



**UNITED STATES  
SECURITIES AND EXCHANGE COMMISSION  
Washington, D.C. 20549**

**FORM 8-K**

**CURRENT REPORT**

**Pursuant to Section 13 OR 15(d) of The Securities Exchange Act of 1934**

**Date of Report (Date of earliest event reported) November 6, 2007**

**Brush Engineered Materials Inc.**

(Exact name of registrant as specified in its charter)

Ohio

(State or other jurisdiction  
of incorporation)

001-15885

(Commission  
File Number)

34-1919973

(IRS Employer  
Identification No.)

17876 St. Clair Avenue, Cleveland, Ohio

(Address of principal executive offices)

44110

(Zip Code)

Registrant's telephone number, including area code 216-486-4200

Not Applicable

(Former name or former address, if changed since last report.)

Check the appropriate box below if the Form 8-K filing is intended to simultaneously satisfy the filing obligation of the registrant under any of the following provisions (see General Instruction A.2. below):

- ☐ Written communications pursuant to Rule 425 under the Securities Act (17 CFR 230.425)
- ☐ Soliciting material pursuant to Rule 14a-12 under the Exchange Act (17 CFR 240.14a-12)
- ☐ Pre-commencement communications pursuant to Rule 14d-2(b) under the Exchange Act (17 CFR 240.14d-2(b))
- ☐ Pre-commencement communications pursuant to Rule 13e-4(c) under the Exchange Act (17 CFR 240.13e-4(c))

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### Item 7.01 Regulation FD Disclosure

On November 6, 2007, Brush Engineered Materials Inc., an Ohio corporation (the “Company”), updated the “Current Investor Update,” a slide presentation on its website, a copy of which is attached hereto as Exhibit 99.1. This slide presentation shows the Company’s corporate strategy and the financial results through the third quarter of 2007.

### Item 9.01 Financial Statements and Exhibits

Exhibits:

<u>Exhibit Number</u>	<u>Description of Exhibit</u>
99.1	Current Investor Update

### SIGNATURES

Pursuant to the requirements of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned hereunto duly authorized.

Brush Engineered Materials Inc.

November 6, 2007

By: Michael C. Hasychak  
Michael C. Hasychak  
Vice President, Treasurer and Secretary



## *Brush Engineered Materials Inc. Profile*

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- Publicly traded since 1956: NYSE-listed since 1972
- Founded 1931 as Brush Beryllium Company, recently celebrated 75th anniversary
  - Building off earlier pioneering technical work at Brush Laboratories
  - Initial scope was development of commercial markets
- With onset of WW II and post war period, significant growth in defense and eventually, aerospace applications
- Mid-70s: major expansion of new commercial markets
- Today, commercial markets represent 90% + of revenues



## *Brush Engineered Materials Inc. Profile*

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- A leading manufacturer of high performance specialty engineered materials and services ... *an enabling materials technology company*
- Operations, service centers and major office locations in North America, Europe and Asia
- Serving long-term growth oriented global markets from consumer electronics to heavy mining equipment



# *Brush Engineered Materials*

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## A common culture across our operating companies

- Collaborating with customers worldwide to solve material application challenges ... *with a focus on enabling technology and services*
- "Own" a Niche orientation ... non-commodity
- Focus on global growth and service
- Realigning product and service portfolios towards favorable trends ... targeted to achieve strong profitable growth
- Employees who are *passionately* focused on exceeding customer expectations





# Overview

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- Company: Brush Engineered Materials Inc.  
founded 1931, publicly traded since 1956
- NYSE Ticker: BW
- Shares Outstanding: Approximately 20.7 million at 9/28/07
- Market Cap: Approximately \$1.0 billion at 9/28/07
- Component of: S&P Super Composite 1500  
Russell 2000  
S&P Small Cap 600
- Annual Revenue: \$763 million @ 12/31/06, over \$ 1 billion expected  
in 2007
- Diluted EPS: \$2.45 for 2006 which includes a favorable tax valuation  
allowance benefit of \$1.07, or \$1.38 excluding the  
allowance
- Debt to Total  
Capitalization: 11% at 9/28/07



## *Third Quarter 2007 Recap*

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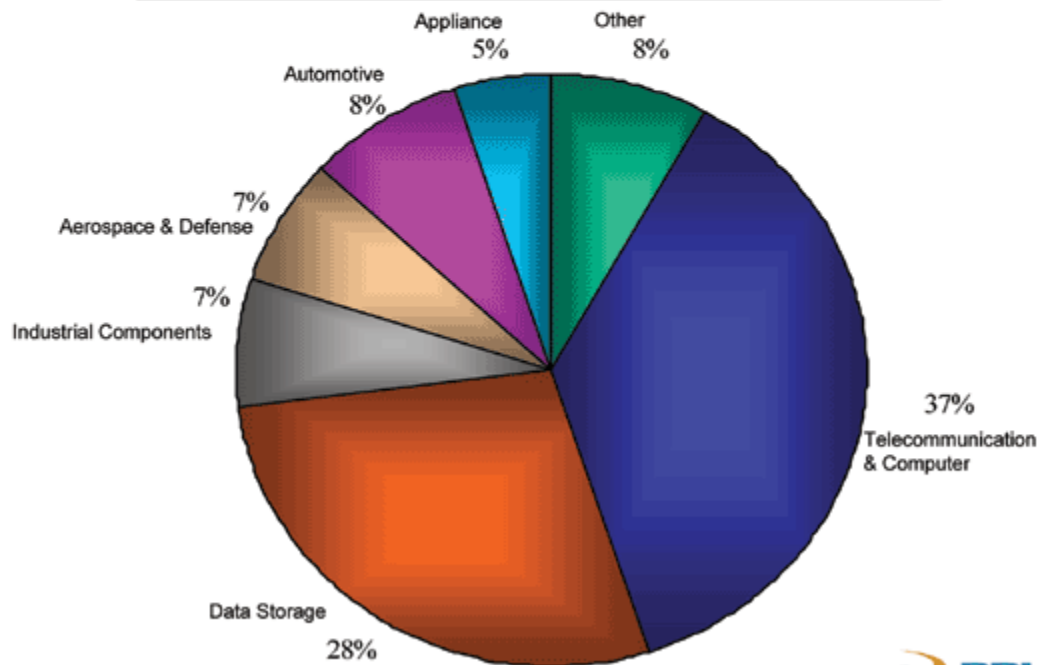
- Quarterly Revenue
  - Up \$30.5 million or 15% compared to third quarter 2006
  - The nineteenth consecutive quarter where sales were higher than the comparable quarter the previous year
  - Metal prices accounted for approximately 2% of the sales increase and organic growth was 13%
  - International sales were 40% of the total
- EPS
  - Earnings per share of \$0.48 diluted compared to \$0.35 diluted for the third quarter of 2006



# *Global Leader in High Performance Engineered Materials*

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## Q-3 2007 Estimated Revenue by Market



# *Advancing the World's Technologies*

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- Strong customer collaboration ... providing enabling technology solutions and service
- Materials that meet design challenges requiring
  - Strength
  - Electrical conductivity
  - Weight reduction
  - Reflectivity
  - Reliability
  - Miniaturization
  - Corrosion resistance
  - Thermal conductivity
- Targeting growth applications in growing markets



# Typical End Uses

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Defense

Notebook computers  
& network servers



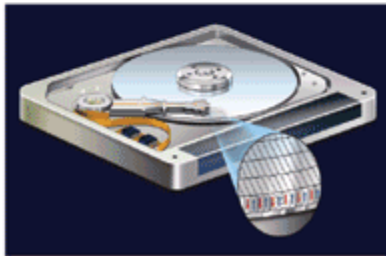
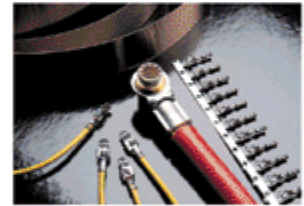
Cellular phones, I-Pods and other  
wireless communication devices



Commercial  
Aerospace

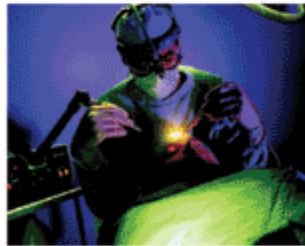


Electronic components  
in cars and trucks

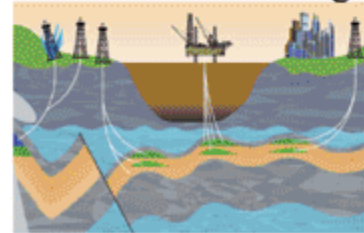


Data Storage

Medical  
Devices



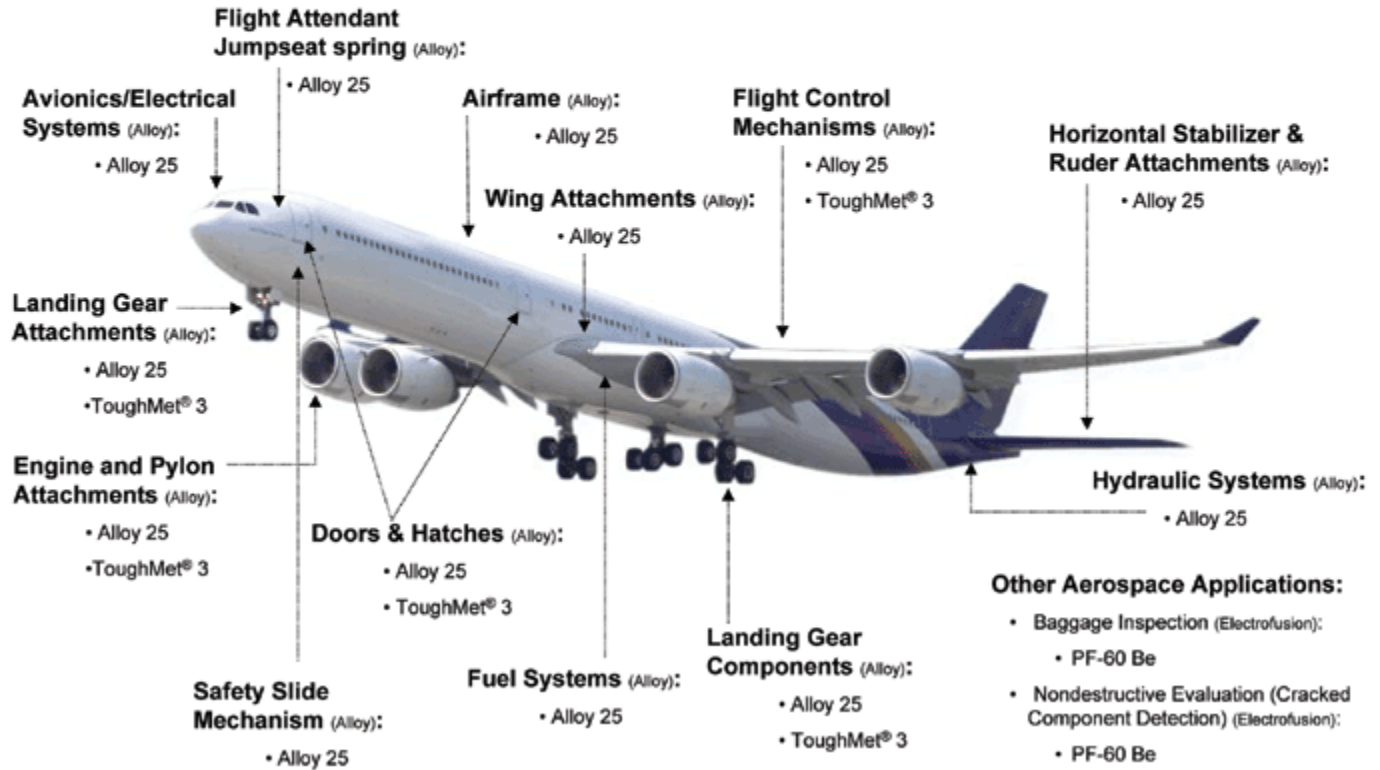
Industrial products for  
Oil & Gas and Mining



**BRUSH**  
ENGINEERED MATERIALS

# Applications - Aerospace

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# Applications - Oil & Gas

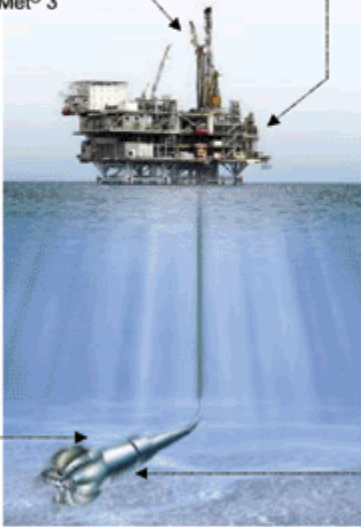
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## Wellhead Control Equipment (Alloy):

- Brush Alloy 25
- ToughMet® 3

## Structural Rig Components (Alloy):

- ToughMet® 3



## Drill Bits (Alloy):

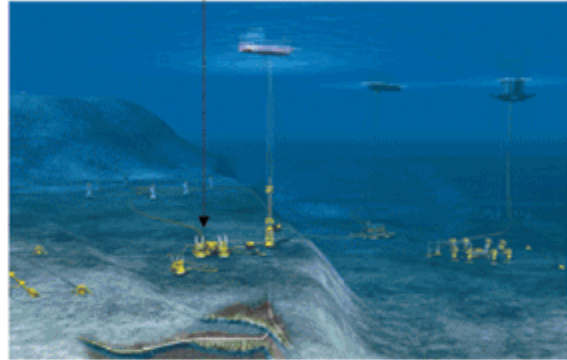
- Brush Alloy 25
- ToughMet® 3

## Directional Drilling Equipment (Alloy):

- Brush Alloy 25
- ToughMet® 3

## Under Water Wellhead Equipment (Alloy):

- Brush Alloy 25
- ToughMet® 3



## Other Oil & Gas Applications:

- **Elemental Analysis** (Electrofusion):
  - PF-60 Be; IF-1 Be
- **Down Hole X-Ray Inspection** (Electrofusion):
  - PS-200 Be

# Applications - Cell Phones

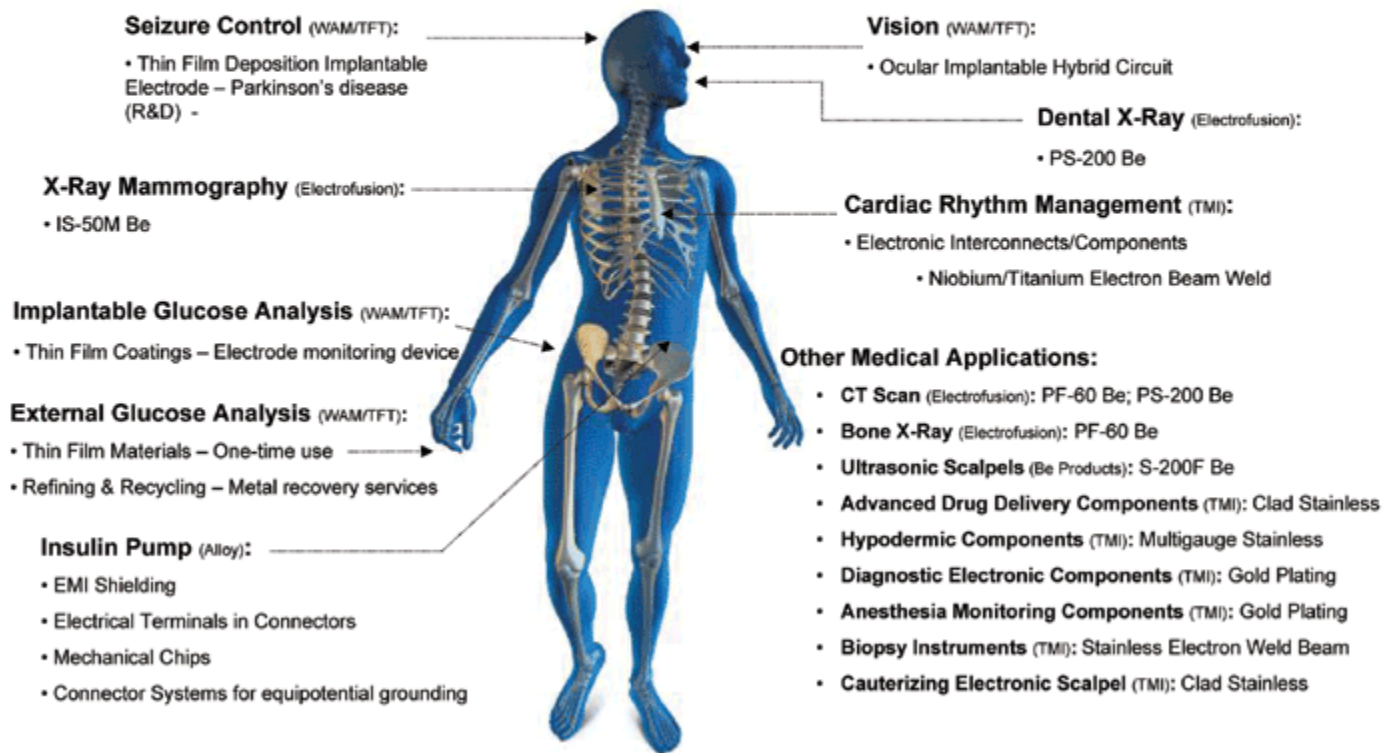
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# Applications - Medical

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## *Investment Highlights and Strengths*

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- Global Leader in High Performance Engineered Materials
- Unique Status as Fully Integrated Provider of Beryllium-Containing Products
- Broad Metallurgical Capabilities in Precious and Non-precious Metals
- Global Sales and Distribution Network
- Sales Based on End User Specifications
- Niche Oriented Product Offerings
- Strong Value Proposition in Served Markets
- Strategic Customer Relationships
- Significant Technical Capabilities
- Positive Long-term Market Trends
- Strong Growth in New Products, a culture of Innovation
- High Barriers to Entry
- Capacity to Support Profitable Market Growth
- Strong Balance Sheet
- Strong Cash Flow



# *Brush Engineered Materials Inc.*

## *Organized into Four Separate Reportable Segments*

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- **Advanced Material Technologies and Services**

Advanced Material Technologies and Services consists of Williams Advanced Materials Inc. (WAM)

- **Specialty Engineered Alloys**

The Specialty Engineered Alloys segment consists of Alloy Products which includes bulk and strip form copper-based alloy products, hydroxide and the Company's line of ToughMet® materials

- **Beryllium and Beryllium Composites**

The Beryllium and Beryllium Composites segment consists of Beryllium Products including beryllia ceramic manufactured by Brush Ceramic Products Inc.

- **Engineered Material Systems**

The Engineered Material Systems segment is comprised of Technical Materials, Inc.



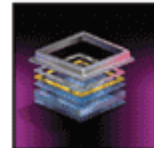
*Advanced Material Technologies and Services*  
*YTD Q3-2007 Sales: \$384.4 million*

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**Williams  
Advanced  
Materials  
(WAM)**

**\$384.4 million; 54%**

- Precious metal and specialty alloys for high reliability applications
- Products include precious and non-precious metal vapor deposition targets, frame lid assemblies, clad and precious metal preforms, high-temperature braze materials and ultra fine wire
- Industries served include magnetic and optical data storage, semi-conductor, performance film, wireless/photronics and precision optics



 **BRUSH**  
ENGINEERED MATERIALS

## Specialty Engineered Alloys

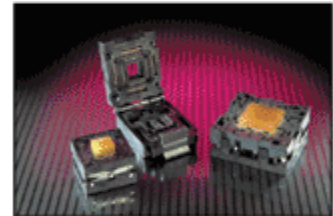
### YTD Q3-2007 Sales: \$220.0 million

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#### Alloy Products

**\$220.0 million; 31%**

- Copper and nickel-based alloy materials, most of which incorporate beryllium
- Strip products are used in electronic connectors including PDA's, wireless communications equipment, notebook and network computers and automotive electronics that require high strength, formability and electrical conductivity
- Bulk products are rod, bar, tube and plate products for heavy equipment and aerospace bushings and bearings, oil & gas components and plastic mold materials where strength, corrosion and wear resistance, thermal conductivity and lubricity are critical performance requirements



 **BRUSH**  
ENGINEERED MATERIALS

## *Beryllium and Beryllium Composites*

### *YTD Q3-2007 Sales: \$46.8 million*

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#### **Beryllium Products**

**\$46.8 million; 7%**

- Pure beryllium and aluminum-beryllium composites for high-performance applications, principally for medical, space and defense applications where stiffness, strength, lightweight, dimensional stability, reflectivity and x-ray/nuclear properties are critical.



## *Engineered Material Systems*

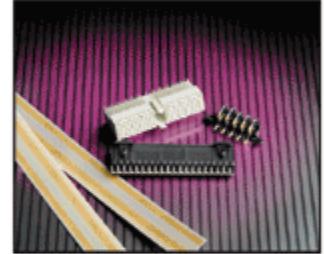
### *YTD Q3-2007 Sales: \$52.2 million*

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#### **Technical Materials, Inc. (TMI)**

##### **\$52.2 million; 7%**

- Engineered material systems, including clad, plated and electron beam welded metals used in demanding connector applications
- Combines precious and non-precious metals in strip form for use in complex electrical components for telecommunications systems, computers and automotive electronics

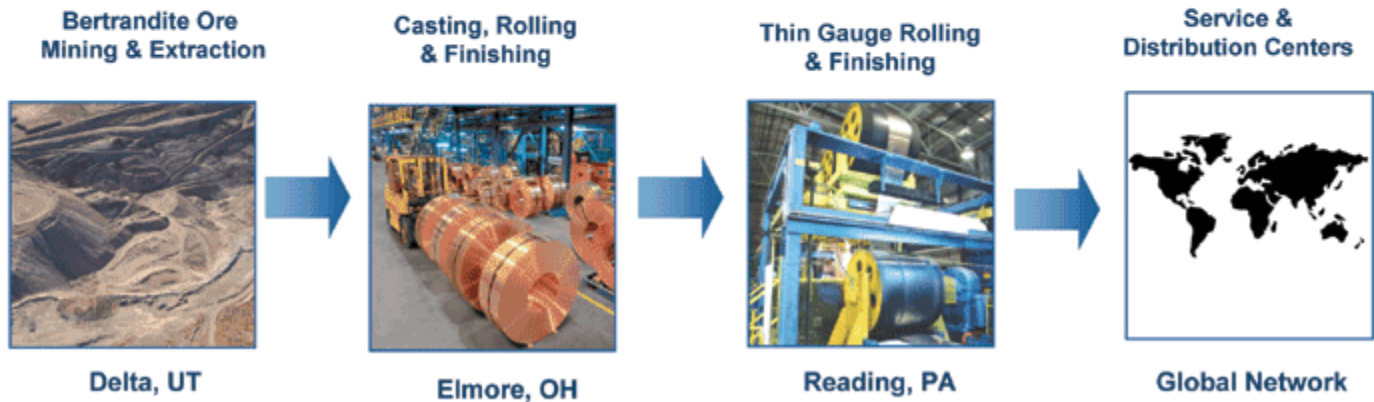




# *Fully Integrated Beryllium Producer*

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- Beryllium and beryllium alloys are critical to many high performance applications
  - Strong
  - Lightweight
  - Good formability
  - High reliability
  - Thermal and electrical conductivity
  - Corrosion and wear resistant
- Operate the only active bertrandite ore mine in the developed world
  - 7,500 acres in Juab County, Utah
  - Approximately 100 years of proven reserves





## *Key Financial Statistics*

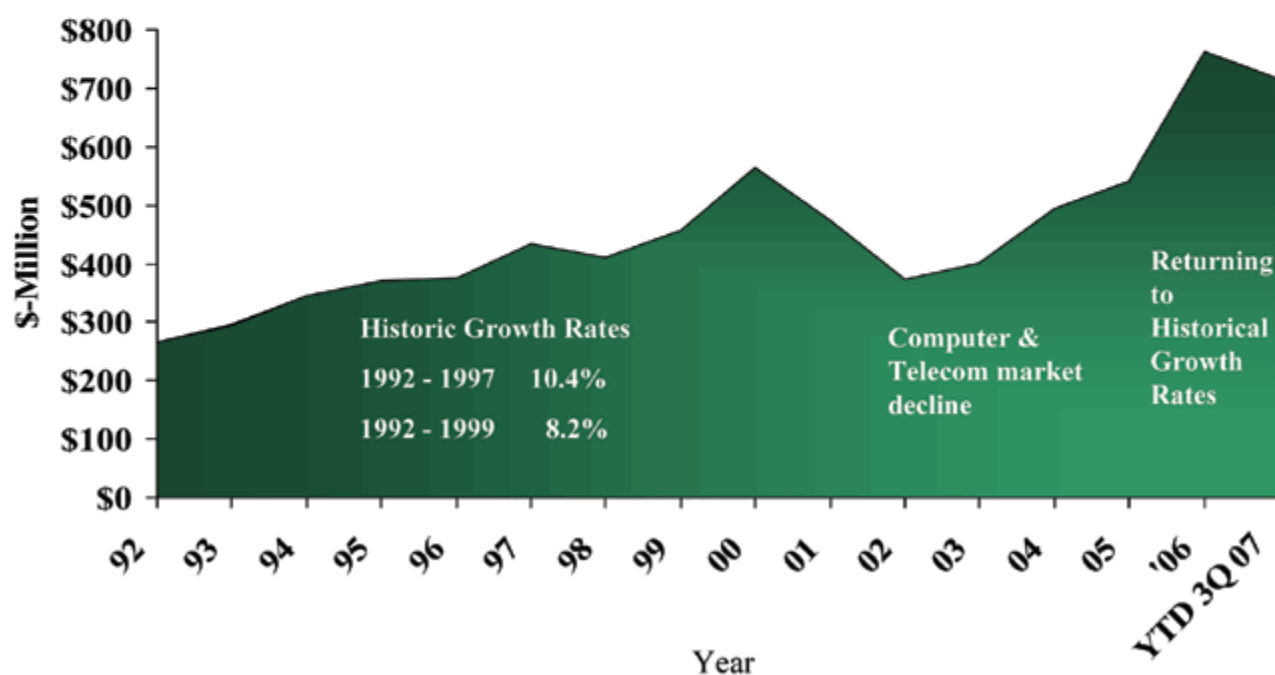
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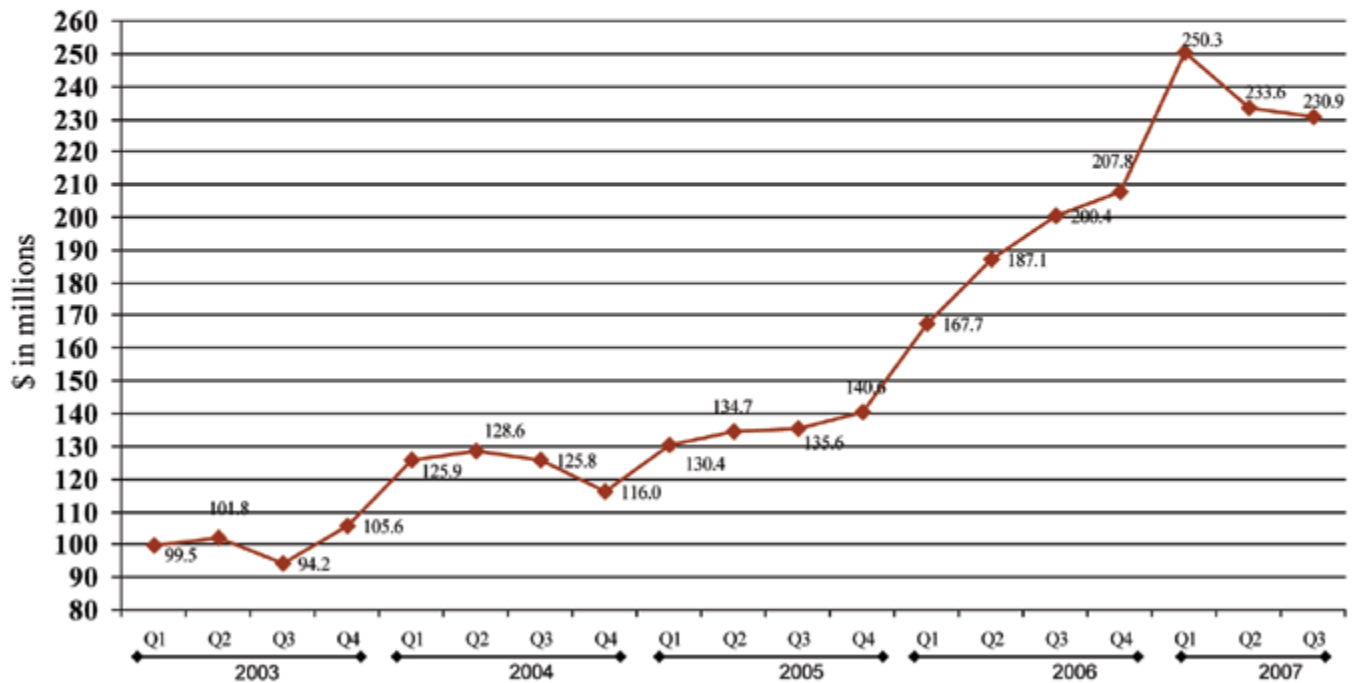
\$in millions	<u>2004</u>	<u>2005</u>	<u>2006</u>	YTD Q3 <u>2007</u>
Sales	\$496.3	\$541.3	\$763.1	\$714.8
EBIT	25.0	19.5	43.8	65.6
EPS	.86	.92	2.45	1.98
G.P.%	22.4%	20.3%	21.2%	22.0%
O.P.%	5.0%	3.6%	5.7%	9.2%
Depreciation & Amort.	23.8	22.8	24.0	18.2
Capital Spending	10.1	14.2	15.5	24.4
Debt	72.5	57.2	48.9	40.2
Cash	49.6	10.6	15.6	16.9
Debt/Total Cap.	26%	21%	15%	11%

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*In 2001, the computer and telecom market decline drove sales back to mid-90's levels*  
*In 2003, growth began to return to historical rates* *In 2004-2007 growth accelerated*



*The 3rd quarter 2007 was the nineteenth consecutive quarter where sales were higher than the comparable quarter of the prior year.*



## *Positive Market Trends*

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- Electronic component manufacturers are being driven by end user demands to produce products that are smaller, lighter and faster
- Increased electronic component performance characteristics require materials that have enhanced mechanical, electrical and thermal properties
- Growing opportunity for thin film physical vapor deposition (PVD) products in the data storage, semiconductor, solar and medical markets
- Spending and conditions in the telecommunications and computer market have improved
- Conditions continue to be strong in the oil and gas, undersea, aerospace and heavy equipment markets.

*Brush has generated year-over-year sales growth in nineteen consecutive quarters*

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## *Capacity to Support Profitable Market Growth*

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*Well-positioned to support rapid sales growth with minimal incremental cash investment*

- Operating with available excess capacity in Alloy Products
    - Minor debottlenecking investments are required
  - WAM's Brewster, New York facility doubled its capacity in 2007
-

## *Our on-going value creation initiatives are focused in three key areas*

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### Growth

- Expanding and diversifying the revenue base
  - Targeting niche growth applications in growing markets
  - New product innovation and service
- Ongoing global expansion
- Strategic acquisitions

### Margin Improvement

- Lean sigma-driven operating efficiency improvement
- New higher value add products
- Cost reductions

### Fixed and Working Capital Utilization

- Inventory turn improvement
  - Lean sigma-driven factory utilization gains
-

*New Products - Growing Applications in Growing Markets (all >10% annual growth expected) ... examples*

Product	Market	Driver	Division
PVD Magnetic Media	Hard Disk Drive	Increase Storage capacity	WAM
PVD - UMB	Consumer Electronics	Miniaturization	WAM
PVD - Evap Pro	Compound Semi-conductor	Miniaturization	WAM
Chamber Service	PVD Customers	Service demands	WAM
PVD - Visilid	Optics	IR Wavelength	WAM
Alloy 390 Strip	Portable Elec	Miniaturization and	Alloy
ToughMet®	O&G, Aerospace, Heavy Equipment	Reliability	Alloy
Clad Stainless-Aluminum Strip	Hard Disk Drive	Increase storage capacity	TMI

## *Balance Sheet*

(\$ in millions)

YTD  
3<sup>RD</sup> Qtr  
2007

	<u>2000</u>	<u>2004</u>	<u>2005</u>	<u>2006</u>	
Balance Sheet Debt	\$128.4*	\$ 72.5	\$57.2	\$48.9	\$40.2
Debt to Debt Plus Equity	36%	26%	21%	15%	11%

\*2000 Balance Sheet debt includes major equipment lease

\*\*Note - Excludes precious metal consignment  
and other leases of:

\$18.9	\$30.2	\$55.5	\$72.1	\$56.3
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# Segment Sales Review

\$ in millions						
	2005		2006		YTD Q3 2007	
	\$	%	\$	%	\$	%
Advanced Material Technologies and Services	\$209.5	38%	\$343.4	45%	\$384.4	54%
Specialty Engineered Alloys	213.8	39%	275.6	36%	220.0	31%
Beryllium and Beryllium Composites	53.1	10%	57.6	7%	46.8	6%
Engineered Material Systems	49.9	9%	68.7	9%	52.2	7%
Other	<u>14.9</u>	<u>4%</u>	<u>17.8</u>	<u>3%</u>	<u>11.4</u>	<u>2%</u>
TOTAL	\$541.3	100%	\$763.1	100%	\$714.8	100%



# Segment Earnings

\$ in millions	YTD Q3		
	<u>2005</u>	<u>2006</u>	<u>2007</u>
Advanced Material Technologies and Services	\$20.4	\$30.5	\$49.1
Specialty Engineered Alloys	(5.4)	7.9	9.3
Beryllium and Beryllium Composites	9.8	7.4	6.8
Engineered Material Systems	0.7	2.7	3.0
Other	<u>(6.0)</u>	<u>(4.7)</u>	<u>(2.6)</u>
TOTAL	\$19.5	\$43.8	\$65.6



*Brush Engineered Materials Inc.*  
*Organized into Four Separate Reportable Segments*

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- ***Advanced Material Technologies and Services***
  - Specialty Engineered Alloys
  - Beryllium and Beryllium Composites
  - Engineered Material Systems
-

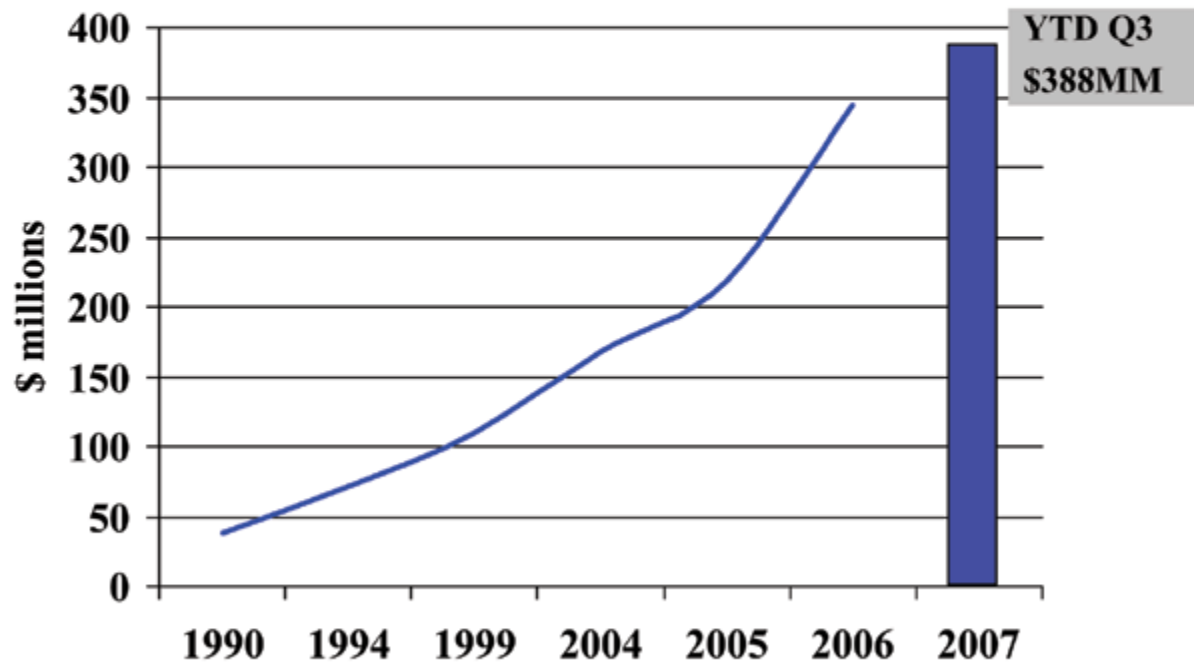
# *What We Do*

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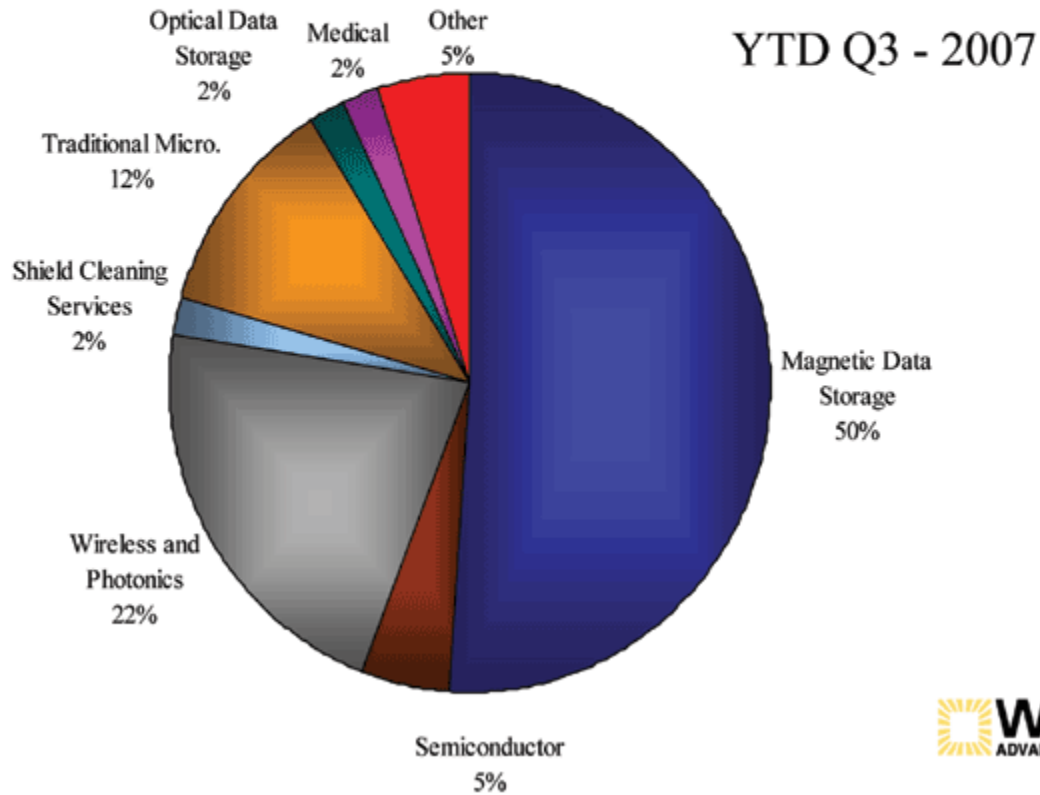
Williams Advanced Materials develops, manufactures and markets materials and services of unique value for the Magnetic and Optical Data Storage, Wireless, Photonics, Semiconductor, Optics, Security, Hybrid Microelectronics, Defense and Performance Coating industries. We also support emerging technologies such as Photovoltaic, TFT/LCD, Memory, FCCL, Medical and Nanotechnology. Williams' products are primarily based on specialty metal products used in high reliability and performance applications.



# *Sales History*



# *Revenue by Market*

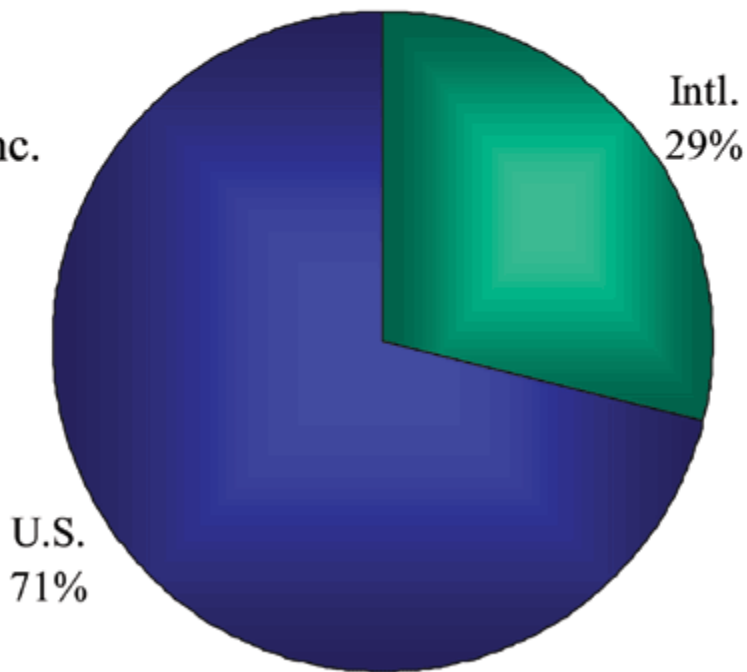


# *International/Domestic Revenue*

## *Q3 - 2007*

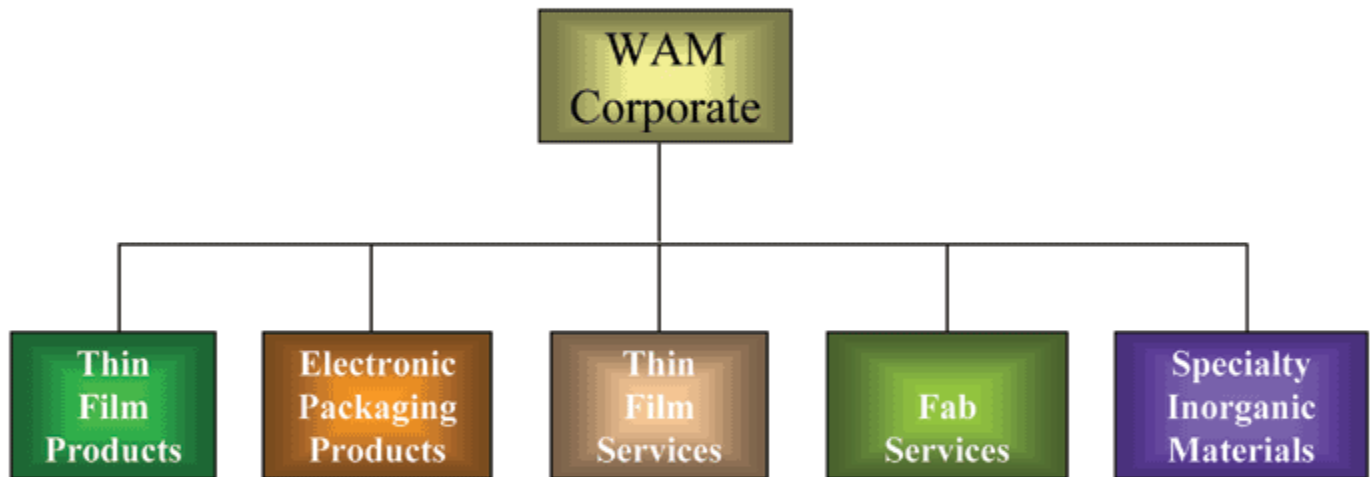
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Williams  
Advanced  
Materials Inc.



# *2007 Business Structure*

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# *WAM Headquarters*

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## Buffalo, NY USA - Manufacturing Facility

- 100,000 Sq. Ft. overall, 6,500 Sq. Ft. of cleanroom, state-of-the-art machining/ milling/rolling/stamping/ cladding centers, target bonding, hydrostatic wire extrusion, high purity refining/recycling, metals casting, automated plating, full analytical capabilities, product Research & Development.



# *Specialty Alloys Operations*

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- Wheatfield, NY USA- *Williams Specialty Alloys*
  - 30,000 Sq. Ft. with volume vacuum casting, rolling, annealing, powder atomizing and machining. 10 acres for expansion.



# *Williams Thin Film Products Operations*

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- Brewster, NY USA –
  - 80,000 Sq. Ft. with vacuum melting, hot-pressing, milling, hot & cold rolling, automated machining, grinding, powder metallurgy lab, particle sizing and target bonding capabilities.



# Far East Operations

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Singapore - *WAM Far East Pte. Ltd.*

- Target bonding, bonding wire production, Combo-Lids® assembly



Subic Bay, Philippines

- Combo-Lids®, low-cost lids and preform - assembly, inspection and packaging.



Taoyuan County, Taiwan - *WAM Taiwan*

- Target bonding, evaporation materials & bonding wire.



# Suzhou - China

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- Suzhou, China
    - 20,000 Sq ft.
    - Target & Evaporation materials manufacturing, Target bonding services, Distribution, Warehousing, Sourcing, MgF manufacturing and packaging
    - Located near Shanghai Airport and close to many technology centers located in Eastern China.
    - Markets Serve: Semiconductor, Compound Semiconductor, UBM, MEMS, Data Storage, Security and Optics
-

# OMC - Limerick

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- Limerick, Ireland – OMC Scientific, Ltd.
  - Subsidiary of WAM
  - Provides precision parts cleaning and reconditioning services for film Physical Vapor Deposition (PVD) customers in Europe.
  - Unique technology applied to opportunities in North America and Asia.
  - Efforts focused in the semiconductor, magnetic media and other based markets.



# OMC- Czech

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- Louny, Czech Republic
    - 20,000 Sq ft.
    - Provides precision parts cleaning and reconditioning services for film Physical Vapor Deposition (PVD) customers in central and eastern Europe
    - State of the art cleaning, stripping and packaging operations
    - Markets Serve: Semiconductor, Compound Semiconductor, UBM, MEMS, Data Storage
-



# *Thin Film Technology (TFT)*

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- Buellton, CA
  - Subsidiary of WAM
  - Thin film coating and substrate patterning.
  - Visi-Lid™ supply chain management.
  - Capabilities: Electron Beam Evaporation, DC/RF Magnetron Sputtering, Photolithography (Substrate Patterning), Dicing, Tooling design, In House Machine shop





# CERAC

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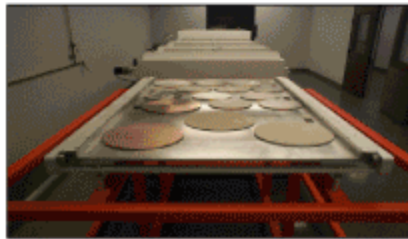
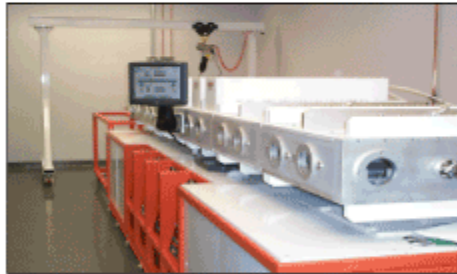
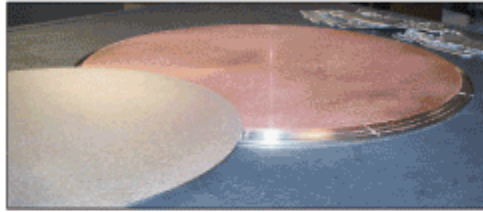
- Milwaukee, WI
  - Subsidiary of WAM
  - Physical Vapor Deposition (PVD) materials for ophthalmic, optic and performance applications.
  - Specialty Inorganic Materials
  - Unique technologies in chemical and powder processing



# *Target Bonding Centers*

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- Localized debonding/  
bonding of PVD targets to  
backing plates:
  - Buffalo, NY
  - Brewster, NY
  - Santa Clara, CA
  - Limerick, Ireland
  - Singapore
  - Taiwan
  - China



# *Global Service and Support*

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- **Regional Offices (Sales and Applications Engineering support)**

Buffalo, NY	Tokyo, Japan
Brewster, NY	Taoyuan, Taiwan
Dallas, TX	Singapore
Tucson, AZ	Manila, Philippines
Santa Clara, CA	London, England
Buellton, CA	Seoul, Korea
Milwaukee, WI	Limerick, Ireland
Suzhou, China	Louny, Czech Republic

- **Worldwide Representatives**

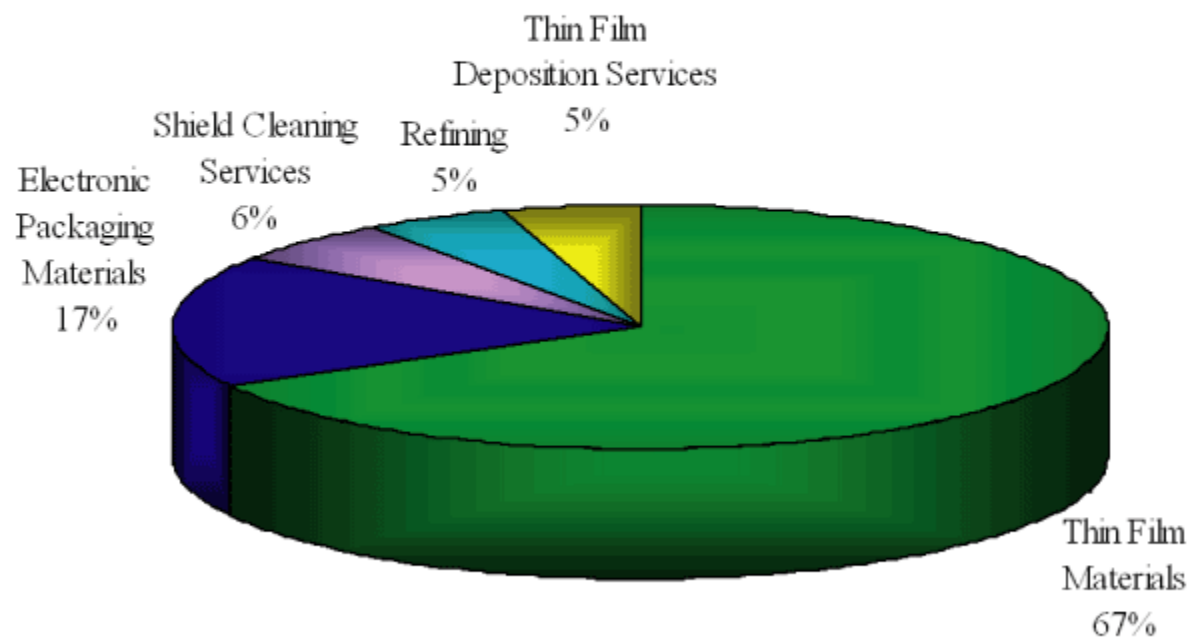
Italy	France	Germany
India	China	
Sweden	Israel	



# *Q3- 2007*

## *Product Mix*

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# Thin Film Products

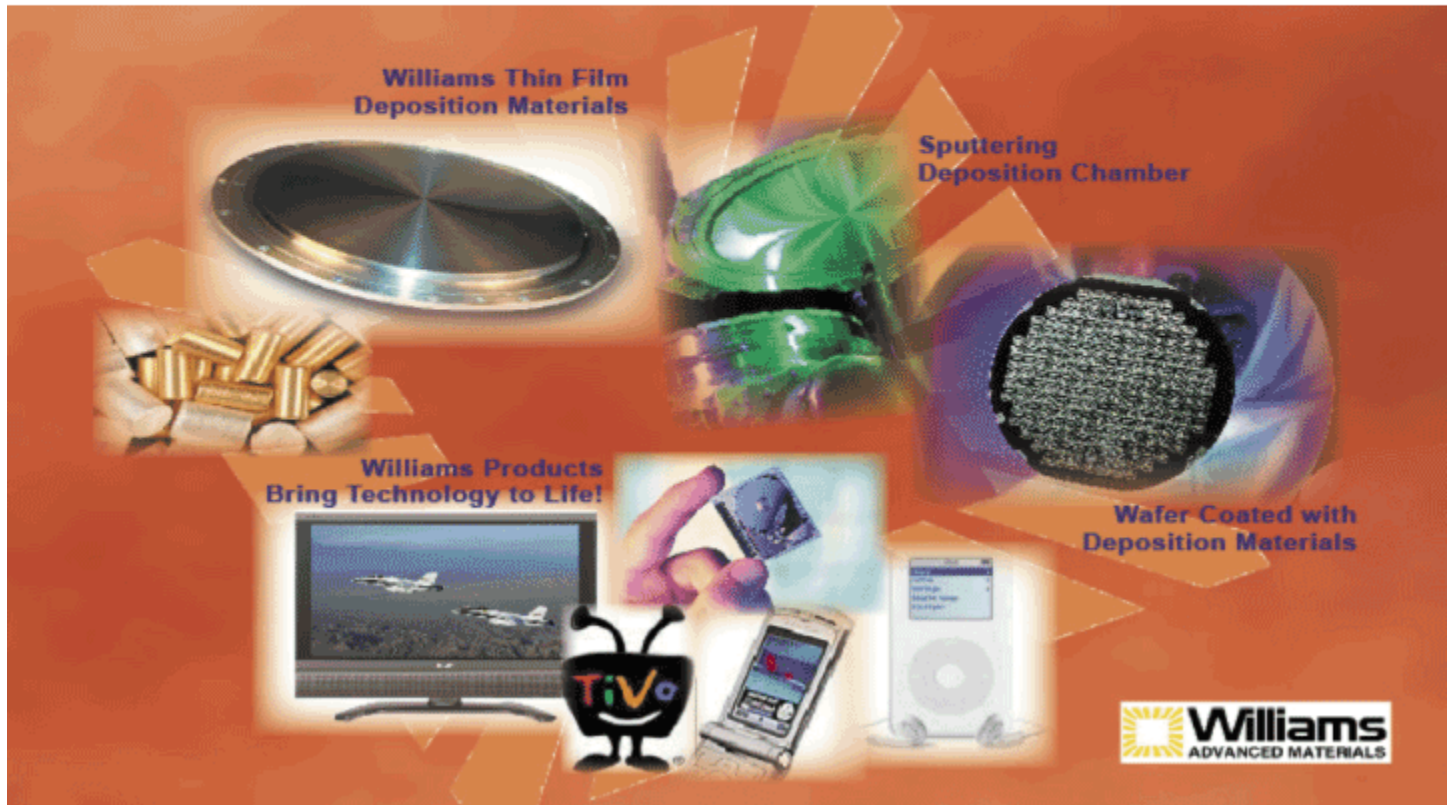
- **PVD Materials**
  - Precious Metal Target Materials
  - Non-Precious Metal, Cermets, Ceramics
    - Vacuum Induction Melting
    - Hot Pressing
    - Vacuum Hot Pressing
    - Hot Isostatic Pressing
  - EVAPro™ Grade Evaporation Materials
  - Localized Target Bonding
- **Chamber Services**
  - Shield Cleaning and Conditioning
  - Arc Spraying – Electro-polishing
  - PM Refining and Upgrading
  - Logistics Support



Buffalo  
Brewster  
Milwaukee  
Wheatfield  
Singapore  
Taiwan  
Santa Clara  
Ireland  
Suzhou,  
China  
Louny, Czech

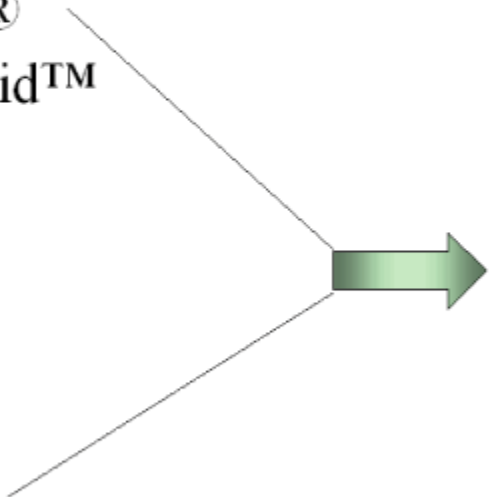
# *End Product Examples Utilizing Thin Film Deposition Materials*

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# *Packaging Materials*

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- FLA/Combo-Lid®
  - Seam Seal/Microlid™
  - Preforms
  - Clad Materials
  - Braze Materials
  - Ni Alloys
  - Dental
  - Coating, patterning and Visi-Lid™ (TFT)
  - Packages (Zentrix)
- 

Buffalo  
Singapore  
Wheatfield  
Buellton  
WAM  
Taiwan  
WAM  
Philippines

# *New Product and Technology Development*

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- Visi-Lid™ - A transparent lid for New Photonics applications
- Silver Alloys for HD-DVD and Blue Ray Disc manufacturing
- Expanded refining/chamber services supporting the thin film materials business
- FCCL Materials
- Magnetic Media Materials
- Magnetic Head Materials
- Solar Panel Thin Film Materials
- Nanotechnology Materials





# *Key Markets – Wireless and Photonics*

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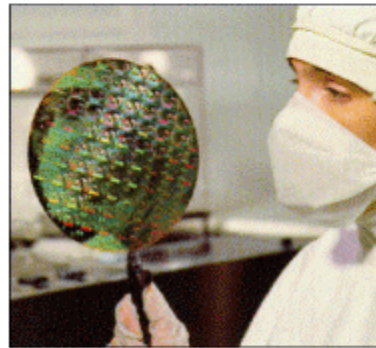
- Thin Film and Packaging materials for varied wireless and photonic applications including RF Power Amplifiers, HBT's, SAW Devices, Light Emitting Diodes (LEDs), Laser Recorders and Micro Electro Mechanical Systems (MEMS)



# *Key Markets – Semiconductor Wafer Fabrication*

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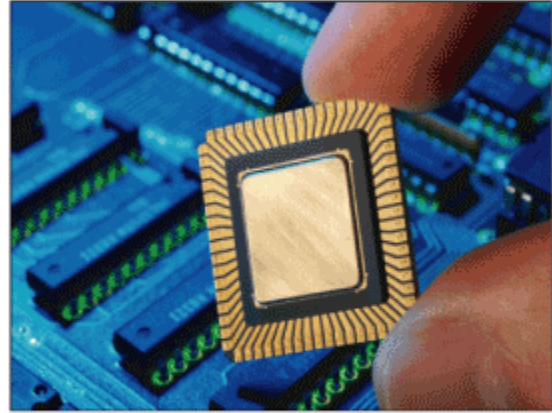
- Thin film materials and chamber services for silicon wafer and UBM (Under Bump Metallization) technologies.
- Numerous commercial and military microelectronic applications.



# *Key Markets – Semiconductor Packaging*

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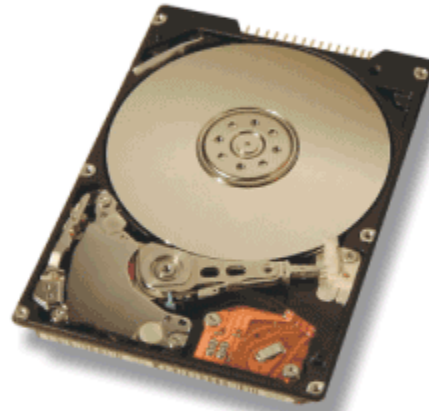
- High reliability semiconductor packaging materials.
- Applications focused in space, military and satellite market segments.



# *Key Markets – Magnetic Head and Media*

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- Thin film materials for both the read/write head and disc platter.
- Chamber Services complement materials offering.
- Applications growing into many commercial and mobile electronic products.



# *Distinctive Competencies*



## *New Platforms by Market*

---

New Thin Film & Packaging Materials and Designs for:

- Magnetic Media (PMR) and Thin Film Head (TMR/PMR)
- Semiconductor Wafer Fabrication
- Under Bump Metallization (UBM) for Flip Chip
- Flexible Copper Clad Laminate (FCCL)
- Wireless and Photonics
- Photovoltaics (Solar Panels)
- MEMS and Photovoltaic Packaging Materials



*Brush Engineered Materials Inc.*  
*Organized into Four Separate Reportable Segments*

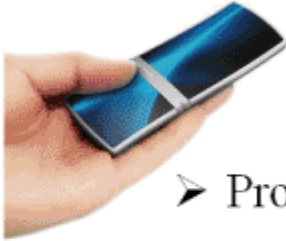
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- Advanced Material Technologies and Services
  - *Specialty Engineered Alloys*
  - Beryllium and Beryllium Composites
  - Engineered Material Systems
-

# Brush Specialty Engineered Alloys & Brush Resources Vision

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- Provide *technical expertise* and *flexible services* to deliver value through *innovative, practical engineered material solutions*.
- Our *products and services* coupled with our *global distribution and logistics network* are relied upon by our customers making us their *trusted growth partner*.





# *Brush Specialty Engineered Alloys & Brush Resources Mission*

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*Safely and reliably provide the highest quality, innovative products and services, fast and on-time to all customers, when they want them at the lowest possible cost.*



# *Alloy Products*

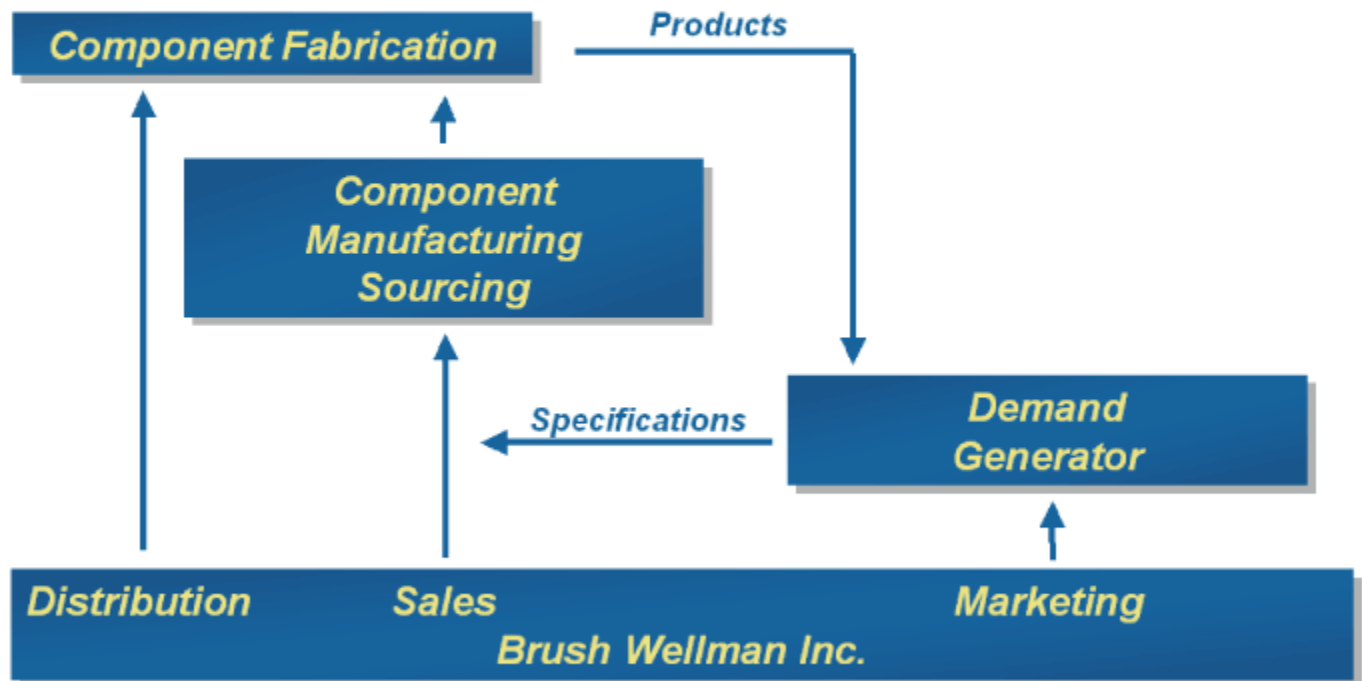
## *Operations Strategy—Lean Sigma*

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- *Safety* practices to provide an injury and illness free workplace
- *Lean Manufacturing* to reduce cycle times, further increase capacity, and provide industry leading service to our customers
- *Six Sigma* to provide industry leading product quality and to reduce costs
- *Supply Chain Management* to provide exactly what is needed, when it's needed, to where it's needed in exactly the right quantity
- *Total Productive Maintenance* to provide industry leading equipment reliability



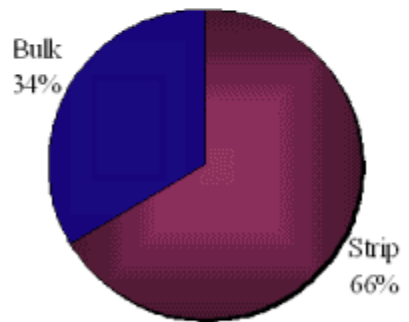
# *Sales Based on End User Specifications*



# *Brush Specialty Engineered Alloys*

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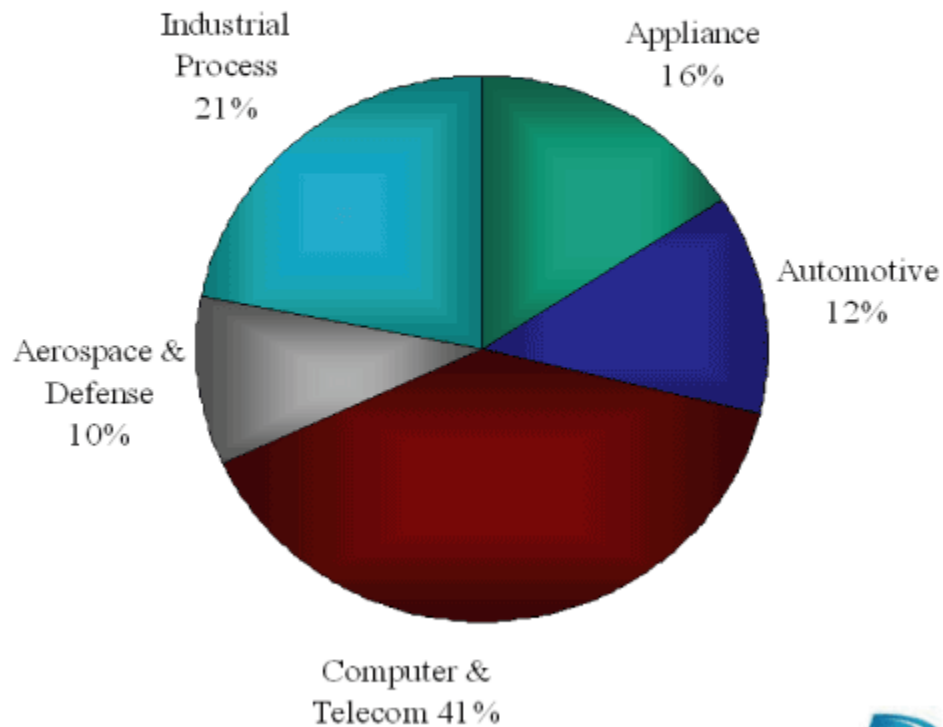
- The primary business within the Specialty Engineered Alloys Segment, Alloy Products Year-to-Date September sales were \$218 million.
- Manufactures and sells copper and nickel based alloy systems metallurgically tailored to meet customers' specific performance requirements
- Product families:
  - Strip products include thin gauge precision strip and thin diameter rod and wire. These products provide a combination of high strength, formability and electrical conductivity for connectors, contacts, switches, relays and shielding used in mobile communications devices, wireless communications equipment, storage area network systems, data networking equipment, servers, personal computers, appliances, and automotive electronics.
  - Bulk products include rod, bar, tube and plate. These products are known for superior strength, corrosion and wear resistance, thermal conductivity and lubricity. Applications include bearings and bushings for aerospace and heavy equipment, resistant welding components, oil & gas drilling components, plastic mold tooling and telecommunications housing equipment.



# *Alloy Products Revenue by Market*

## *YTD Q3 2007*

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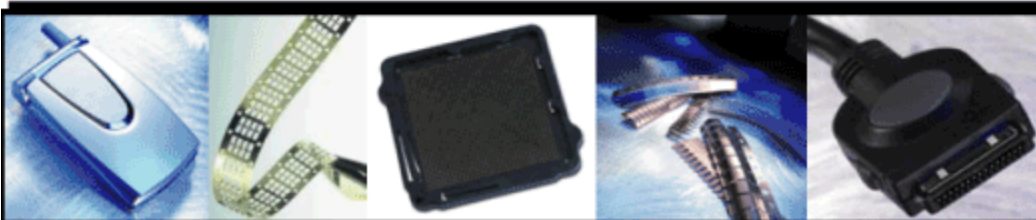


# *Strip Alloy Applications*

*(strength, conductivity, spring characteristics)*

---

- Automotive electronics
- Appliance switches
- Pressure Responsive Devices
- Fire Extinguisher Sprinkler Heads
- EMI Shielding
- Current Carrying Springs and Relays
- Integrated Circuit Sockets
- Electrical and Electronic Connectors in Mobile Handsets, PDA's, Base Stations, Storage Area Networks, Servers, and Personal Computers



# *Strip Products - Strategy*

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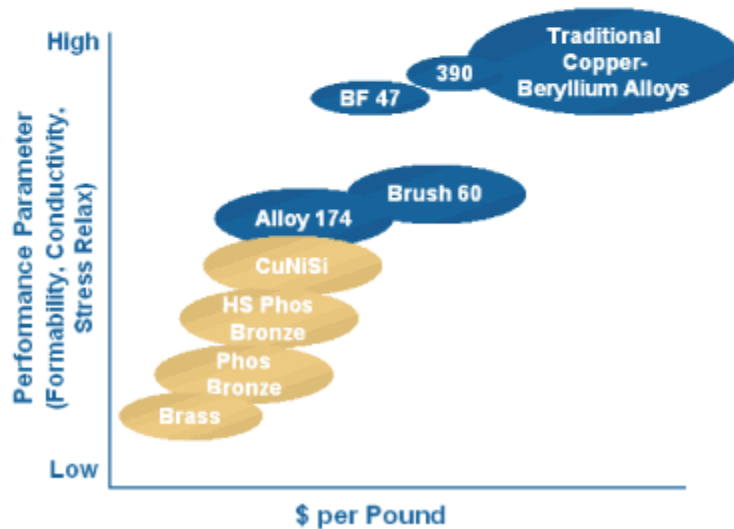
- **Maintain focus on major end-use markets**
  - Computer
  - Telecommunications (mobile & Infrastructure)
  - Automotive
  - Appliance
  - Military
  - Medical
- **Defend leadership in traditional alloy strip, rod & wire**
  - Reduce total cost of manufacture to allow penetration of mid-range alloy applications
  - Enhance product properties to provide additional value to customers
- **Introduce new alloys to meet needs of targeted market opportunities**
- **Geographic Growth**



# Strip Products Strong Value Proposition

*Copper-beryllium alloys, while premium priced, provide best-in-class performance*

## Competitive Alloy Comparison



Note: Blue denotes Brush Engineered Materials' alloys; beige represents competitive materials.

## Brush Value Proposition

- Unique, high-performance materials
- Technical design capabilities
- Outstanding service center network
- Global marketing, sales and distribution



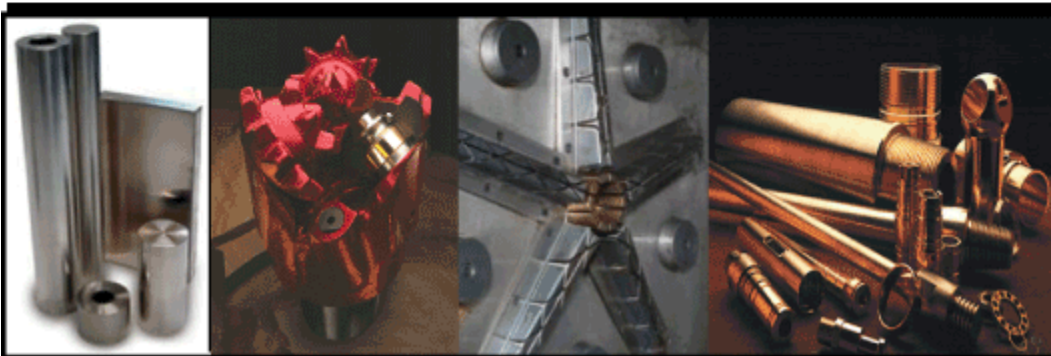


# *Bulk Alloy Applications*

*(strength, corrosion resistance, non-galling, conductivity)*

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- Aircraft Bushings
- Heavy Equipment Bearing and Wear Applications
- Oilfield well drilling, completion and production equipment
- Plastic Injection & Blow Molds
- Power Generation
- Tooling for Metalworking
- Undersea/Marine Housings for Telecom & Instrumentation
- Welding Electrodes & Dies



# *Bulk Products - Strategy*

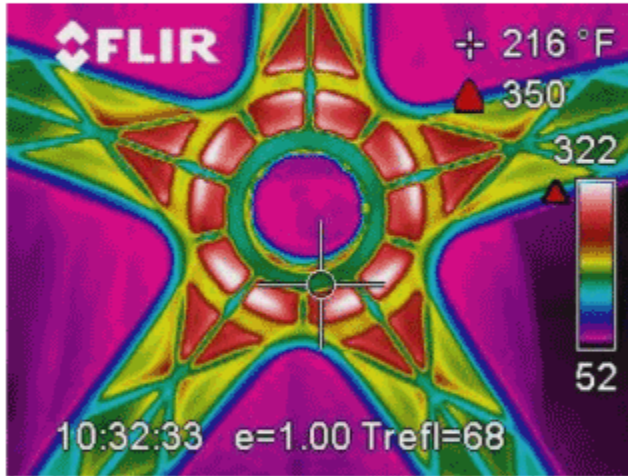
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- **Maintain focus on traditional end-use markets**
  - Aerospace
  - Oil & Gas
  - Plastics
  - Power Generation
  - Resistance Welding
  - Undersea
- **Introduce new alloys or product forms to meet needs of targeted market opportunities**
- **Focus on new non-traditional growth markets**
  - Bearings, Heavy Equipment & Mining, Marine, advanced Oil & Gas well components, Offshore & Downhole technology, and Pumps
- **Geographic Growth**
  - Expand commercial operations in Asia Pacific, improve customer awareness and distribution



# *MoldMAX<sup>®</sup> Alloys for the Plastics Industry*

---



Brush Wellman engineers use infrared imaging at the customers facility to pinpoint where MoldMAX<sup>®</sup> will provide the maximum benefit.

## **Value Proposition**

- Provides molders with 20-40% increase in productivity
- Capital avoidance due to increased productivity
- Enables improved quality of molded parts
- ROI < 3 months

## **Technical advantages**

- Hardness of steel with the thermal conductivity of copper
- Fast machining rates
- High polishability



# *Lorain Casting Facility*

## *Spinodal and EquaCast® Technology-Winning!*

---

High performance copper based engineered materials:

- Strength and hardness is comparable to copper beryllium products
- Thermal conductivity

The value proposition differentiates:

- Corrosion resistance
- Superb tribological properties (low friction, excellent wear resistance) adding value in reliability, uptime, and maintenance savings
- Machinability and design simplicity adding cost benefits to offset increased material costs
- Casting capability including size, shapes, tubes and quality
- No EH&S issues

Developing applications in markets where we are strong:

- Drilling Equipment, Aircraft Parts, Mold Tooling

Developing markets/applications where technology is strong:

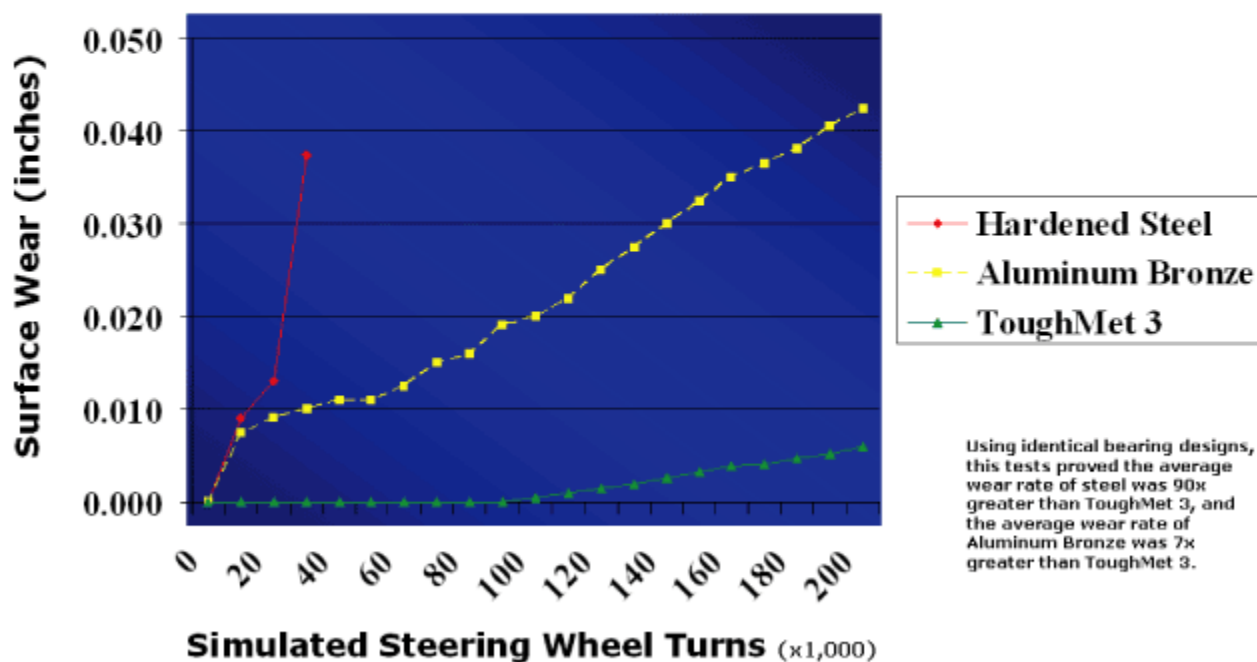
- Oil Well Completion Equipment, Mining, Heavy Equipment, Drivetrain Components, Hydraulic Systems, Engine Bearings, Semiconductor Fabrication

Lorain Technology: Expanding Brush Wellman's market and application reach



# *ToughMet® Outlasts Conventional Bearing Materials in 300-ton Mining Truck Steering Test*

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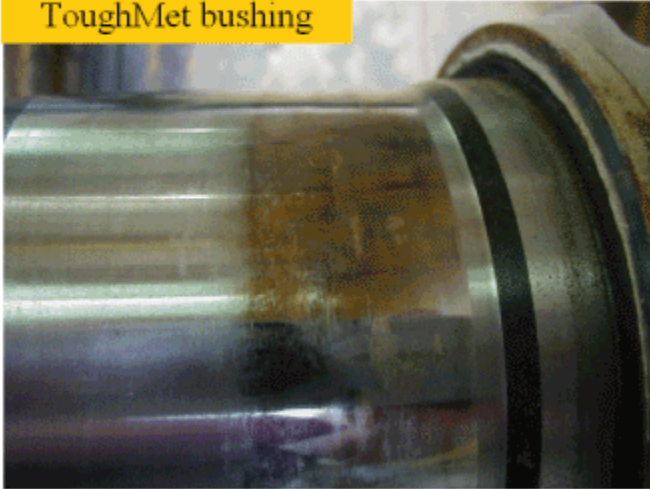


# *ToughMet® Bushings Protect Steel Mating Parts.*

## *Example: Lubrication failure on bulldozer undercarriage*

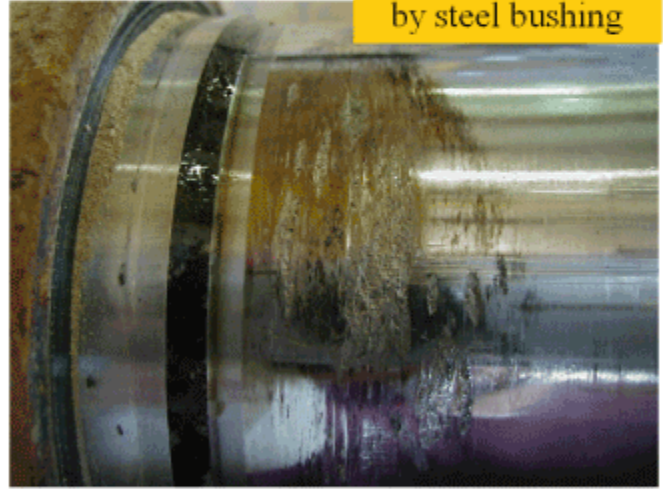
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Steel pin protected by  
ToughMet bushing



Left side pin after 500 running hours  
against ToughMet 3 CX105 bushing.

Steel pin damaged  
by steel bushing



Right side pin after 500 running hours  
against hardened steel (HRC 50)  
bushing.

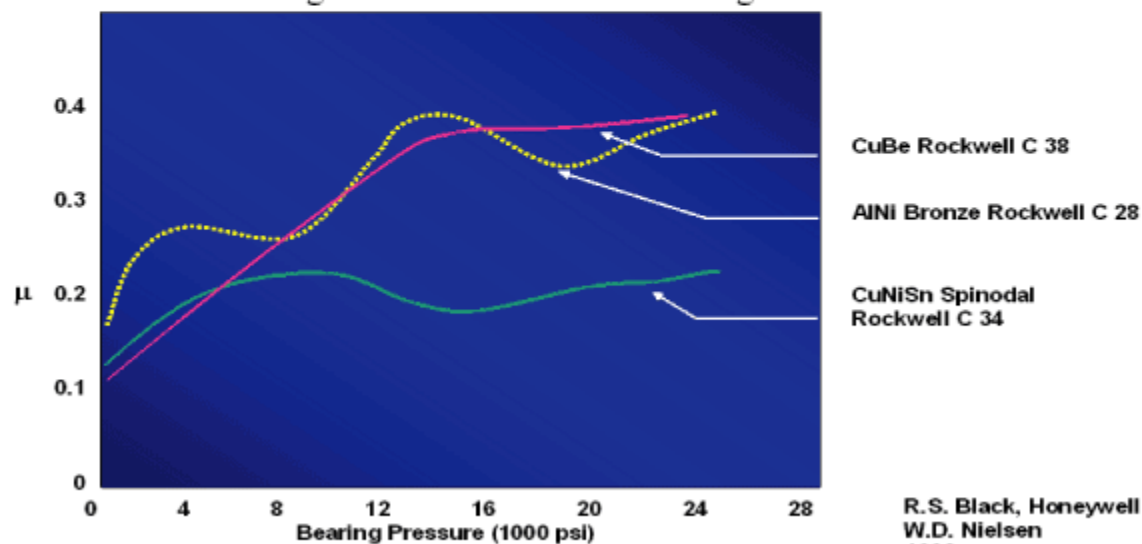
Pin hardness = HRC60.



# *ToughMet® Industrial Components Results:*

## **ToughMet® Alloy Bushings Provide Superior Power Efficiency Performance**

in a Comparison of Dynamic Coefficient of Friction  $\mu$  vs  
Bearing Pressure for Three Bearing Materials



R.S. Black, Honeywell  
W.D. Nielsen  
1996

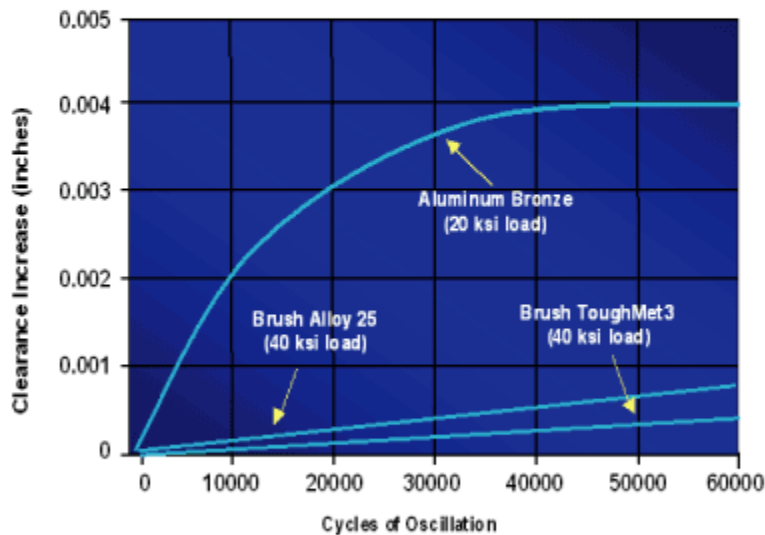




# *Significantly Higher Durability has been Confirmed for ToughMet®*

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## Comparative Sleeve Bearing Wear Tests.



Battelle



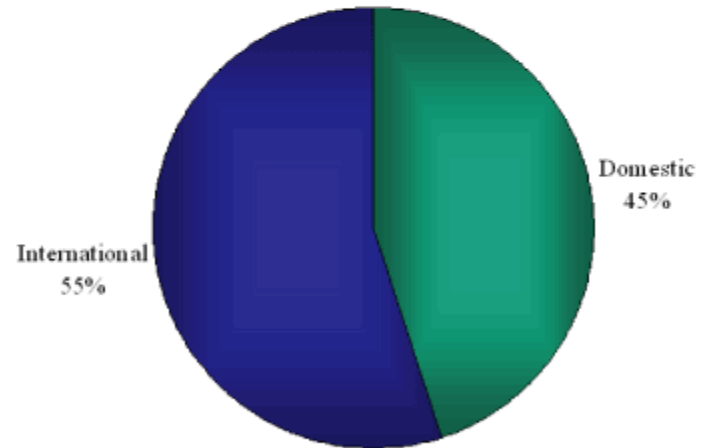


# *Brush International, Inc.*

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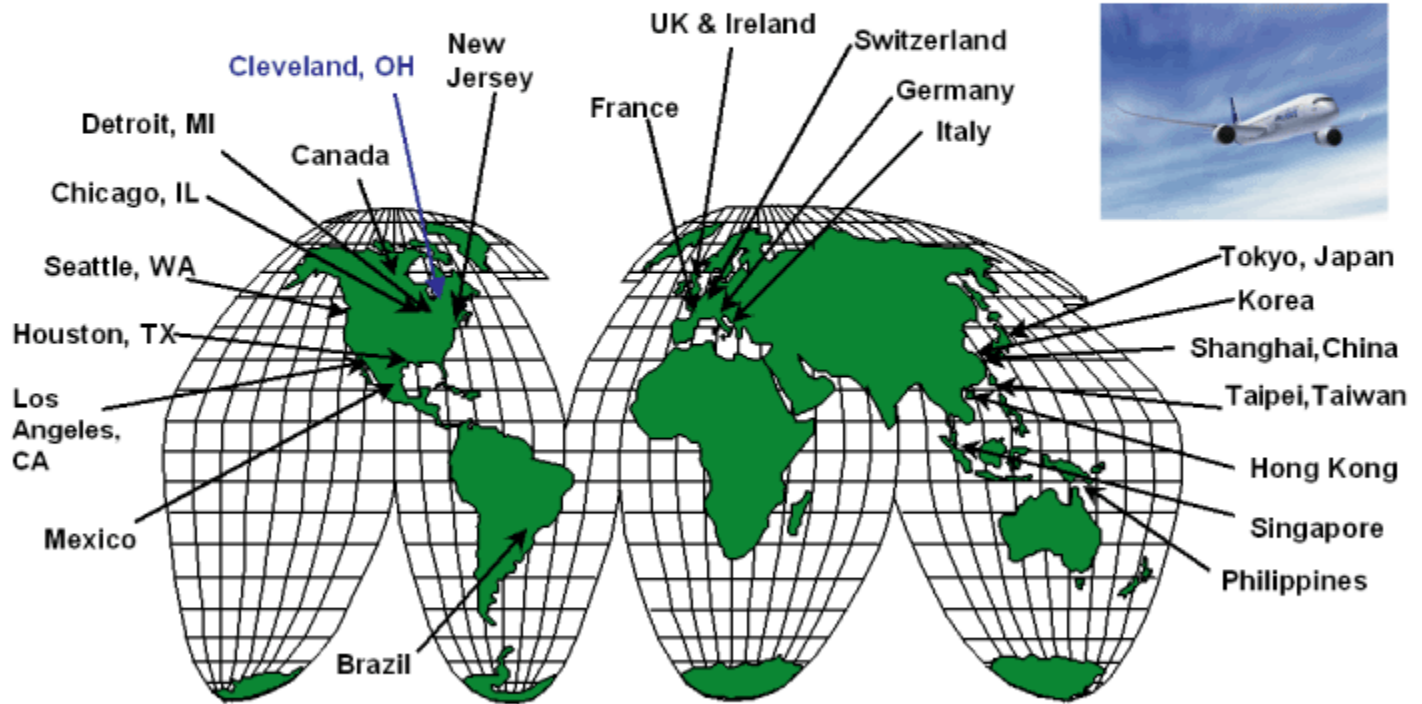
- Brush International Inc. is a wholly owned subsidiary of Brush Engineered Materials
- Service centers in Germany, England, Japan and Singapore
- Representative offices in Korea, China and Taiwan
- Primary focus on the distribution of alloy products while providing local support to other Brush Engineered Materials' subsidiaries operating internationally

*Alloy International/Domestic Revenue  
YTD Q3 2007*



# *Global Sales and Distribution Network*

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***Global Reach..... Local Service***

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*Brush Engineered Materials Inc.*  
*Organized into Four Separate Reportable Segments*

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- Advanced Material Technologies and Services
  - Specialty Engineered Alloys
  - ***Beryllium and Beryllium Composites***
  - Engineered Material Systems
-

# *Brush Wellman*

## *Beryllium Products*

---

### Products

Beryllium Metal - One of the lightest metals known

- Family of vacuum hot and hot/cold isostatically pressed powder-derived metals

AlBeMet™

- Family of lightweight alloy composites
- Extruded, rolled sheet and hot isostatically pressed powder-derived metals

**BRUSHWELLMAN**  
ENGINEERED MATERIALS

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# *Brush Wellman*

## *Beryllium Products*

---

### Products - Cont.

- E-Materials
- Family of low expansion, lightweight electronic packaging materials
  - Composites of beryllium metal and beryllium oxide

Beryllium Oxide/  
Chemicals

- Ceramic-grade beryllium oxide powder
- Specialty beryllium-containing chemicals

**BRUSHWELLMAN**  
ENGINEERED MATERIALS

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# *Brush Wellman Beryllium Products*

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## Facilities

Elmore, Ohio

Fremont, California

**BRUSHWELLMAN**  
ENGINEERED MATERIALS

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# *Key Product Attributes*

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- Be/AlBeMet™
  - Light Weight (Density)
  - High Stiffness (Elastic Modulus)
  - High Thermal Conductance/Capacity
  - Low Thermal Expansion
- Be
  - Transparent to X-Rays
  - Neutron Reflector

# *Brush Wellman Beryllium Products*

---

## Primary Competition... Alternative Materials

Organic Composites (e.g. Carbon epoxy)

Silicon carbide

Metal Matrix Composites (e.g. Al - silicon carbide)

Pyrolytic graphite

Aluminum (high strength grades)

**BRUSHWELLMAN**  
ENGINEERED MATERIALS

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# *Major Defense/Aerospace Applications for Brush Wellman Beryllium Products*

---

## Optics

Optical substrate and support structure for visual and infrared target acquisition systems (fighter aircraft, helicopters, unmanned aerial vehicles, tanks), surveillance systems and astronomical telescopes.

## Satellites

Structures and sensors for defense and commercial telecommunications satellites.

## Electronics

Electronic packaging for defense avionics, radar and electronic countermeasures systems for helicopters and fighter aircraft. Applications include circuit boards, covers and packages.

**BRUSHWELLMAN**  
ENGINEERED MATERIALS

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# *Major Commercial Applications for Brush Wellman Beryllium Products*

---

## X-ray Windows

Radiographic tube components for \* medical diagnostic (x-ray, mammography, CAT-scan), \* industrial and \* scientific equipment.

## Optical Scanners

Mirrors for laser scanners used in reprographic and other high-performance laser applications.

## Motion control

Structural components for high-precision semiconductor processing and industrial robotic equipment

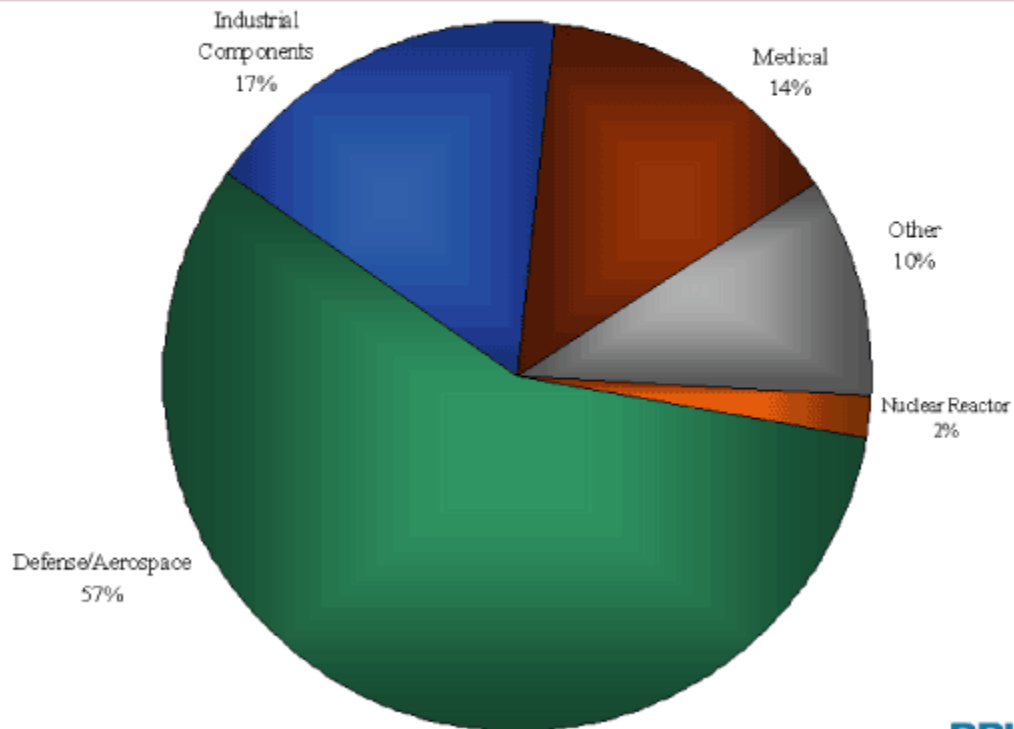
## Acoustics

High performance speaker components

# *Beryllium Products*

## *YTD Q3 2007 Revenue by Market*

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**BRUSHWELLMAN**  
ENGINEERED MATERIALS

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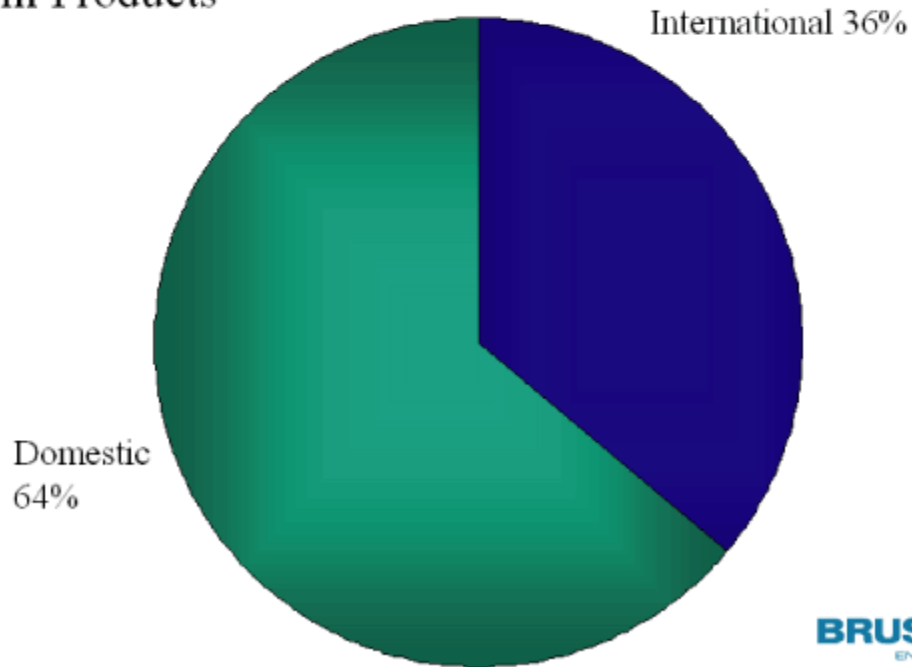
# *International/Domestic Revenue*

## *Q3 2007*

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Beryllium Products



**BRUSHWELLMAN**  
ENGINEERED MATERIALS

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# *Major Applications, New Products and Platforms*

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## *Beryllium Products*

<u>Product</u>	<u>Market</u>
New AlBeMet Products	Defense
Fabricated Products	Defense
Acoustic	Speakers
High grade Be foil	Medical x-ray

**BRUSHWELLMAN**  
ENGINEERED MATERIALS

---

# *Beryllium Products*

## *Brush Ceramic Products*

---

- Located in Tucson, Arizona
- Products
  - Ceramic substrates used in commercial and military packaging applications
  - Ceramic laser bores for gas lasers used in medical and industrial applications
  - Machined ceramic components used in military, oil and gas, semiconductor and microwave applications

**BRUSHWELLMAN**  
ENGINEERED MATERIALS

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*Brush Engineered Materials Inc.*  
*Organized into Four Separate Reportable Segments*

---

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---

- Advanced Material Technologies and Services
  - Specialty Engineered Alloys
  - Beryllium and Beryllium Composites
  - ***Engineered Material Systems***
-

# *Technical Materials Inc.*

## *2007*

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“Providing engineered metal strip products  
to leading technology manufacturers around  
the world.”

---





## *Market History*

---

- Founded in 1968, TMI's continuous clad and inlay technology produced high-reliability connector and switch materials for the telecom industry.
  - Today TMI's products are used throughout the world by virtually all major technology markets. As a leader in reel-to-reel composite metals engineering, TMI differentiates itself through proprietary process technologies.
  - TMI worldwide sales increased 37% in 2006. New product sales accounted for approximately half of this increase.
-

# *TMI Process Technologies*

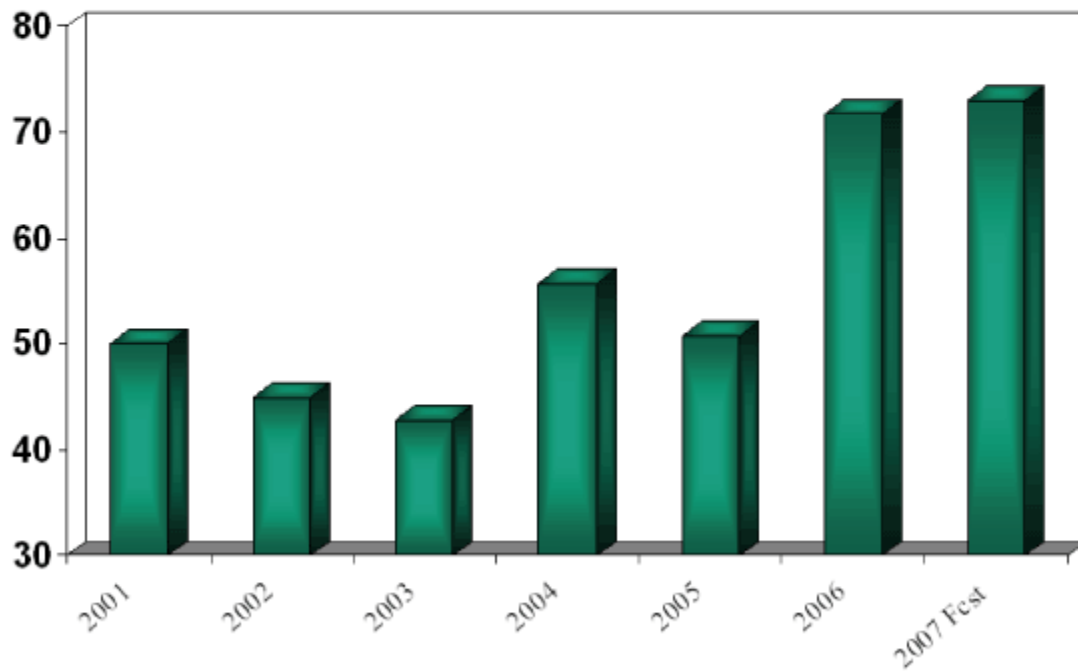


- 
- Cladding
    - Inlay
    - Micro Laminates
  - Electroplating
    - Gold, Silver, Base Metals
    - Selective and Overall Coatings
  - Profiling
    - Milling
    - Skiving
  - Continuous Electron Beam Welding
  - Lead-Free Solder Coatings
-

# *TMI Sales Growth*

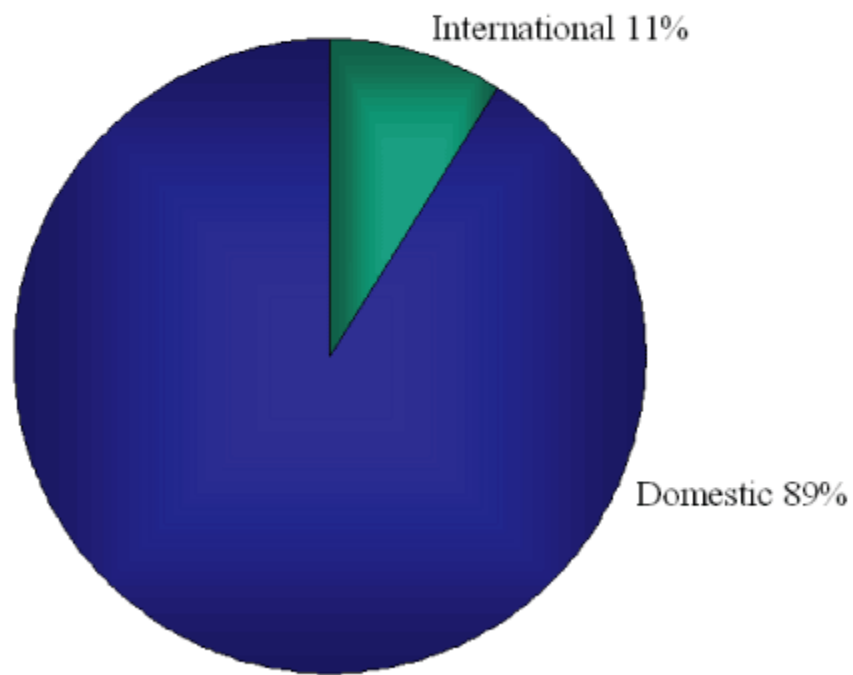


\$ in millions



# *International/Domestic Revenue*

## *2007*



## *Our Vision*



- 
- To be a leader in creating innovative engineered material solutions and services that make our customers competitive in global markets.
-

# *Technology Leader*



- 
- **Quality**
    - ISO 9001-2000, Certified by Bureau Veritas
    - ISO 14001, Certified by TÜV
    - Unique Tolerance Capabilities
    - Extensive Digital and Vision-Controlled Processing
  - **Engineering**
    - Metallurgical Design
    - Technical Customer Support
-

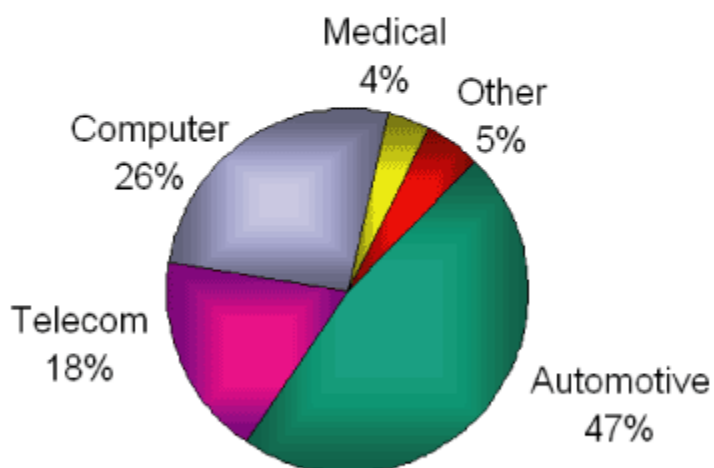


# *Our Major Markets*

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YTD 3Q 2007

- Automotive
- Consumer Electronics
- Computer
- Semiconductor
- Energy
- Medical



# *Strategic Growth Markets*

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- Computer Hard Drives
  - Medical Devices
  - Energy Systems
-



# *Application: Computer*

---



- *Hard Drive Suspension Materials*

- Stainless/Aluminum Composites
  - High Stiffness-to-Weight Performance
  - Supports Higher Data Density Media
-

# *Application: Medical*



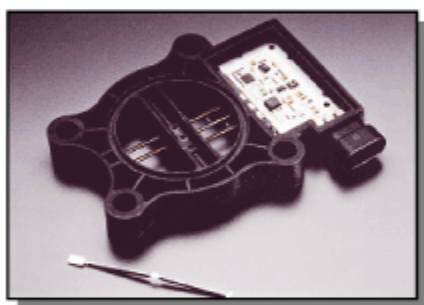
- *Implant Materials*

- Electron Beam Welded and Clad Interconnects
- Niobium, Tantalum, Titanium, and Stainless Steel Systems



## *Application: Automotive*

---



- *High-Reliability Connector and Leadframe Materials*
    - Safety Devices
    - Engine Performance Sensors
    - Hybrid Components
-

## *Application: Consumer Electronics*

---



- Leadframes for Digital Camera Sensors
- Cell Phone Passive Components

## *Application: Energy*

---



- High-Performance Battery Materials
  - Solar Cell Interconnects
  - High-Temperature Fuel Cell Clad Materials
-

# *2007 Growth Strategy*



- 
- Continued Expansion of Electroplating through Process Technology Advantages
  - Focus on Clad and Electron Beam Weld Product Development in High-Growth Niche Markets
  - Continue to Expand TMI's Presence in the Far East
-

# *Beryllium Health and Safety*

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*Brush has continued to make progress on issues related to beryllium health and safety*

- Improved worker protection programs in place
  - Rates of sensitization down among new workers
  - Strong focus on regulations related to beryllium exposure
-

# *Litigation*

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	<u>Total Cases Pending</u>	<u>Total Plaintiffs (including spouses)</u>
12/31/06	13	54
03/30/07	12	52
06/29/07	10	32
09/28/07	10	32

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# *Litigation*

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- In Q-3 2007, in one case, the trial court granted the Company's Motion for Summary Judgment; however, the plaintiffs have the right to file an appeal. No new cases were filed during the quarter.
  - Our caseload and number of plaintiffs will vary from quarter to quarter depending on new cases, additional plaintiffs, settlements, dismissals, amendments to complaints, etc.
- The Company believes it has substantial defenses in pending cases.