technology to modern business, including process technologies as well as consumer and industrial products incorporating technology. The significant role of technology in business (and vice versa) is not, of course, new. Although the history of technology and business history have different professional organizations and often focus on different theoretical and empirical phenomena, the large number of historians who work at the intersection of the two today reflects the importance of each to the other over a much longer time period.<sup>1</sup> Yet historians of both types still too often give short shrift to the role of business enterprises as technology users as well as to the actual business use of technology.

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1. Two of the last five Business History Conference presidents (Philip Scranton and I) work at this intersection, as does the current president-elect of the Society for the History of Technology (Steven Usselman) and its most recent past-president (David Hounshell). Many other scholars are active members and officers of both associations.

During the time I spent researching and writing my recent book, *Structuring the Information Age: Life Insurance and Technology in the Twentieth Century*, I became increasingly aware of two issues around technology users and technology use in business. First, although my business school colleagues are quite familiar and comfortable with the notion of “user firms,” this terminology has received an odd reaction from some historians, who typically see technology users as individuals, not as firms. Second, in studying the transition from tabulator use to computer use in my chosen user industry, life insurance, I was, as I expected, learning a great deal about the development path of commercial computer technology and about the dynamics of the vendor industry. Yet even though I saw my book as addressing a gap in the history of computing, the Library of Congress originally catalogued it under the history of life insurance, omitting any mention of computing.<sup>2</sup> Clearly, these cataloguers, like many historians, did not fully understand the notion of studying firms and an entire industry as *users* of a technology that they did not, in the traditional sense, invent or develop. Indeed, both business historians and historians of technology have traditionally focused on inventors and manufacturers of technology, not on its users.

Recently, scholars of technological innovation, in both business history and the history of technology, have ceased to focus solely on inventors and producers and have increasingly taken up the demand side of the story, studying the *users* of technology artifacts, including their role in innovation. These users, however, are typically seen as individuals. Relatively rarely have firms and other enterprises—with the exception of government or military organizations—been considered as users. In this essay, I argue that business historians as well as historians of technology would benefit from broadening the demand-side notion of technology users (or consumers as they are often cast, especially in business history) to include enterprises as well as individuals.

In addition, I suggest that the historical study of technological innovation in both subfields would benefit from extending its focus beyond *users* to studying technology *use*—or “technology-in-practice,” as my MIT colleague Wanda Orlikowski has put it.<sup>3</sup> Although scholars have recently focused increased attention on (individual) technology *users*, most have assumed that once the technology

2. The publisher was able to get “computing, history of” added to the entry.

3. Wanda J. Orlikowski, “Using Technology and Constituting Structures: A Practice Lens for Studying Technology in Organizations,” *Organization Science* 11, no. 4 (2000): 404–28.

stabilizes, examination of ongoing technology use is irrelevant; moreover, scholars who look at users or consumers typically focus their study on the period up to adoption or purchase rather than on the subsequent actual *use* of the acquired item. I will argue that studying technology use will help us better understand the early and ongoing influence of technology on firms and individuals, and these users' influences on the technology and on innovation in general.

Broadening the demand-side turn will also give our research added interest to many contemporary scholars of technology, especially those in business schools. Recently, an article entitled "Teaching History in Business Schools, 1982–2003," published in a management journal, drew attention to a drop in historical teaching in the business school setting.<sup>4</sup> The discussions of this article that occurred on the internet forum H-Business and elsewhere have all highlighted business history's need to maintain at least some relevance to management scholars to demonstrate the importance of business history to that curriculum, both for those of us who teach in business schools and for our students seeking jobs. Research on *business enterprises* as technology users and on the role of ongoing technology use resonates with work currently being done by many management scholars. Such a research perspective may offer business historians the opportunity to contribute to the history of business and technology, on the one hand, and to the contemporary management literature, on the other hand.

After discussing some assumptions about users and consumers that have evolved in the two historical fields, I will recommend that business historians (i) redefine *users* to include business enterprises and (ii) look at *use* in addition to users.

Although my focus in this paper is primarily on *technology* users, I believe that these general points may be extended to consumers more broadly, and I will briefly suggest how that might be done. Finally, I will discuss why we might want scholars of contemporary business to see history as relevant and how this approach may help us to portray it that way.

### Assumptions about Users

Traditional approaches to technology, in the history of both technology and business, focused on the source or *supply side* of technological

4. David van Fleet and Daniel Wren, "Teaching History in Business Schools, 1982–2003," *Academy of Management Learning and Education* 4, no. 1 (2005): 44–56.

innovation. Traditional history of technology, for example, studied inventors as heroic sources of innovation. Thomas P. Hughes played a major role in shifting that field's focus away from heroic inventors and inventions toward technological systems and system builders; indeed, his own work progressed from the biography of inventor Elmer Sperry in the 1970s to a study of large electrical systems in the 1980s.<sup>5</sup> Still, the field's focus remained on the supply side of such systems.

Similarly, business history traditionally focused on how firms *manufactured* and *distributed* goods and services. Business historians interested in technological innovation tended to focus more on the individuals and firms producing such innovations than on their users. Alfred D. Chandler's *The Visible Hand* introduced a new narrative structure to business history, viewing firms as crucially dependent on new communication and transportation technologies to allow them to expand their markets and control their throughput; still, his work focused primarily on the growth and structural evolution of large manufacturing firms.<sup>6</sup> His recent work continues to focus on the producer side of the equation.<sup>7</sup> In the past two decades, the Chandlerian emphasis on large producer firms has been complemented by Philip Scranton's analysis of smaller organizations that used craft skills to provide flexible customization.<sup>8</sup> In business history, too, however, the focus remained more on the producers of technology and products than on the users.

Beginning in the 1980s, according to Jean-Christophe Agnew in a recent essay, ". . . historians, sociologists, and anthropologists turned away from the so-called *supply side* [emphasis in original] of the consumption function to look at the *demand side*: the consumers themselves . . . ."<sup>9</sup> This demand-side turn opened up important new arenas for research. Still, it is important to understand exactly what assumptions underlie this demand-side turn, in both the history of technology and business history.<sup>10</sup>

5. Thomas P. Hughes, *Elmer Sperry, Inventor and Engineer* (Baltimore, Md., 1971); T. P. Hughes, *Networks of Power: Electrification in Western Society, 1880–1930* (Baltimore, Md., 1983).

6. Alfred D. Chandler, Jr., *The Visible Hand: The Managerial Revolution in American Business* (Cambridge, Mass., 1977).

7. A. D. Chandler, *Inventing the Electronic Century: The Epic Story of the Consumer Electronics and Computer Industries* (New York, 2001).

8. Philip Scranton, *Endless Novelty: Specialty Production and American Industrialization, 1865–1925* (Princeton, N.J., 1997).

9. Jean-Christophe Agnew, "The Give and Take of Consumer Culture," in *Commodifying Everything: Relationships of the Market*, ed. Susan Strasser (New York, 2003), 14.

10. The literature I cite throughout this paper comes primarily from U.S. business history and history of technology, simply because I write about the United States and am most familiar with this literature.



### In history of technology

The social construction of technology (SCOT) approach that emerged from the sociology of science and technology in the 1980s took the history of technology by storm. After several preliminary works, the movement's manifesto—*The Social Construction of Technological Systems*, edited by Wiebe Bijker, Tom Hughes, and Trevor Pinch—was published in 1987.<sup>11</sup> In it, the editors adopted the notion of social construction from the sociology of scientific knowledge, arguing that technology was not simply applied science and that, like science, it was socially constructed. Consequently, historians and sociologists of technology could no longer simply look at designers and manufacturers of new technological artifacts, or even of entire systems; instead, they needed to look at the whole range of influences shaping technical innovations, including social factors related to the potential users of the technology. Technology was, they claimed, the outcome of variation, selection, and stabilization—in all of which users, as well as other socially relevant groups such as nonusers and government bodies, played an important role. Subsequent edited volumes and monographs have further developed this approach.<sup>12</sup>

The SCOT approach was deplored by some historians of technology as too relativistic—most memorably by David Hounshell, who noted that “the social constructivists have at once brought the history of technology into the postmodern world, have slain the dragon of technological determinism, and have rendered the field incapable of saying much more than ‘all technology is socially constructed.’”<sup>13</sup> Despite some resistance, however, SCOT broadened the focus of much work in this area to include the *demand* side—*users* or *consumers* of technological artifacts—and how such actors helped shape the technologies.

Subscribers to the social construction school generally conceptualize these users as individual consumers. Indeed, Bijker (e.g., in his

11. Wiebe E. Bijker, Thomas P. Hughes, and Trevor Pinch, eds., *The Social Construction of Technological Systems: New Directions in the Sociology and History of Technology* (Cambridge, Mass., 1987). Earlier works in this tradition appear, for example, in Donald MacKenzie and Judy Wajcman, eds., *The Social Shaping of Technology* (Milton Keynes, U.K., 1985).

12. See, for example, Wiebe E. Bijker and John Law, *Shaping Technology/Building Society: Studies in Sociotechnical Change* (Cambridge, Mass., 1992); Wiebe E. Bijker, *Of Bicycles, Bakelites, and Bulbs: Toward a Theory of Sociotechnical Change* (Cambridge, Mass., 1995); Nelly Oudshoorn and Trevor Pinch, eds., *How Users Matter: The Co-Construction of Users and Technologies* (Cambridge, Mass., 2003).

13. David A. Hounshell, “Hughesian History of Technology and Chandlerian Business History: Parallels, Departures, and Critics,” *History and Technology* 12 (Sept. 1995): 214.

discussion of bakelite), Ronald Kline (who wrote about rural consumer/user resistance to using telephones as the telephone companies prescribed), and others seemed to use the terms *user* and *consumer* more or less interchangeably.<sup>14</sup> Thus in talking about the role of users, such scholars often focused on consumer products such as Bijker's bicycles and Ruth Schwartz Cowan's household technologies, or on the consumer side of such technological systems as electrical power.<sup>15</sup> Although individual users could be aggregated into more or less formally constituted groups—such as bicycle clubs or loosely defined groups of urban versus rural household consumers—the notion of user is typically taken to refer to individual consumers. Firms enter the picture primarily as the producers and distributors of technological artifacts (e.g., bicycles) or of products of technology (e.g., electricity) to individuals.

Early in a technology's development, according to SCOT proponents Pinch and Bijker, it was defined as having "interpretive flexibility"—that is, various relevant groups, including user groups, had differing understandings of it and through social negotiations could shape its physical configuration.<sup>16</sup> But in the studies in this and subsequent volumes, SCOT scholars typically presented social influences as ending with the "stabilization" of the artifact's form and the rhetorical "closure" of any associated interpretive problems. After stabilization, users were assumed to accept the negotiated understanding and enact it in their actual use of technology, with no further influence on the technology. When technology users are conceptualized as *consumers*, their role was typically seen as ending at purchase; Cowan's "The Consumption Junction," for example, was the temporal and spatial junction at which an individual consumer purchased a new technology for the household.<sup>17</sup> With a few exceptions (e.g., Kline's

14. Bijker, *Of Bicycles, Bakelites, and Bulbs*; Ronald Kline, "Resisting Consumer Technology in Rural America: The Telephone and Electrification," in *How Users Matter*, ed. Oudshoorn and Pinch, 51–66. User and consumer denote and connote different things, however. A *user* is actively engaged with a technology, whereas a *consumer* simply acquires the artifact. This distinction is more significant in looking at technology use.

15. Bijker, *Of Bicycles, Bakelites, and Bulbs*; Ruth Schwarz Cowan, *More Work for Mother: The Ironies of Household Technology from the Open Hearth to the Microwave* (New York, 1983). See also Bijker and Pinch, "Social Construction of Facts and Artifacts," and Cowan "The Consumption Junction: A Proposal for Research Strategies in the Sociology of Technology," both in Bijker, Hughes, and Pinch, eds., *The Social Construction of Technological Systems*, pp. 17–50 and 261–80, respectively.

16. Bijker and Pinch, "Social Construction of Facts and Artifacts," 17–50, esp. 40–46. They draw on H. H. Collins's "Empirical Programme of Relativism" in the sociology of science for this notion.

17. Cowan, "The Consumption Junction," 263.

rural telephone consumers), individuals were assumed to use the technology in line with the producer's expectations.

SCOT's influence on the history of technology has been extensive, and the role of the demand-side users or consumers has become increasingly central to work in the history of technology. Indeed, one of the most recent volumes out of this tradition, Oudshoorn and Pinch's *How Users Matter*, argues that SCOT did not move far enough toward the user side and that users and technology should be seen as "co-constructed."<sup>18</sup> Nevertheless, this approach still typically conceptualizes users as individual consumers and their role as ending after a technology's stabilization, and certainly after the point at which a user purchases the technological artifact.

### In business history

In the past two decades, the demand-side turn has also reached business history. Business historians have been influenced by SCOT literature in the history of technology as well as by other trends coming from social, cultural, and economic history. Recently, many business historians have followed Kenneth Lipartito's exhortation to move beyond internalist business history to integrate broader cultural issues into the field.<sup>19</sup> Thus scholars have looked increasingly at the intersection of business history with cultural history—a nexus where the *consumer*, a term business historians tend to use more often than *user* in talking about items incorporating or made with the aid of technology, plays a major role. In several books and papers, Susan Strasser has provided excellent overviews of consumption as a new arena of study relevant to the history of business and technology.<sup>20</sup> The new consumption history uses a wide variety of perspectives, including those of gender and race from social

18. Oudshoorn and Pinch, eds., *How Users Matter*. This book focuses more on the sociology than the history of technology.

19. Kenneth Lipartito, "Culture and the Practice of Business History," *Business and Economic History* 24 (Winter 1995): 1–42.

20. Susan Strasser, ed., *Commodifying Everything*; Strasser, "Making Consumption Conspicuous: Transgressive Topics Go Mainstream," *Technology and Culture* 43, no. 4 (2002): 755–70; Strasser, Charles McGovern, and Matthias Judt, eds., *Getting and Spending: European and American Consumer Societies in the Twentieth Century* (New York, 1998); and Strasser's entry on "Consumption" in *Encyclopedia of the United States in the Twentieth Century*, vol. 3, ed. Stanley I. Kutler et al. (New York, 1996), 1017–35. For an early example of this literature, see also her *Satisfaction Guaranteed: The Making of the American Mass Market* (New York, 1989). For a more skeptical look at the notion of America's consumer culture, see Louis Galambos, "Myth and Reality in the Study of America's Consumer Culture," in *The Modern Worlds of Business and Industry: Cultures, Technology, Labor*, ed. Karen R. Merrill (Turnhout, Belgium, 1998), 183–203.

history.<sup>21</sup> Even economic history, a less obvious influence on the demand-side turn, has always shown some interest in consumption and demand as a factor in economic development.<sup>22</sup>

Sometimes this consumption history intersects with more traditional concerns of business history. Roland Marchand and Pamela Laird, for example, have brought consumers into the picture by looking at the evolution of advertising.<sup>23</sup> Laird observed that advertising's focus shifted around the turn of the twentieth century from producer-oriented styles, which portrayed the manufacturer's point of view, to consumer-oriented styles, which put the emphasis on consumption rather than on production. Regina Blaszczyk's *Imagining Consumers* showed how consumers, as imagined by fashion intermediaries, shaped technological innovation in the design and production of glass and ceramics.<sup>24</sup> Such works of business history incorporated consumers as interpreted or mediated by others—such as advertising companies and retail buyers.

Just as the SCOT literature has tended to see technology users as individuals, the business history literature has tended to see consumers of technology (or of other products and services) as individuals, who together made up a market for some item incorporating technology or made with technology. Consumers are typically seen as helping to shape the purchased product or service primarily through their aggregated individual purchases or through fashion intermediaries. Strasser pointed out that the consumption literature has gone beyond “visualiz[ing] middle-class urban and suburban

21. For example, see Philip Scranton, ed., *Beauty and Business: Commerce, Gender, and Culture in Modern America* (New York, 2000); Mary Louise Roberts, “Gender, Consumption, and Commodity Culture,” *American Historical Review* 104 (June 1998): 749–82; Robert E. Weems, Jr., *Desegregating the Dollar: African American Consumerism in the Twentieth Century* (New York, 1999); Roger Horowitz, ed., *Boys and their Toys? Masculinity, Class, and Technology in America* (New York, 2001).

22. See, for example, John Brewer and Roy Porter, eds., *Consumption and the World of Goods* (London, 1993); Martha L. Olney, *Buy Now, Pay Later: Advertising, Credit, and Consumer Durables in the 1920s* (Chapel Hill, N.C., 1991); Diane Lindstrom, *Economic Development in the Philadelphia Region, 1810–1850* (New York, 1978); and Maxine Berg, “Consumption in Eighteenth and Nineteenth-Century Britain,” in *The Cambridge Economic History of Modern Britain*, vol. 1, *Industrialization, 1700–1860*, ed. Roderick Floud and Paul Johnson (Cambridge, Mass., 2004), 357–387.

23. Roland Marchand, *Advertising the American Dream: Making Way for Modernity, 1920–1940* (Berkeley, Calif., 1985); Pamela Walker Laird, *Advertising Progress: American Business and the Rise of Consumer Marketing* (Baltimore, Md., 1998).

24. Regina Lee Blaszczyk, *Imagining Consumers: Design and Innovation from Wedgwood to Corning* (Baltimore, Md., 2000).

women” as consumers, now also seeing “working-class and even poor consumers, white and African-American” as well as “men and boys” and even rural consumers.<sup>25</sup> Still, scholars in this school continue to conceptualize consumers as individuals, not as organizations or business enterprises. Moreover, studies of consumption typically focus on how consumer taste—as interpreted by fashion intermediaries and ultimately demonstrated when an individual purchased an artifact—influenced what the manufacturer developed to be sold. This focus may in part reflect our field’s use of the term *consumer* rather than *user*, because the former has a more economic connotation than does the latter, which directs attention to actual use. For whatever reason, *use* of artifacts, if considered at all, is typically an afterthought in the business history literature.

### Redefining Technology Users or Consumers to Include Businesses

With this background, I will first argue that historians of business and technology should redefine technology users or consumers to include business enterprises as well as individuals. Firms (whether large or small) manufacture the goods and technologies that individual users or consumers buy. But many manufactured items—whether themselves technological devices or whether created through production processes heavily dependent on technology—are not intended for individual users or consumers. Rather, many such artifacts (e.g., forklifts and mainframe computers) are created and sold only to other institutional users, whether a business enterprise or a government or nonprofit organization. Others (e.g., laptops and vehicles) are purchased by both organizations and individuals, though generally in very different quantities, for internal use in further production of consumer goods or services. In either case, they are acquired by what in today’s business jargon might be called business-to-business (B2B) transactions.

Historians of both business and technology have long examined the role of government organizations as technology users or consumers. Merrit Roe Smith’s influential *Harpers Ferry Armory and the New Technology* focused on the influence of the military in shaping technological innovation.<sup>26</sup> Richard John’s essay on the post office

25. Strasser, “Making Consumption Conspicuous,” 758.

26. Merrit Roe Smith, *Harpers Ferry Armory and the New Technology* (Ithaca, N.Y., 1977).

and the railway mail service showed how the Postal Service, as a user of the railroads, shaped their development, particularly around scheduling.<sup>27</sup> Much history of digital computers focuses on government's role in shaping the technology and the industry. Kenneth Flamm's *Creating the Computer: Government, Industry, and High Technology*, for example, considered government (particularly the military) as the primary customer shaping computer technology and treated the development of a commercial computer industry only as an afterthought.<sup>28</sup> Paul Edwards combined the history of technology with political, military, social, and cultural history in *The Closed World: Computers and the Politics of Discourse in Cold War America*, which showed how computers came to reflect and in turn shape the thinking of their military users about Cold War America.<sup>29</sup>

Although government users have received frequent attention in this historical literature, commercial firms have very rarely been studied as technology users or consumers.<sup>30</sup> The greater accessibility of governmental than of business records only partially explains why historians have focused more on governmental than on business users, because historians have studied firms as producers extensively, using records from university libraries (e.g., Harvard's Baker Library), private libraries supported by foundations (e.g., the Hagley Museum and Library), and even firms themselves (e.g., MetLife Archives).

Of course, economic and business historians have not ignored this area entirely. Naomi Lamoreaux, Daniel Raff, and Peter Temin noted the growth of long-term relationships between supplier and buyer firms, rather than pure markets or pure hierarchies, as an increasing portion of the economy in recent decades.<sup>31</sup> Such a view would suggest a corresponding need for increased historical emphasis on

27. Richard R. John, "Recasting the Information Infrastructure for the Industrial Age," in *A Nation Transformed by Information: How Information Has Shaped the United States from Colonial Times to the Present*, ed. Alfred D. Chandler, Jr., and James W. Cortada (New York, 2000), 55–105.

28. Kenneth Flamm, *Creating the Computer: Government, Industry, and High Technology* (Washington, D.C., 1988). He mentioned only one commercial firm as a computer purchaser—defense contractor Northrop.

29. Paul N. Edwards, *The Closed World: Computers and the Politics of Discourse in Cold War America* (Cambridge, Mass., 1996).

30. For rare exceptions to this pattern, see James W. Cortada, *The Digital Hand: How Computers Changed the Work of American Manufacturing, Transportation, and Retail Industries* (New York, 2003); and David Caminer et al. *The World's First Business Computer: User-Driven Innovation* (London, 1996).

31. Naomi R. Lamoreaux, Daniel M. G. Raff, and Peter Temin, "Beyond Markets and Hierarchies: Toward a New Synthesis of American Business History," *American Historical Review* 108 (April 2003): 404–33.

relations between supplier and purchaser (or user/consumer) firms. Economic historians Nathan Rosenberg and Christine MacLeod, for example, have both noted the role of user firms in developing particular aspects of machine tools, and Ross Thomson has studied the “learning by selling” process by which users influenced ongoing technological innovation in mechanized shoe production.<sup>32</sup> Business historians have also studied firms such as General Electric, which marketed large-scale technological artifacts to other firms, and Alcoa, which used technology to develop new production processes and aluminum alloys to sell to manufacturing firms making products out of them.<sup>33</sup> Similarly, firms often used products manufactured by Scranton’s specialty manufacturers, and railroads purchased and used the locomotives produced by Baldwin Locomotive Works.<sup>34</sup> Still, the focus in such studies has typically been more on the producer’s side of the equation than on the buyer’s side.

A few noteworthy examples of scholarship look more intensely at the role of user firms in shaping innovation. Several of them center around innovation in the steel industry. Over a decade ago, Janet Knoedler wrote about railroads as “consumers of innovation” in steel products.<sup>35</sup> In *A Nation of Steel*, Thomas Misa traced the influence on steel suppliers of different organizational buyers, from railroads to architects, the military, and automobile manufacturers, showing how firms and other institutions shaped technological innovation in steel.<sup>36</sup> More recently, Steven Usselman’s exemplary book-length treatment of technological innovation in the railroad system provides a detailed chapter exploring the interactions between railroads and the steel companies that supplied them with rails.<sup>37</sup> Although

32. Nathan Rosenberg, *Perspectives on Technology* (Cambridge, U.K., 1976); Christine MacLeod, “Strategies for Innovation: The Diffusion of New Technology in Nineteenth-Century British Industry,” *Economic History Review* 45, no. 2 (1992): 285–307; Ross Thomson, “Learning by Selling and Invention: The Case of the Sewing Machine,” *Journal of Economic History* 47 (June 1987): 433–45; R. Thomson, *The Path to Mechanized Shoe Production in the United States* (Chapel Hill, N.C., 1989).

33. W. Bernard Carlson, *Innovation as a Social Process: Elihu Thomson and the Rise of General Electric, 1870–1900* (New York, 1991); Margaret B. W. Graham and Bettye H. Pruitt, *R & D for Industry: A Century of Technical Innovation at Alcoa* (New York, 1990). Alcoa itself also made some consumer products.

34. Scranton, *Endless Novelty*; John Brown, *The Baldwin Locomotive Works* (Baltimore, Md., 1995).

35. Janet T. Knoedler, “Market Structure, Industrial Research and Consumers of Innovation: Forging Backward Linkages to Research in the Turn-of-the-Century U.S. Steel Industry,” *Business History Review* 67 (Spring 1993): 98–139.

36. Thomas J. Misa, *A Nation of Steel: The Making of Modern America, 1865–1923* (Baltimore, Md., 1995).

37. Steven W. Usselman, *Regulating Railroad Innovation: Business, Technology, and Politics in America, 1840–1920* (Cambridge, U.K., 2002). See, especially, chap. 6.

railroads initially used market power and contract specifications in attempting to gain control over the manufacturing of steel rails, ultimately cooperation among producers and consumers in a viable system of innovation was achieved through industry-wide standards or specifications negotiated by experts through engineering and trade associations. This interaction between firms is only one part of Usselman's broader story, in which railroads produced services that the American public used, but it demonstrates the importance of railroads as *users* of steel, highlighting the mutual influence between buyers and suppliers, technology producers, and large-scale firm users.

Some business history literature about technological innovation in firms producing fabrication materials other than steel also looks more closely at the user role. In their study of technical innovation in Alcoa, Margaret Graham and Bettye Pruitt showed how that firm (and its predecessors) worked with major customers such as electrical power firms to develop new products such as steel-reinforced aluminum cable for high-tension electrical transmission lines; indeed, they demonstrated that Alcoa preferred working with such large enterprises to working with "those small, fractious customers in highly fragmented and volatile markets, the novelty makers, and the cookware manufacturers," that is, small firms with limited technical capability.<sup>38</sup> They also demonstrated that working with and helping a large set of diverse corporate customers in the innovation process, as Alcoa did with companies in developing aluminum rigid container sheet (RCS) for making into cans, carried its own risks, including giving away know-how or undercutting profitability by spending too much on technical support.<sup>39</sup> Graham, this time working with Alec Shuldiner, similarly considered innovation for large-enterprise customers in Corning.<sup>40</sup> They noted that Corning established several formal or informal partnerships with major customers, such as Sylvania for light bulbs and television and automobile companies for catalytic converters, to undertake innovation in glass processes and products that these customer firms used in their products. Again, this strategy held risks as well as rewards (as in the use of Corning's Celcor substrate in catalytic converters, the markets for which were subject to regulations outside of Corning's control).<sup>41</sup>

The works just discussed are welcome exceptions to business historians' dominant focus on the supply side of technology. I would

38. Graham and Pruitt, *R & D for Industry*, 33, 75–97, quotation at p. 75.

39. *Ibid.*, 331–76.

40. Margaret B. W. Graham and Alec T. Shuldiner, *Corning and the Craft of Innovation* (New York, 2001).

41. *Ibid.*, 142, 274, 350–58.



like to encourage more such work and encourage historians to take the work even farther. Right now, such work still ultimately focuses on the suppliers of technology, although these examples consider seriously how customer firms shaped the technology's development. By taking our knowledge of firms as institutions and combining it with the popular demand-side turn, business historians can examine in even more depth the role and influence of firms as buyers and users, not just as producers and sellers, of technological artifacts.

In my recent book, for example, I look at how information technology (IT) user firms in one industry, life insurance, adopted and used pre-computer tabulating technology and then replaced it with early computer technology. The notion of firms as "IT users" was an obvious and familiar one to someone teaching in a business school and familiar with IT research.<sup>42</sup> But I quickly found that this approach was not so obvious to historians of business and technology. After a presentation on life insurance firms as users of early computers, I was stunned when one historian of technology asked me where the "users" were in my story! What he thought of as *users* were the individuals I would label as computer *operators* in this case. Although operators may be interesting in their own right, they did not exercise a primary function attributed to users or consumers in recent literature—acquisition or purchase of the technological artifact. But with large-scale items such as mainframe computers or railroad cars or machine tools, the operator did not decide whether to purchase, or exactly what to purchase—critical decisions at Cowan's "consumption junction." Instead, an organization made up of many individuals with different roles and interactions, in this case a business, made that decision. Moreover, even after the computer had been acquired, the operator did not decide how the computer was to be used (i.e., what applications it would perform) and had nothing to do with programming these applications—other parts of the firm were in charge of these areas. In this case, ignoring all but the operators in examining technology use would miss most of the story.

42. For example, see James L. McKenney, Duncan C. Copeland, and Richard O. Mason, *Waves of Change: Business Evolution Through Information Technology* (Cambridge, Mass., 1995); Linda M. Applegate, F. Warren McFarlan, and James L. McKenney, *Corporate Information Systems Management: Text and Cases* (Chicago, 1996); Daniel Robey, Jeanne W. Ross, and Marie-Claude Boudreau, "Learning to Implement Enterprise Systems: An Exploratory Study of the Dialectics of Change," *Journal of Management Information Systems* 19 (Summer 2002): 17–46; Timothy F. Bresnahan, "Measuring the Spillovers from Technical Advance: Mainframe Computers in Financial Services," *American Economic Review* 76 (Sept. 1986): 742–55.

A brief look at life insurance firms as users of early computers demonstrates that adoption and application decisions involved multiple institutional factors. For example, enterprises typically have rules that govern justifying capital purchases above a certain cost. The Univac large-scale magnetic tape computer, marketed by an acquired division of Remington Rand starting in 1954, was the first computer available to commercial firms. Before an insurance firm could commit to buying one of these computers for \$1.25 million, typically an internal committee had to design an application that would, on paper at least, pay for itself in cost savings within a certain period (the fact that both Metropolitan Life and Franklin Life, the former of which was two orders of magnitude larger than the latter, claimed they could achieve a four-year payback suggests that that period was typical).<sup>43</sup> D. K. Swinnerton of Pacific Mutual, which was closer to Franklin Life than to Metropolitan Life in size, explained the type of Univac application his firm chose by looking at how firm size affected this payback period:

Obviously, a large volume work load is essential if you are to have an economically sound application for a large scale data processing device. Accordingly, it appeared to us that there were two broad general approaches to installing this type of equipment. The size of the company pretty much dictates which of the two approaches would be followed.

First, in a very large company, it is practical to convert the work of one department or one function—the work of a single department having sufficient volume.

Second, in a medium or smaller sized company, the work volume of one department is not adequate. It, therefore, becomes necessary to use a consolidated or combined functions approach. In this manner, sufficient work volume can be achieved by combining a number of related operations.<sup>44</sup>

Thus understanding the system for approving capital expenditures illuminates how such firms chose to use them.

Even more interesting to those studying technological innovation, however, is the comparison of this situation with that faced by the

43. JoAnne Yates, *Structuring the Information Age: Life Insurance and Technology in the Twentieth Century* (Baltimore, Md., 2005), chap. 6. Of course, claiming a four-year payback before computer acquisition was one thing, and showing one afterward was another. Companies spoke at trade associations about the results of their pre-adoption studies but never reported *post hoc* results.

44. D. K. Swinnerton, "Installing a Daily Cycle Data Processing System," *Proceedings of the Insurance Accounting and Statistical Association* (May 1956): 97.

IBM 650, a much smaller card- and drum-based computer developed within IBM and first available to commercial firms in late 1955. Because IBM rented this machine, rather than selling it, and because its rental price (just over \$3,200 per month) was comparable with the rental for already familiar sets of IBM tabulating equipment, the corporate decision-making process to acquire it was much simpler. At a 1955 conference of an insurance trade organization, Glenn O. Head of United States Life Insurance Company described his firm's decision to rent a 650 based on a limited investigation:

In November, 1953, it appeared to us that we could use the recently announced IBM Type 650. Our investigation before ordering the machine was not extensive. We felt that our job was big enough to use a machine of this size, and we had confidence that IBM would build one that would be workable and well serviced.<sup>45</sup>

The key factors were the relatively small size of the 650 combined with U.S. Life's established faith in IBM's reliability and service. According to an automation consultant, Equitable Life Insurance Company of Iowa made its decision to rent a 650 based only on its pricing, which was comparable with that of tabulators they already rented from IBM, and the insurance firm's established practice of standardizing office equipment:

The data processing equipment of different manufacturers was not compared because it is company policy to use only one make of equipment, such as one make of typewriter, one make of adding machine, one make of punched card equipment. The selection of the IBM 650 was justified on the basis that it would replace IBM punched card equipment, either installed or on order, with an approximately equivalent monthly rental.<sup>46</sup>

IBM's knowledge of tabulator rental prices and decision-making processes within firms already renting its tabulators undoubtedly helped it price the 650 so attractively. And it was the small 650 that by 1956 gave IBM the lead over Remington Rand and other competitors in the new computer market.

45. Glenn O. Head, "650 Planning at United States Life," *Proceedings of the Insurance Accounting and Statistical Association* (May 1955): 465-66.

46. R. Hunt Brown, *Office Automation: Insurance* (a loose-leaf handbook published in New York by Automation Consultants, 1959, first revision 1960, in Charles Babbage Institute at the University of Minnesota), Part III, Section D4-1.

Insight into issues such as corporate decision making help us understand not only why users bought particular machines but also why IBM so quickly took over the lead in the new computer market, even though it lagged behind the makers of the Univac in its technology at this stage. Thus business historians, who presumably know more about the institutional structure and processes in business enterprises than historians of technology (or many other historians, for that matter), have an opportunity to expand the realm of technology users into this familiar corporate world. Such an approach encourages us to look at how these user (or consumer) firms influenced innovation, as much social construction and consumer literature has done for individuals. We can also extend the notion that users and technology are “co-constructed,” as Oudshoorn and Pinch argued in *How Users Matter*, from individual to firm users.<sup>47</sup> Moreover, firms purchasing large quantities of what may also be seen as a consumer good or part of a consumer good (e.g., electricity and catalytic converters for automobiles), or very large and expensive technology that is used to produce the end product (e.g., machine tools, main frame computers, and steel rails), have more market power than individual consumers, or than many groups of such consumers, so they are better positioned to influence the technology produced. Studies such as those discussed above reveal the influence of insurance companies, of railroads, and of television and auto makers as users or customers of technology.

Assuming that firms, too, can be customers also opens up opportunities for those who study business functions such as sales and marketing, or technical support services. Business and economic historians have long noted that complex technologies for which customers want support and training require a different type of sales relationship than simple ones.<sup>48</sup> Technologies sold to firms frequently belong to this category. A vendor such as IBM, which rented and later sold tabulating systems and then computers to relatively large firms, had to train its sales force to explain how the technology would solve the purchasing firm’s problems and its service force to support the equipment after its rental or sale. Service forces, in particular, have received little attention in business history, so studies of the role played by them may produce important insights.

These arguments may also hold promise for those business historians who study consumption without emphasizing technology.

47. Oudshoorn and Pinch, *How Users Matter*.

48. For example, Chandler, *The Visible Hand*; and Lamoreaux, Raff, and Temin, “Beyond Markets and Hierarchies.”

Although business and social historians have studied buying habits of and retail selling to individual consumers, only a few historians of sales and/or marketing, such as Walter Friedman, Timothy Spears, and Pamela Laird, have considered wholesale selling of consumer items to retail firms, and even fewer have looked at the purchasing side of the transaction.<sup>49</sup> Looking at the organizational processes around wholesale transactions may illuminate both the production of consumer items by large enterprises and their marketing to and consumption by individuals and firms, as well as the role of wholesale enterprises themselves.

Business historians could also view firms as consumers of items never used by individuals, but sold to and used only by enterprises (e.g., industrial materials, such as chemicals and abrasives, and factory equipment such as forklifts). How do these organizational consumers decide what to purchase? How do they pay for their purchases? What role does a purchasing firm's culture play in the decision to buy and in the subsequent appropriation of the item? What implications do such acquisitions have for the corporate consumers and producers of such items? The history of consumption has looked at symbolic or status values in individual consumption but could also examine the organizational values or culture expressed by enterprises through their purchases and consumption. In the early days of typewriters, for example, some firms purchased them as much or more for their symbolic message of "modernity" as for their functional value, which was not yet well understood.<sup>50</sup> Historian of technology Eric Schatzberg has shown that the cultural symbolism of metal as connoting technological progress influenced engineers and designers of airplanes between the two world wars.<sup>51</sup> Business historians could no doubt add to the story by focusing on cultural and institutional aspects of firm purchasers and users of airplane materials, such as Lockheed.

Thus business historians could take the tools and questions developed to study individual consumption, as well as individual technology use, and apply them to firms as consumers and users. Doing so should offer many new arenas of study while leveraging business

49. Walter Friedman, *Birth of a Salesman: The Transformation of Selling in America* (Cambridge, Mass., 2004); Timothy B. Spears, *100 Years on the Road: The Traveling Salesman in American Culture* (New Haven, Conn., 1995); Laird, *Advertising Progress*. For the purchasing side, see Chandler, *The Visible Hand*, chap. 7.

50. JoAnne Yates, *Control Through Communication: The Rise of System in American Management* (Baltimore, Md., 1989).

51. Eric Schatzberg, *Wings of Wood, Wings of Metal: Culture and Technical Choice in American Airplane Materials, 1914–1945* (Princeton, N.J., 1999).

historians' understanding of how firms function internally and within society.

### Examining *Use* in Addition to *Users*

Returning to firms as technology users, I would also urge business historians to look beyond technology users to examine ongoing firm use of such technology. SCOT's useful notion of "interpretive flexibility" is generally assumed to last only until "stabilization" or "rhetorical closure" is achieved—that is, when the form of a particular technological artifact is settled and all previously identified problems have been solved.<sup>52</sup> This is the point at which some contemporary scholars of innovation would say that a "dominant design" has been reached.<sup>53</sup> This assumption is problematic, however, as many uses of technological products and processes continue evolving, either sporadically or continuously, beyond the point at which the technology itself has seemingly stabilized. Consumer products such as aspirin and baking soda (originally stabilized around pain killing and baking and cleansing applications, respectively) began to be used by individual consumers for new purposes (to combat heart disease and to deodorize refrigerators) a century or more after they were originally developed and marketed.<sup>54</sup> Attention to ongoing use is, I would argue, valuable when technology users are enterprises, as well as when they are individuals. Large firms may purchase the same technological artifact but use it quite differently, with different effects on themselves and on future development of that artifact.

Historians focusing on technological innovation in metals processing and products have paid some attention to this issue. We have seen that Misa illustrated the different demands various uses—from carrying trains to fabricating automobiles—put on steel technology and steel suppliers.<sup>55</sup> Usselman, focusing specifically on railroad innovation, demonstrated that even different types and sizes of engines used by firms on different parts of their systems placed differing demands on the steel.<sup>56</sup> Problems with existing rails under

52. Bijker and Pinch, "Social Construction of Facts and Artifacts," 40–41.

53. James M. Utterback and William Abernathy, "A Dynamic Model of Process and Product Innovation," *Omega* 3, no. 6 (1975): 639–56; and James M. Utterback, *Mastering the Dynamics of Innovation* (Cambridge, Mass., 1994).

54. Steve Kahl and JoAnne Yates, "Radical Incrementalism: Factoring Customer Use into Technological Change," Unpublished paper accepted for presentation at the Academy of Management Annual Conference, Atlanta, Ga., Aug. 2006.

55. Misa, *A Nation of Steel*.

56. Usselman, *Regulating Railroad Innovation*.

certain types of use led railroads to pressure steel companies for alternatives and to engage in an extended interaction through professional and trade associations out of which ultimately came the standards Usselman discussed. Similarly, Graham and Pruitt showed that new uses for aluminum by Alcoa's major customers (e.g., electrical power firms) shaped their demands and ultimately Alcoa's process and product technologies. The differences in use in these examples are important both for how they influenced metal formulation and metal working and for what they tell us about the railroads, automobiles, and electrical systems using them.

Ongoing changes in use over time, especially by lead users, are important in other types of businesses, as well.<sup>57</sup> Certainly, military and governmental uses of technologies (e.g., use of CRT bulbs for radar) shaped these users' capabilities and the ongoing evolution of the relevant producer technology (Corning's technology for making the radar bulbs).<sup>58</sup> The notion of "learning by doing," addressed by Lamoreaux, Raff, and Temin in their edited book of this title, also focuses attention on technology use. For example, Kazuhiro Mishina's chapter examines another military contracting case, this time airframe fabrication by Boeing during World War II. It shows that Boeing's productivity gains in B-17 production came well after the firm had made all its changes in production technology, apparently as a result of learning *not* by the individual workers but by the production "system" over time.<sup>59</sup> Ongoing system use was key to the gains, even when the technology was stabilized.

One important innovation in early computing came directly from another military contractor's use and subsequent modification of technology over time. In late 1947 Northrop Aircraft, a major IBM customer with a large tabulating installation for computing guided missile trajectories, connected an IBM 601 electric multiplier to an IBM 405 tabulator (or "accounting machine," as IBM called them at this time) to eliminate a card-handling step in their calculations.<sup>60</sup> This work-around (initially improvised without the help or permission of IBM) increased calculation speed somewhat, but still not as much as Northrop wanted to increase it. Soon Northrop had IBM

57. Eric von Hippel explores the role of lead users in contemporary technological innovation in *The Sources of Innovation* (New York, 1988).

58. Graham and Shuldiner, *Corning and the Craft of Innovation*, 182–95.

59. Kazuhiro Mishina, "Learning by New Experiences: Revisiting the Flying Fortress Learning Curve," in *Learning by Doing in Markets, Firms, and Countries*, ed. Naomi Lamoreaux, Daniel M. G. Raff, and Peter Temin (Chicago, 1999), 145–79.

60. This story is related in C. J. Bashe et al., *IBM'S Early Computers* (Cambridge, Mass., 1986). See also Paul Ceruzzi, *A History of Modern Computing* (Cambridge, Mass., 1998), 19.

replace the 601 with the recently introduced and faster IBM 603 vacuum-tube multiplying punch and connected it to the 405 tabulator and bank of relays, creating an assemblage—referred to within Northrop as a “poor man’s ENIAC”—that could carry out short sequences of calculations without human intervention.<sup>61</sup> Because Northrop was not secretive about this development, other customers soon began asking IBM for such an assemblage. By 1949, IBM had created a product similarly assembled from tabulating devices and was marketing it as the Card-Programmed Calculator (CPC). This device was installed in several hundred commercial firms and anticipated some of the capabilities that computers would soon offer.

My work on life insurance adoption of early computers also reveals how important different uses were in shaping how hardware for the commercial market was originally configured and which hardware vendors were most successful commercially, as well as what software was developed and/or adopted and how such software was used.<sup>62</sup> Life insurance firms saw computers as related to and extending the capabilities of tabulators. Based on long experience with that technology, they, unlike many military and scientific users but like many other commercial users, wanted computers to process a great many transactions with only a small amount of computation per transaction. Input/output and long-term record storage were critically important for their uses. Insurance firms already possessed millions and millions of the 80-column cards used in IBM tabulating equipment—cards that were punched with customer data and that were recognized as legal records by various regulatory bodies. This necessarily conservative user industry, which retained records for as long as a human lifetime, did not want to give up this humanly readable storage medium for invisible electric charges on magnetic tape.

Through direct interactions between potential vendors, on the one hand, and the representatives of insurance firms and associations, on the other hand, this large potential user industry helped shape the configuration of input and output on the early commercial computers. First, Prudential’s Edmund Berkeley convinced Prudential executives to sign a development contract with Eckert-Mauchly Computer Company (EMCC), which was struggling to develop the Univac. This contract, written to reflect Berkeley’s imagined use of the computer in Prudential, required EMCC to develop card-to-tape and tape-to-card converters and to improve output printers. Even more significantly for the evolution of the computer industry, the operational

61. Bashe et al., *IBM’s Early Computers*, 70.

62. Yates, *Structuring the Information Age*, see especially chaps. 5 and 6.



use envisioned by a committee of the Society of Actuaries (an insurance association) attracted many of the small- to medium-sized life insurance firms to IBM's first commercial computer, the small, card-and-drum-based 650, originally intended as a stop-gap measure to keep tabulator customers from jumping to the Univac or another computer until IBM could create its first large computer. When the 650 became a much bigger success than expected, IBM followed up by developing and introducing the even more successful (but still small-scale and card-compatible) 1401, in addition to the larger and more technically sophisticated magnetic tape-based 700 series and 7000 series computers.<sup>63</sup> Small, card-based computers such as the 650 and the 1401 put IBM at the front of the emerging computer industry well before it created the 360 line, which proved its technical sophistication. Once IBM recognized that insurance firms and other commercial customers wanted to use the new computers much as they had used tabulators, it adapted its hardware strategy to that use.

Moving from hardware to software, we find that the very notion of closure in interpretive flexibility is problematic in this realm, because software typically offers users multiple options for exactly how to use it, and users can often change those options over time.<sup>64</sup> In the early days of commercial computing, vendors such as IBM often bundled software with hardware to increase demand for the latter. Commercial users created a demand for general-purpose software routines such as those used to create reports, and several hardware vendors provided libraries of such routines. The life insurance industry accounted for so many tabulator and potential computer customers that IBM developed software for a specific insurance application to attract them to its 1401 computer.

Because the insurance firms that initially adopted computers had struggled with programming them, some other firms in the industry initially held back from adopting computers. IBM took the insurance application initially designed by the Society of Actuaries committee to guide insurance companies' early computer use (called the Consolidated Functions approach) as the basis for developing its '62 CFO (Consolidated Functions Ordinary) application package, a modular set of programs that could be used to integrate multiple functions related to processing individual life insurance policies (including premium billing and accounting, and policy loans). The software was successful in attracting medium-sized firms, which could not afford to adopt a computer for just one function, to the IBM 1401,

63. *Ibid.*, chap. 7.

64. Some programs are more flexible than others, of course.

allaying their fears of incurring the high costs and delays that the pioneering companies had struggled with when they attempted to develop their own software independently.

Even though IBM provided the same software technology to all life insurance firms purchasing its 1401 computer, firms customized and used it in different ways and with different results. Although the committee that developed the original Consolidated Functions approach had stated that it improved performance more through its consolidation of the functions than through the computer's increased speed in performing each function, '62 CFO's modular structure allowed users to adopt as many or as few of the application's modules as they desired and to integrate them only when they wanted to do so. The majority, influenced by insurance's conservative, public service culture, took the most incremental adoption path, transferring functions one by one from tabulating systems directly to the 1401 computer, minimizing disruption by leaving integration until much later (if at all).

Firms with too many policies to be handled by a 1401 running '62 CFO could adopt a bigger IBM computer from the 700 series, but without the software package. Both Equitable Life and Prudential, for example, attempted to program their own versions of the Consolidated Functions application but approached the task in very different ways.<sup>65</sup> Equitable took an explicitly incremental approach like that used by most adopters of '62 CFO. Prudential, in contrast, attempted—unsuccessfully—to integrate its policy-related functions immediately, discovering part way through the troubled implementation that its IBM 650s were paying for themselves, whereas the 700 series computers were not. Adjusting its purchasing decision at this point, it ended up with an unfortunate mix of computers, and its attempted integration was ultimately delayed by almost two decades.

Only by looking at how insurance firms actually *used* the hardware and software they adopted can we begin to understand how it affected them. For example, it helps explain why it apparently took two decades for insurance to realize any cost reductions with the technology. It also suggests one explanation for the “productivity paradox”—the absence of expected productivity gains among user industries investing in IT—that long puzzled scholars of contemporary IT during the 1980s.<sup>66</sup>

Moreover, examining use helps us understand the evolution of the technology itself as well as of the vendor industry. It clarifies why

65. Yates, *Structuring the Information Age*, chap. 6.

66. For an overview of research on the productivity paradox, see Erik Brynjolfsson, “The Productivity Paradox of Information Technology,” *Communications of the ACM* 36 (Dec. 1993): 67–77.

the 80-column card, for example, remained central to computer technology for so long, despite the technological advantages of magnetic tape. It also illuminates IBM's success in making the transition from the tabulator business to the computer business in the 1950s and 1960s, an outcome not expected by most contemporary specialists in technological innovation. Thus examining how firms actually use technology elucidates the suppliers' competitive landscape and the pressures on innovation, as well as user firms' operations.

Business historians who study consumption without an emphasis on technology may also gain from focusing on use, as well as purchase, of goods and services, by individuals or firms. Studying historical use of individual consumer goods poses challenges in obtaining primary sources but may expose trends that shaped subsequent innovations in these and related products. New uses for products like baking soda, as noted earlier, may well have emerged in consumer use long before they were embraced and marketed by producers. Scholars from other fields, including material culture, sociology, and anthropology, but typically not business history, sometimes study the actual use of individual consumer products.<sup>67</sup> Studies of how firms, rather than individuals, actually used equipment they rented or purchased from other firms may be even more fruitful for business historians, illuminating evolving office and manufacturing practices. Although literature from early twentieth-century manufacturers of filing cabinets, for example, recommended that firms keep all files in a centralized filing room (a view reinforced by efficiency experts of the era), in practice, filing cabinets frequently proliferated throughout physical facilities. Focusing on their use reveals that some managers wanted to keep copies of their internal correspondence for later reference, leading to decentralized files which, in turn, encouraged increased internal correspondence in many early twentieth-century firms.<sup>68</sup> Similarly, examining how firms actually arranged and used factory space and equipment illuminates manufacturing processes as well as labor practices in those firms, as Lindy Biggs has shown in her study of *The Rational Factory*.<sup>69</sup>

Thus by taking the notion of technology users and consumers beyond the points of design stabilization and/or technology

67. In her essay on sources in *Imagining Consumers*, Blaszczyk notes that historical "[w]orks that consider the use and meaning of artifacts are few and far between" (p. 358), although she cites many works from nonhistorical fields (e.g., by French social theorist Pierre Bourdieu, American sociologist Herbert J. Gans, and anthropologists Mary Douglas, Baron Isherwood, and Daniel Miller).

68. Yates, *Control Through Communication*.

69. Lindy Biggs, *The Rational Factory: Architecture, Technology, and World in America's Age of Mass Production* (Baltimore, Md., 1996).

purchase, and by recognizing that users continue to shape as well as be shaped by technology and material goods in use, business historians may find that their tools allow them to explore more facets of the business world as well as of human life and material culture.

### Relevance to Contemporary Management

This brings me to my final topic—relevance to contemporary management studies. I believe that focusing on firms as users or consumers and looking more deeply at how they use and shape technology, as well as how they are shaped by it, may make our work more relevant to many scholars of contemporary management. Business history as a field has, in recent years, focused on its relevance to economics and to social and cultural history, but less on its relevance to modern management studies.<sup>70</sup> Although these connections are important to business history, and the connection to cultural history, in particular, energized the turn toward consumption studies in the field, business historians should not ignore the connections to business disciplines. Business history has a long and deep connection to business education in places such as Harvard Business School. Chandler's own work, much of it done while he was at Harvard Business School, certainly had a profound influence on contemporary business fields.<sup>71</sup> His *Strategy and Structure* was required reading in corporate strategy courses for many years.<sup>72</sup> Nevertheless,

70. For relevance to economics, see, for example, Lamoreaux, Raff, and Temin, "Beyond Markets and Hierarchies"; for relevance to cultural history, Strasser, ed., *Commodifying Everything* and Lipartito, "Culture and the Practice of Business History"; for relevance to social history, Angel Kwolek-Folland, *Engendering Business: Men and Women in the Corporate Office, 1870–1930* (Baltimore, Md., 1994) and Juliet E. K. Walker, *The History of Black Business in America: Capitalism, Race, Entrepreneurship* (New York, 1998).

71. Nicolai Foss included excerpts from *Strategy and Structure* in his edited management reader, *Resources, Firms and Strategies* (New York, 1997), and identified Chandler as a seminal contributor anticipating the modern resource-based approach (p. 13). Chandler is also widely cited in strategy, entrepreneurship, evolutionary economics, and international business. See, for example, Jorge Nascimento Rodrigues, "Strategy and Structure Redux," *Business Strategy Review* 13, no. 3 (2002): 20–27; Richard R. Nelson, "Recent Evolutionary Theorizing About Economic Change," *Journal of Economic Literature* 33 (March 1995): 48–90; Bruce Kogut and Udo Zander, "Knowledge, Market Failure and the Multinational Enterprise: A Reply," *Journal of International Business Studies* 26, no. 2 (1995): 417–26.

72. Chandler, *Strategy and Structure: Chapters in the History of the American Industrial Enterprise* (Cambridge, Mass., 1962). This book, of course, was written long before he arrived at Harvard Business School.

as van Fleet and Wren recently pointed out, the teaching of history in business schools has declined in the past two decades.<sup>73</sup> Most business historians would agree that knowing something about the history of business and technology would deepen the business understanding of undergraduate business majors, MBA students, doctoral students, and faculty. In addition, business schools add significantly to the market for new business historians and could add even more. One important way business historians can increase the field's visibility in business schools is to show contemporary scholars in management fields points of connection between our field and theirs.

Expanding our focus to include firms as users or consumers of technological products allows us to connect with work in several business fields, starting with management of technological innovation. Scholars in this field have long been open to historical contributions, because they have both used extended historical examples and argued for the value of history and historical methods to their field.<sup>74</sup> Work by Eric von Hippel and his colleagues has long focused on the important role of users (both firms and individuals) in shaping technology to their own uses, and his 2005 book argues that the trend toward user shaping of technological innovation is increasing, not decreasing, in recent years.<sup>75</sup> Other scholars of technological innovation have also recognized the significant role of user firms.<sup>76</sup> By focusing on user firms, business historians can document an important piece of such user-led innovation historically and produce work that resonates with that of these scholars in business schools who study technological innovation.

Historical work focusing on firms as users or consumers of technology (and other goods and services) will also help us connect with some other areas of management scholarship. For example, some such work is related to contemporary work on supply chain management

73. van Fleet and Wren, "Teaching History in Business Schools, 1982–2003."

74. See, for example, the use of historical examples in Utterback, *Mastering the Dynamics of Innovation*; on the value of history to the field, see Stephen R. Barley, "What Can We Learn from the History of Technology?" *Journal of Engineering and Technology Management* 15 (Sept. 1998): 237–55.

75. von Hippel, *The Sources of Innovation*; Eric von Hippel, *Democratizing Innovation* (Cambridge, Mass., 2005); Pamela D. Morrison, John H. Roberts, and Eric von Hippel, "Determinants of User Innovation and Innovation Sharing in a Local Market," *Management Science* 46 (Dec. 2000): 1513–27.

76. See, for example, Robin Williams and David Edge, "The Social Shaping of Technology," *Research Policy* 25 (Sept. 1996): 856–99; James Fleck, "Learning by Trying: The Implementation of Configurational Technology," *Research Policy* 23 (Nov. 1994): 637–52.

and the flow of raw materials and components from suppliers to manufacturers and of final products to wholesalers and finally retailers, an area which became central to the field of operations management in the 1990s and also has connections to marketing and purchasing.<sup>77</sup> Some scholars of information systems study a related issue—how IT supports and enables connections between buyer and supplier firms in the supply chain—and may be interested in how close buyer–supplier transactions were handled before the technology of the past three decades.<sup>78</sup> In such contemporary research, firms are treated as technology users and/or consumers. Thus expanding our recent focus on the demand side to include firms as users could give our work added resonance among contemporary management scholars in these management areas.

Similarly, we have opportunities to connect to contemporary management scholarship when we work on technology use. Research on how users shape (and are shaped by) technological artifacts beyond the hypothetical point of closure, when the “dominant design” has been achieved, can also enable us to contribute. Although many management scholars in a range of areas have a deterministic view of technology, an increasing number do not. Work in the management of technological innovation highlights the fact that modification to a technology as it is being used shapes subsequent generations of the technology.<sup>79</sup> A growing group of scholars at the intersection of IT and organization studies are looking at differences in how technologies are appropriated by different user organizations such as firms, hospitals, and government institutions.<sup>80</sup> Many

77. See, for example, Charles Fine, *Clockspeed: Winning Industry Control in the Age of Temporary Advantage* (New York, 1999); Sharon Novak and Steven D. Eppinger, “Sourcing by Design: Product Complexity and the Supply Chain,” *Management Science* 47 (Jan. 2001): 189–204. Two journals directly addressing such B2B relationships and transactions began publishing during the second half of that decade: *Supply Chain Management: An International Journal* in 1996 and *Supply Chain Management Review* in 1997.

78. See, for example, Peter Weill and Michael Vitale, *Place to Space: Migrating to E-business Models* (Cambridge, Mass., 2001); Srinivasan Raghunathan and Arthur B. Yeh, “Beyond EDI: Impact of Continuous Replenishment Program (CRP) Between a Manufacturer and its Retailers,” *Information Systems Research* 12 (Dec. 2001): 406–19; M. R. Subramani, “How Do Suppliers Benefit from Information Technology Use in Supply Chain Relationships?” *MIS Quarterly* 28, no. 1 (2004): 45–73.

79. Sonali Shah, for example, studied this process in sports equipment, focusing on communities of individual users rather than on firm users: Nikolaus Franke and Sonali Shah, “How Communities Support Innovative Activities: An Exploration of Assistance and Sharing among End-Users,” *Research Policy* 32 (Jan. 2003): 157–78.

80. See, for example, Orlikowski, “Using Technology and Constituting Structures”; Daniel Robey and Sundeep Sahay, “Transforming Work Through Information

of them study how user firms implement large IT systems (software, such as Enterprise Resource Planning systems, as well as hardware) and are interested in issues such as how a user firm's corporate culture affects the appropriation of technology—a topic business historians can certainly address around earlier generations of technology.<sup>81</sup> These scholars have also shown interest in learning from historical studies.<sup>82</sup>

A relatively small but increasing number of scholars in this area are taking a practice perspective that looks in detail at how people within groups or organizations actually use technology in their everyday work.<sup>83</sup> Practice scholars typically accept many of the assumptions of social construction, mutual influence, and co-construction that underlie much recent historical work on consumption and technology use. By focusing on technology use, by business enterprises in addition to individuals, we can contribute to this strain of modern management scholarship.

To articulate the connections between historical work and contemporary management fields, business historians need to find some ways to communicate to management audiences as well as to other business historians.<sup>84</sup> One method is presenting historical studies at

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Technology: A Comparative Case Study of Geographic Information Systems in County Government," *Information Systems Research* 7, no. 1 (1996): 93–110; Stephen R. Barley, "Technology as an Occasion for Structuring: Evidence from Observation of CT Scanners and the Social Order of Radiology Departments," *Administrative Science Quarterly* 31 (March 1986): 78–108.

81. For example, Robey, Ross, and Boudreau, "Learning to Implement Enterprise Systems: An Exploratory Study of the Dialectics of Change."

82. The interest of such scholars in firm adoption and use of earlier, pre-computer information systems and technologies by firms is demonstrated both by requirements to study that history in the new Information Schools (e.g., University of Michigan's School of Information required doctoral course includes historical readings) and by acceptance of historical symposia by the Organizational Communication and Information Systems (OCIS) Division of the Academy of Management (e.g., "Historical Research: A Method for Today," symposium co-sponsored by the OCIS and Management History divisions at the Academy of Management, Aug. 2003, Seattle, Wash.).

83. Theodore R. Schatzki, Karin Knorr Cetina, and Eike von Savigny, eds., *The Practice Turn in Contemporary Theory* (London, 2001); Wanda Orlikowski, "Knowing in Practice: Enacting a Collective Capability in Distributed Organizing," *Organization Science* 13, no. 3 (2002): 249–73.

84. The conversation should, of course, go both ways. We can and should also learn from the theoretical perspectives used by scholars in business schools. Historians of business and technology have begun to incorporate questions and theoretical frameworks from social scientists in business schools as well as social science departments. Philip Scranton, for example, has drawn on several social theorists (Giddens, Foucault, and Bourdieu) whose meta-theories also underpin some contemporary business literature, as well as on empirical literature by Clifford Geertz, Mark Granovetter, and Paul DiMaggio (see, e.g., Philip Scranton,

meetings such as the Academy of Management.<sup>85</sup> I am currently pursuing another method—coauthoring historical papers with individuals in specific management areas. I have long collaborated with colleagues in IT to study contemporary adoption and use of electronic communication media by individuals and groups, occasionally drawing on historical data for illustration.<sup>86</sup> Recently, however, I have also collaborated with a doctoral student in technological innovation to write a paper in which his theory informs and is informed by historical data and arguments from my study of insurance use of early computers.<sup>87</sup> That paper has been accepted for presentation to the Academy of Management in August 2006, and we also intend to revise it for submission to a major management journal. Although publication in such venues is very difficult to achieve, it is also very visible. I believe that business historians need to try for such visibility to make our methodology more acceptable in business schools. Moreover, if business historians do not make such efforts to reach out to contemporary management fields, the little history that gets incorporated into the management literature and curriculum will come from sociologists rather than from business historians.<sup>88</sup> It is ultimately in our interest to strengthen the field's position in business schools through such visibility.

## Conclusion

In this paper, I argue that business historians have an opportunity to take the demand-side turn farther in two particular areas: (i) redefining

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“Determinism and Indeterminacy in the History of Technology,” *Technology and Culture* 36, no. 2 (1995), Supplement [“Snapshots of a Discipline: Selected Proceedings from the Conference on Critical Problems and Research Frontiers in the History of Technology, Madison, Wisconsin, Oct. 30–Nov. 3, 1991”]: S31–S53). My *Control Through Communication* was influenced by the issues of contemporary IT and *Structuring the Information Age* is informed by structuration theory (Anthony Giddens, *The Constitution of Society: Outline of the Theory of Structuration* [Berkeley, Calif., 1984]), which I came to know through the work of my management school colleague Wanda Orlikowski (see, e.g., her “Using Technology and Constituting Structures”).

85. See, for example, JoAnne Yates, “The Adoption and Use of Computers in Life Insurance: A Historical Perspective,” presented in the 2003 AOM symposium on “Historical Research: A Method for Today,” Seattle, Wash.

86. JoAnne Yates and Wanda J. Orlikowski, “Genres of Organizational Communication: A Structural Approach to Studying Communication and Media,” *Academy of Management Review* 17 (April 1992): 299–326.

87. Kahl and Yates, “Radical Incrementalism: Factoring Customer Use into Technological Change.”

88. See, for example, Mauro Guillen, *Models of Management: Work, Authority, and Organization in a Comparative Perspective* (Chicago, 1994).



technology users to include business enterprises and (ii) looking at technology use beyond the point of apparent closure. Although I have focused on technology use, I believe that scholars of consumption in general can also benefit from these recommendations by applying the techniques of consumption history to firms as well as individuals and by looking beyond the point of purchase to focus more extensively on use by firms and individuals.

Such approaches are not without potential pitfalls. We will need to use our knowledge of the complexities of business enterprises as we examine firms as technology users and consumers. Otherwise, we run the danger of reifying organizations as monolithic rational entities or as larger “individuals,” potentially ignoring the real role of individual agency within organizations. Similarly, we need to be clear about what we are attempting to illuminate as we examine actual firm (and individual) use or consumption. Some of us will be interested in how such use shapes the technology, whereas others will focus on what use tells us about the user. Studying a particular user firm or set of firms will not always reveal a significant influence on a technological artifact, for example. It may, however, still reveal a great deal about the user firm and industry, as well as about firm and national culture and social issues. As we study actual use, we need to be clear about what roles and levels in the firm we are and are not examining, whether for reasons of available documentation or of interest. We do not want to make claims beyond what we can substantiate.

If we expand our research into these new areas, however, I believe that we will increase our points of contact with scholars of contemporary management. By making our work more visible to researchers in business schools, we can help rebuild an important market for business historians—a market that can provide jobs for us now and for our students in the future.

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## SISTEM BISNIS ELEKTRONIK

Saat ini dunia perdagangan tidak lagi dibatasi dengan ruang dan waktu. Mobilitas manusia yang tinggi menuntut dunia perdagangan mampu menyediakan layanan jasa dan barang dengan instan sesuai dengan permintaan konsumen. Untuk mengatasi masalah tersebut maka kini muncul transaksi yang menggunakan media internet untuk menghubungkan antara produsen dan konsumen. transaksi melalui internet ini dikenal dengan nama Bisnis Elektronik atau E-Business.

**E-bisnis** (Inggris: *Electronic Business, atau "E-business"*) dapat diterjemahkan sebagai kegiatan bisnis yang dilakukan secara otomatis dan semiotomatis dengan menggunakan sistem informasi komputer. Istilah yang pertama kali diperkenalkan oleh Lou Gerstner, seorang CEO perusahaan IBM ini, sekarang merupakan bentuk kegiatan bisnis yang dilakukan dengan menggunakan teknologi Internet. E-bisnis memungkinkan suatu perusahaan untuk berhubungan dengan sistem pemrosesan data internal dan eksternal mereka secara lebih efisien dan fleksibel. E-bisnis juga banyak dipakai untuk berhubungan dengan suplier dan mitra bisnis perusahaan, serta memenuhi permintaan dan melayani kepuasan pelanggan secara lebih baik.

Sistem Bisnis Elektronik atau yang lebih dikenal dengan nama E-Business merupakan kegiatan berbisnis oleh organisasi, individu atau pihak-pihak terkait yang menggunakan media teknologi informasi seperti internet untuk menjalankan dan mengelola proses bisnis sehingga dapat memberikan keuntungan berupa keamanan, fleksibilitas, integrasi, optimisasi, efisiensi dan peningkatan produktivitas. Dimana kegiatan berbisnis oleh perusahaan atau individu yang bersangkutan tidak hanya berupa kegiatan pembelian, penjualan dan jasa saja, tapi juga meliputi pelayanan pelanggan dan kerja sama dengan rekan bisnis.

### PENGERTIAN SISTEM BISNIS ENTERPRISE

Sistem Bisnis Enterprise adalah sistem informasi yang diperuntukkan bagi perusahaan seperti perusahaan di bidang manufaktur maupun jasa yang berperan untuk mengintegrasikan dan mengotomatisasikan proses bisnis yang berhubungan dengan aspek operasi, produksi maupun distribusi di perusahaan yang bersangkutan. Ini berarti bahwa sistem ini nantinya akan membantu mengontrol aktivitas bisnis seperti penjualan, pengiriman, produksi,



manajemen persediaan, manajemen kualitas dan sumber daya manusia.

### **APLIKASI CROSS-FUNCTIONAL ENTERPRISE SYSTEM**

Sistem Lintas Fungsi Perusahaan atau yang lebih dikenal dengan Cross-Functional Enterprise System adalah sistem informasi yang melintas batas berbagai area fungsional suatu bisnis agar dapat mengintegrasikan serta mengotomatisasikan proses bisnis.

Salah satu aplikasi dari Cross-functional Enterprise System adalah Customer Relationship Management (CRM). Customer Relationship Management (CRM) merupakan aplikasi yang mengintegrasikan dan mengotomatisasikan berbagai proses pelayanan pelanggan dalam penjualan, pemasaran langsung, account and order management, dukungan dan pelayanan pelanggan.

Solusi CRM menyediakan fungsi-fungsi yang meliputi banyak hal untuk dapat mengatur, merencanakan dan membuat laporan di seluruh lingkup bidang penjualan, diantaranya:

1. Penambahan dan perubahan informasi mengenai pelanggan;
2. Mengakses data penjualan pelanggan dan data mengenai harga barang yang telah diberikan;
3. Mengakses data status mengenai keuangan pelanggan yang terakhir;
4. Mendeteksi dan memprediksi seluruh peluang-peluang sesuai dengan jalurnya;
5. Secara otomatis dapat menginformasikan daftar calon-calon pelanggan yang berpotensi;
6. Mendapatkan informasi yang kompetitif.

Mulai dari tahap penawaran barang sampai dengan membuat order penjualan dan pemenuhan order, CRM memberikan fungsi-fungsi yang dibutuhkan untuk memaksimalkan tingkat efisiensi kemampuan penjualan, seperti:

1. Memberikan penawaran dan melakukan kalkulasi penjualan;
2. Menjanjikan pengiriman barang;
3. Mengentry order penjualan;
4. Memproses pengembalian barang.

## **INTEGRASI APLIKASI ENTERPRISE (Enterprise Application Integration, EAI)**

**Integrasi Aplikasi Enterprise adalah** perangkat lunak/software yang menggunakan prinsip-prinsip arsitektur sistem komputer untuk satu set komputer aplikasi dalam suatu perusahaan.

Keuntungan :

1. Mengakses sistem informasi secara real time;
2. Meningkatkan organisasi dan proses bisnis yang mendukung;
3. Memudahkan pengembangan kegiatan perusahaan.

Kekurangan :

1. Biaya pembangunan terlalu tinggi, terutama untuk usaha kecil dan menengah (UKM);
2. EAI dalam pelaksanaannya memerlukan waktu yang lama dan banyak sumber daya;
3. Memerlukan banyak tenaga professional.

## **SISTEM PEMROSESAN TRANSAKSI**

Sistem pemrosesan transaksi (SPT) atau yang lebih dikenal dengan nama *Transaction Processing Systems* adalah bentuk sistem informasi yang berfungsi merekam semua aktivitas/kejadian di dalam perusahaan. meliputi mencatat data, memproses data dan menghasilkan informasi baku atau standart.

Sistem pemrosesan transaksi hampir selalu dimiliki oleh suatu perusahaan, organisasi, instansi pemerintah karena di dalam suatu perusahaan atau organisasi, transaksi selalu terjadi dan setiap transaksi yang terjadi harus dicatat.

### **Model Sistem Pemrosesan Transaksi :**

1. Perangkat input dapat terdiri atas berbagai alat, meliputi komputer, palmtop (PDA), semua jenis telpon dan facsimile;
2. Perangkat pemroses terdiri atas program komputer (yang bisa dipasang di dalam mesin ATM, komputer atau perangkat sejenis);
3. Perangkat keluaran meliputi berbagai jenis monitor (yang dapat menampilkan gambar atau tulisan), speaker (untuk menampilkan informasi berbentuk suara atau pesan) atau printer (untuk mencetak berbagai informasi yang perlu disimpan dalam jangka waktu lebih lama)
4. Berbagai bentuk dokumen yang digunakan untuk menyampaikan berbagai bentuk informasi kepada manajemen dan pihak lain

yang memerlukan informasi. Sudah tentu masing-masing pihak yang berkepentingan dengan perusahaan memerlukan informasi yang berbeda-beda, sehingga harus diberi informasi yang sesuai saja.

Tujuan sistem pemrosesan transaksi:

1. Mencatat setiap transaksi yang terjadi;
2. Mempercepat proses yang terjadi di dalam suatu perusahaan;
3. Menyediakan informasi yang akurat dan tepat waktu;
4. Meningkatkan kinerja dan layanan perusahaan.

## **SISTEM KOLABORASI ENTERPRISE**

Sistem kolaborasi enterprise (enterprise collaboration system) atau sistem kerja sama perusahaan adalah sebuah sistem yang menggunakan komunikasi elektronik, konferensi dan alat kerja sama untuk mendukung dan meningkatkan kerja sama antar tim dan kelompok kerja.

## **CONTOH KASUS**

Dalam penggunaan sehari-hari, **sistem bisnis enterprise** tidak hanya menyangkut e-dagang (perdagangan elektronik atau e-commerce) saja. Dalam hal ini, sistem bisnis enterprise lebih merupakan sub bagian dari e-bisnis, sementara sistem bisnis enterprise meliputi segala macam fungsi dan kegiatan bisnis menggunakan data elektronik, termasuk pemasaran Internet (e-pemasaran). Sistem bisnis enterprise lebih berfokus pada kegiatan transaksi bisnis lewat www atau Internet. Dengan menggunakan sistem manajemen pengetahuan, sistem bisnis enterprise mempunyai goal untuk menambah *revenue* dari perusahaan.

Kami memilih media indonesia sebagai contoh kasus pada materi tugas kami. Telah kita ketahui bahwa media indonesia mempunyai fasilitas e-bisnis. Dengan adanya e-bisnis media indonesia tidak hanya menjalankan proses bisnis utamanya yaitu berupa penyediaan berita dan pendistribusian Koran Media indonesia ke berbagai daerah di Indonesia melalui media cetak saja, akan tetapi Media indonesia juga dapat menyajikan berita melalui media internet bahkan sebelumnya menyiarkan berita melalui televisi. Inilah salah satu keuntungan yang dapat diberikan oleh media indonesia Online. Seperti yang kita ketahui bersama bahwa perkembangan berita di internet sangat cepat, bahkan setiap detiknya selalu saja ada berita

baru yang belum dicetak oleh media cetak tapi sudah beredar di internet.

Keuntungan adanya e-bisnis pada media Indonesia:

1. Dapat mengakses berita secara real time;
2. Menyajikan berita yang terbaru dan selalu di update;
3. Tidak hanya dapat diakses oleh seluruh penduduk di Indonesia tapi juga dapat diakses oleh seluruh penduduk di dunia;
4. Dapat diakses 24 jam;
5. Memperkecil biaya produksi berupa kertas Media Indonesia.

## **SISTEM BISNIS FUNGSIONAL**

Adalah system informasi yang ditujukan untuk memberikan informasi yang berkaitan dengan bisnis perusahaan kepada kelompok orang yang berada pada bagian tertentu dalam perusahaan.

### **Berbagai Macam Aplikasi Dalam Sistem Bisnis Fungsional :**

#### **1. Sistem Pemasaran**

Adalah system informasi yang menyediakan informasi yang dipakai oleh fungsi pemasaran. Sistem ini mendukung keputusan yang berkaitan dengan pembauran pasar (marketing mix), yang mencakup:

**Produk** (barang dan jasa) yang perlu ditawarkan.

**Tempat** yang menjadi sasaran pemasaran.

**Promosi** yang perlu dilakukan.

**Harga Produk.**

#### **2. Sistem Manufacturing**

- MRP atau Material Requirement Planning adalah Sebuah system software yang berkemampuan mengintegrasikan beberapa system informasi yang berkaitan dengan produksi guna menyesuaikan dengan jadwal produksi secara otomatis.

Fungsi utama system MRP adalah memperbaiki system persediaan dan system penjadwalan produksi agar menghasilkan informasi yang akurat dan mutakhir guna keperluan manajemen produksi.

- MRP II atau Manufacturing Resources Planning adalah Sebuah system software komputer yang lebih mutakhir, yang bukan hanya meliputi manajemen persediaan dan penjadwalan produksi, tetapi juga melingkupi dan mengintegrasikan

perencanaan produksi dengan proses perencanaan keuangan.

Fungsi utama system MRP II adalah memberikan kemudahan dengan mengintegrasikan system manajemen persediaan material dan system penjadwalan produksi sebagai system yang terpadu dan menjadikan seluruh kegiatan yang berkaitan dengan manufacturing sebagai jaringan informasi interaktif.

### 3. Sistem Sumber Daya Manusia

Sistem Sumber Daya Manusia dibagi menjadi beberapa subsistem, diantaranya:

- Subsistem Penggajian (payroll), berkaitan dengan pembayaran gaji, upah, dan tunjangan.
- Subsistem Riset SDM, menangani penelitian mengenai suksesti, analisis dan evaluasi jabatan, serta penelitian tentang keluhan yang disampaikan oleh pegawai.
- Subsistem Intelijen SDM, menggunakan sumber informasi eksternal yang berhubungan dengan mitra kerja (stakeholder) yang mencakup pemerintah, serikat buruh, masyarakat umum, bahkan pesaing.
- Subsistem Perencanaan SDM, menangani identifikasi sumber daya manusia dalam perusahaan yang digunakan untuk melaksanakan sasaran jangka panjang perusahaan.
- Subsistem Perekrutan, menangani aktivitas yang berhubungan dengan penyeleksian calon pegawai.
- Subsistem Manajemen Tenaga Kerja, berhubungan dengan pengembangan SDM dalam hal keterampilan dan pengetahuan, melalui pelatihan-pelatihan atau pendidikan.
- Subsistem Pelaporan Lingkungan, digunakan untuk menghasilkan laporan yang dialamatkan untuk lingkungan perusahaan, terutama ditujukan kepada pemerintah dan serikat buruh.

### 4. Sistem Akuntansi

**Sistem akuntansi** adalah metode dan prosedur untuk mencatat dan melaporkan informasi keuangan yang disediakan bagi perusahaan atau suatu organisasi bisnis. Sistem akuntansi yang diterapkan dalam perusahaan besar sangat kompleks. Kompleksitas sistem tersebut disebabkan oleh kekhususan dari sistem yang dirancang untuk suatu organisasi bisnis sebagai akibat dari adanya perbedaan kebutuhan akan informasi oleh manajer, bentuk dan jalan transaksi laporan keuangan. Sistem

akuntansi terdiri atas dokumen bukti transaksi, alat-alat pencatatan, laporan dan prosedur yang digunakan perusahaan untuk mencatat transaksi-transaksi serta melaporkan hasilnya.

Operasi suatu sistem akuntansi meliputi tiga tahapan:

- Harus mengenal dokumen bukti transaksi yang digunakan oleh perusahaan, baik mengenai jumlah fisik maupun jumlah rupiahnya, serta data penting lainnya yang berkaitan dengan transaksi perusahaan.
- Harus mengelompokkan dan mencatat data yang tercantum dalam dokumen bukti transaksi kedalam catatan-catatan akuntansi.
- Harus meringkas informasi yang tercantum dalam catatan-catatan akuntansi menjadi laporan-laporan untuk manajemen dan pihak-pihak lain yang berkepentingan.

## 5. Sistem Manajemen keuangan

**Manajemen Keuangan** adalah suatu kegiatan perencanaan, penganggaran, pemeriksaan, pengelolaan, pengendalian, pencarian dan penyimpanan dana yang dimiliki oleh organisasi atau perusahaan. Manajemen keuangan berhubungan dengan 3 aktivitas, yaitu :

1. Aktivitas penggunaan dana yaitu aktivitas untuk menginvestasikan dana pada berbagai aktiva
2. Aktivitas perolehan dana yaitu aktivitas untuk mendapatkan sumber dana, baik dari sumber dana internal maupun sumber dana eksternal perusahaan
3. Aktivitas pengelolaan aktiva yaitu setelah dana diperoleh dan dialokasikan dalam bentuk aktiva harus dikelola seefisien.

## Contoh Kasus

Dalam kehidupan sehari-hari sistem bisnis fungsional dapat kita sajikan dalam aplikasi. Misalnya dalam bidang sistem manufacturing. MRT atau material requirement planing adalah sebuah sistem software yang berkemampuan mengintegrasikan beberapa sistem informasi yang berkaitan dengan produksi guna menyesuaikan dengan jadwal produksi secara otomatis. Fungsi utama sistem MRT adalah memperbaiki sistem kesediaan dan sistem penjadwalan produksi agar menghasilkan informasi yang akurat dan mempermudah dalam keperluan manajemen produksi.

## **MANFAAT BISNIS ELEKTRONIK**

### **1. Bagi organisasi**

- Memperluas pasar
- Menekan biaya kertas
- Terwujudnya spesialis bisnis
- Menekan biaya sediaan dan produksi
- Dapat menerapkan kostumisasi produk
- Menekan waktu pembayaran dan penerimaan produk
- Meningkatkan produktivitas
- Menekan biaya telekomunikasi

### **2. Bagi konsumen**

- Kesempatan transaksi lebih luas dan tak kenal waktu
- Memberikan pilihan produk dan pemasok lebih banyak
- Memungkinkan memperoleh produk lebih murah
- Pengiriman lebih cepat (real time)
- Memperoleh informasi produk lebih cepat
- Memungkinkan pelanggan dapat berinteraksi

### **3. Bagi masyarakat luas**

- Memungkinkan berbisnis dari rumah
- Beberapa barang bisa dijual lebih murah
- Memperoleh layanan yang mudah untuk diwujudkan
- Penyampaian jasa publik dapat dinikmati masyarakat