

AWA

Alexander Watson Associates

**Global In-mold Label & In-Mold Decoration
Market and Technology Review
2010 AWAreness™ Report**

**A Market Overview and Opportunities for
In-mold Label & In-mold Decoration Converters,
Producers, Equipment & Material Suppliers, and Users**

November 2010

Sample

AWA Alexander Watson Associates BV

Koningin Wilhelminaplein 13
2.09.09 (Tower 2; 9th Floor; Suite 9)
P.O.Box 69035
1060 CA Amsterdam
THE NETHERLANDS

Tel: +31 (0)20 676 20 69
Fax: +31 (0)20 676 23 75
Email: reports@awa-bv.com
Web: www.awa-bv.com

AWA North American Office

910 N Lakeshore Drive
#2415
Chicago, IL 60611
USA

Tel: +1 312 943 4091
Email: reports@awa-bv.com
Web: www.awa-bv.com

Table of Contents

1.	INTRODUCTION	10
1.1	Introduction	11
1.2	Methodology	15
1.3	Definitions	18
2.	EXECUTIVE SUMMARY	25
2.1	In-mold Labels	26
2.1	In-mold Decoration	36
3.	LABEL MARKETS	38
3.1	Product Decoration & Identification Technologies	39
3.1.1	Flexible Packaging	43
3.1.2	Cartons	45
3.1.3	Direct Printed Cans/Metal Bottles	47
3.2	Global Market	50
3.3	In-mold Label & In-mold Decoration Technologies & Global Markets	52
3.3.1	In-mold Labeling	53
3.3.2	In-mold Decoration	60
4.	IN-MOLD LABEL MARKET STRUCTURE, VALUE CHAIN & SEGMENTATION	64
4.1	In-mold Label Market	65
4.2	In-mold Label Market Structure	68
4.3	Value Chain	72
4.4	In-mold Label Market Segmentation	78
4.4.1	Application Category	78
4.4.2	End-use Market Segmentation	81
4.4.3	Regional Markets	82
4.4.4	Application Technology	83
4.5	Regional In-mold Label Markets	85
4.5.1	European In-mold Market	85
4.5.1.1	European In-mold Label Application Categories	86
4.5.1.2	European In-mold Label End-use Segments	86
4.5.1.3	European In-mold Label Application Technologies	87
4.5.1.4	European In-mold Label Materials	89
4.5.1.5	European In-mold Market – Trends & Forecasts	91
4.5.2	North American In-mold Market	93
4.5.2.1	North American In-mold Application Categories	93
4.5.2.2	North American In-mold Label End-use Segments	94
4.5.2.3	North American In-mold Label Application Technologies	95
4.5.2.4	North American In-mold Label Materials	98
4.5.2.5	North American In-mold Label Market – Trends & Forecasts	100
4.5.3	Asia Pacific In-mold Label Market	101

Table of Contents, Cont'd

4.5.3.1	Asia Pacific In-mold Label Application Categories	103
4.5.3.2	Asia Pacific In-mold Label End-use Segments	103
4.5.3.3	Asia Pacific In-mold Label Application Technologies	104
4.5.3.4	Asia Pacific In-mold Label Materials	106
4.5.3.5	Asia Pacific In-mold Market – Trends & Forecasts	107
4.5.4	South American In-mold Market	109
4.5.4.1	South American In-mold Label Application Categories	109
4.5.4.2	South American In-mold Label End-use Segments	109
4.5.4.3	South American In-mold Application Technologies	110
4.5.4.4	South American In-mold Market – Trends & Forecasts	111
4.5.5	Rest of World In-mold Label Market	112
5.	IN-MOLD DECORATION MARKET STRUCTURE, VALUE CHAIN & SEGMENTATION	114
5.1	In-mold Decoration Market	117
5.2	In-mold Decoration Market Structure	120
5.3	Market Segmentation	122
5.3.1	End-use Markets	123
5.3.2	Regional Markets	123
5.3.3	Materials	124
5.5	Regional Markets	127
5.5.1	Asia Pacific In-mold Decoration Market	127
5.5.2	European In-mold Decoration Market	129
5.5.3	North American In-mold Decoration Market	130
6.	TECHNOLOGY TRENDS	132
6.1	In-Mold Labels	133
6.1.1	In-mold Label Materials	133
6.1.2	In-mold Label Printing Technologies	135
6.1.3	Molding & Robotics	138
6.1.4	Molds	139
6.1.5	Robotics/Automation	141
6.1.6	Label Placement	142
6.2	In-mold Decoration	147
6.2.1	Part Size	147
6.2.2	Part Design	147
6.2.3	Process Developments/Innovations	148
6.2.4	Printing Processes	149
7.	THE FUTURE FOR IN-MOLD LABELING	151
7.1	Market Trends and Forecasts	152
7.2	Market Opportunities	157
7.2.1	Crate Labels	157
7.2.2	Cups & Tubs	157
7.2.3	Durable Labels/Product Decoration	159
7.2.4	Barrier Materials	159

Table of Contents, Cont'd

7.3	Competitive Technologies	161
7.3.1	Direct Print	161
7.3.2	Competitive Label Technologies	162
7.3.2.1	Pressure-sensitive Labels	162
7.3.2.2	Sleeve Labels	162
7.4	Environmental Issues	164
7.5	Globalization	167
7.6	Summary	169
8.	THE FUTURE FOR IN-MOLD DECORATION	171
8.1	Market Trends and Forecasts	172
8.2	In-mold Decoration Opportunities	174
9.	DIRECTORY	175
9.1	In-mold Label Printer Companies	176
9.2	In-mold Label Printers – Sheet Offset Printers	181
9.3	In-mold Label Printers – Narrow Web Printers	186
9.4	In-mold Label Printers – Wide Web Printers	189
9.5	In-mold Label Printers – Screen Printers	190
9.6	In-mold Decoration Printer Companies	191
9.7	Injection Molders	195
9.8	EB-IML Molders	201
9.9	Mold Manufacturers	203
9.10	Equipment Suppliers	204
9.11	In-mold Decoration Substrates	207
9.12	Material Suppliers	209
9.13	Ink Suppliers	214

List of Exhibits

Exhibit 2.1 World Demand for Labels	26
Exhibit 2.2 World Market Shares by Labeling Technology – 2009	27
Exhibit 2.3 Global In-mold Label Market – 2009	28
Exhibit 2.4 Global Growth Rates of Label Technologies – 2009	28
Exhibit 2.5 Global & Regional Growth Rates for In-mold Labels	29
Exhibit 2.6 Forecast Growth of Global In-mold Label Market, 2009 – 2014	29
Exhibit 2.7 Forecast Growth of European In-mold Label Market, 2009 – 2014	30
Exhibit 2.8 Forecast Growth of North American In-mold Label Market, 2009 – 2014	30
Exhibit 2.9 Forecast Growth of Asia Pacific In-mold Label Market, 2009 – 2014	31
Exhibit 2.10 Forecast Growth of South American In-mold Label Market, 2009 – 2014	31
Exhibit 2.11 Global In-mold Label Market by Application Technology – 2009	32
Exhibit 2.12 Regional In-mold Label Market by Application Technology – 2009	32
Exhibit 2.13 Global In-mold Label Market by Material Type – 2009	33
Exhibit 2.14 Regional In-mold Label Market by Material Type – 2009	33
Exhibit 2.15 Global In-mold Label Applications by End-use Segment – 2009	34
Exhibit 2.16 Opportunities for the Global In-mold Label Market	34
Exhibit 2.17 Threats for the Global In-mold Label Market	35
Exhibit 2.18 Global In-mold Decoration Market – 2009	36
Exhibit 2.19 Global In-mold Decoration Market by Material Type - 2009	37
Exhibit 2.20 Regional In-mold Decoration Markets	37
Exhibit 3.1 Product Decoration & Identification Technologies	39
Exhibit 3.2 Market Segments & Common Product Decoration Technologies	42
Exhibit 3.3 World demand for Labels – 2009	50
Exhibit 3.4 World Market Shares by Labeling Technology – 2009	51
Exhibit 3.5 In-mold Labeling versus In-mold Decorating	53

List of Exhibits, Cont'd

Exhibit 3.6 In-mold Labeling – Strengths & Weaknesses	56
Exhibit 3.7 Demand Influences and Market Drivers	57
Exhibit 3.8 Global In-mold Label Market – 2009	58
Exhibit 3.9 Regional In-mold Label Markets	59
Exhibit 3.10 Forecast In-mold Decoration Market – 2009	60
Exhibit 3.11 Global In-mold Decoration Market – 2009	61
Exhibit 3.12 Regional In-mold Decoration Markets – 2009	62
Exhibit 3.13 Forecast In-mold Label Volume Growth, 2009 – 2014	63
Exhibit 4.1 Global In-mold Label Market – 2009	65
Exhibit 4.2 Regional In-mold Label Markets - 2009	65
Exhibit 4.3 Forecast Growth of Global In-mold Label Market, 2009 – 2014	67
Exhibit 4.4 Typified Structure of the In-mold Label Market	69
Exhibit 4.5 The Global In-mold Label Market – Year 2009 Value Chain Diagram	73
Exhibit 4.6 Estimates of In-mold Printer Numbers by Region - 2009	76
Exhibit 4.7 End –user Market Segments	81
Exhibit 4.8 Global In-mold Label Applications by End-use Segment – 2009	82
Exhibit 4.9 Global In-mold Label Market by Region – 2009	82
Exhibit 4.10 Global In-mold Label Market by Region – 2009	83
Exhibit 4.11 Global In-mold Label Volumes by Application Technology – 2009	84
Exhibit 4.12 European In-mold Label Market – Country-by-country, 2009	85
Exhibit 4.13 European In-mold Label Market – End-use Segments, 2009	87
Exhibit 4.14 European In-mold Label Market – Application Technologies, 2009	88
Exhibit 4.15 Types of IML-TF Material and Container Material	89
Exhibit 4.16 In-mold Label Market – Label Materials, 2009	90
Exhibit 4.17 Leading European Suppliers of Materials for In-mold Labels	91

List of Exhibits, Cont'd

Exhibit 4.18 Forecast Growth of European In-mold Label Market, 2009 – 2014	93
Exhibit 4.19 North American In-mold Label Market – End-use Segments, 2009	95
Exhibit 4.20 North American In-mold Label Market – Application Technologies, 2009	96
Exhibit 4.21 North American In-mold Label Market – Label Materials, 2009	98
Exhibit 4.22 Leading North American Suppliers of Materials for In-mold Labels	99
Exhibit 4.23 Forecast Growth of North American In-mold Label Market, 2009 – 2014	101
Exhibit 4.24 Asia Pacific In-mold Label Market – Country-by-country, 2009	102
Exhibit 4.25 Asia Pacific In-mold Label Market – End-use Segments, 2009	104
Exhibit 4.26 Asia Pacific In-mold Label Market – Application Technologies, 2009	105
Exhibit 4.27 Asia Pacific In-mold Label Market – Label Materials, 2009	107
Exhibit 4.28 Forecast Growth of Asia Pacific In-mold Label Market, 2009 – 2014	108
Exhibit 4.29 South American In-mold Label Market – End-use Segments, 2009	110
Exhibit 4.30 South American In-mold Label Markets – Application Technologies, 2009	111
Exhibit 4.31 Forecast Growth of South American In-mold Label Market, 2009-2014	112
Exhibit 5.1 Global In-mold Decoration Market – 2009	117
Exhibit 5.2 Regional In-mold Decoration Markets – 2009	118
Exhibit 5.3 Forecast Growth of Global In-mold Decoration Market, 2009-2014	119
Exhibit 5.4 Typified Structure of the In-mold Decoration Market	121
Exhibit 5.5 Global In-mold Decoration Market – 2009	124
Exhibit 5.6 Regional In-mold Decoration Markets – 2009	124
Exhibit 5.7 In-mold Decoration Market by Material Type, 2009	125
Exhibit 5.8 Regional In-mold Decoration Markets by Region	125
Exhibit 5.9 Asia Pacific In-mold Decoration Market by End -use, 2009	127

List of Exhibits, Cont'd

Exhibit 5.10 Asia Pacific In-mold Decoration Market by Material Type, 2009	128
Exhibit 5.11 European In-mold Decoration Market by Material Type, 2009	128
Exhibit 6.1 In-mold Label Materials – 2009	134
Exhibit 6.2 Breakdown by Printing Process & Label Type	136
Exhibit 6.3 Roll to Die Cut Label Printing Options	137
Exhibit 7.1 Forecast Global Growth Rates for In-mold Labels, 2009-2014	152
Exhibit 7.2 Forecast Growth of North American In-mold Label Market, 2009-2014	154
Exhibit 7.3 Forecast Growth of European In-mold Label Market, 2009-2014	155
Exhibit 7.4 Forecast Growth of Asia Pacific In-mold Label Market, 2009-2014	156
Exhibit 7.5 Forecast Growth of South American In-mold Label Market, 2009-2014	157
Exhibit 7.6 Opportunities	166
Exhibit 7.7 Threats	166
Exhibit 8.1 Forecast Growth of Global In-mold Decoration Market, 2009 2014	168

1.2 Methodology

AWA Alexander Watson Associates has been engaged in market research and consulting to the labeling, product decoration, and related sectors since the company was founded in 1971. The company's experience, expertise, and focus represent a strong base of knowledge of the materials, processes, and technologies in the industries it serves, as well as a fundamental understanding of those industries' structure and their constituent companies across the value chain. AWA's historical perspective on this specialized business sector is also extremely valuable in market analysis and in forecasting future expectations.

A key element in AWA's research methodology is the primary data collection phase, which includes direct discussions and interviews with a broad base of industry contacts throughout the value chain. AWA has direct access to executives and managers, technical experts, and other industry contacts at material suppliers, equipment manufacturers, coaters and laminators, printers, and users. Access to such specialists, market data, market insights, trends, and alternative perspectives throughout the value chain ensures that AWA's research is thorough, robust, verified, and usable.

The primary research and data collection involved in this study included a mix of personal interviews and of telephone and e-mail interviews of leading in-mold label and in-mold decoration printers/converters, raw materials suppliers, end users, and industry experts, further complemented by on-line questionnaires to targeted companies.

In compiling the secondary research data for this study, AWA has conducted a comprehensive search of relevant published information, including internet searches, external proprietary database searches, and other available secondary sources. The company's focused and

disciplined approach to this process, coupled with in-house expertise in secondary research, extensive proprietary in-house databases, and strong knowledge capital ensure targeted and comprehensive results. This subsequently provides the basis for the design of research questionnaires and interview discussion guides, the identification of data gaps, and assistance in the selection of appropriate targets used in the primary research phase.

AWA's research benefits strongly from this ability to cross-check data from a number of different industry-related perspectives and the company's own researches reinforcing the integrity and veracity of data. Additional sources of information for this report include, but are not limited to, the following AWA studies and conference proceedings:

- Labeling & Product Decoration Markets: Global Review 2010
- Vacuum Coated Papers & Films Market & Technology Review 2010
- Global Sleeve Label Market & Technology Review 2010
- Labeling Markets: South American Market Study & Sourcebook 2010
- Chinese Label Markets Product Decoration & Technology Study 2010
- Global Wine & Wine Label Markets: Product Decoration Market & Technology Study 2010
- Global Beer Label Markets: Product Decoration Market & Technology Study 2009
- Specialty Papers & Paperboards: Global Sourcebook 2009
- Labeling Markets: Asian Market Study & Sourcebook 2009
- Global Pressure-sensitive Label Market & Technology Review 2008
- AWA International Sleeve Label Conference, 2010
- AWA In-mold Technologies Seminar 2010
- AWA IMLCON 10 & IMDCON 10 Conference, 2010
- AWA IMLCON09 North America – International In-mold Labeling and Decorating Conference, 2009
- AWA Specialty Paper Industry Conference 2009

After completion of data-driven research, AWA leverages its own market knowledge and experience to deliver insightful, on-target analysis through a broad series of interview contacts using a combination of Delphi and survey methods of research, and in-depth discussions and follow-up interviews. After cross-checking and verification with other industry experts to reach a consensus on all aspects, including volume estimates, the analysis phase is completed and the report compiled and written.

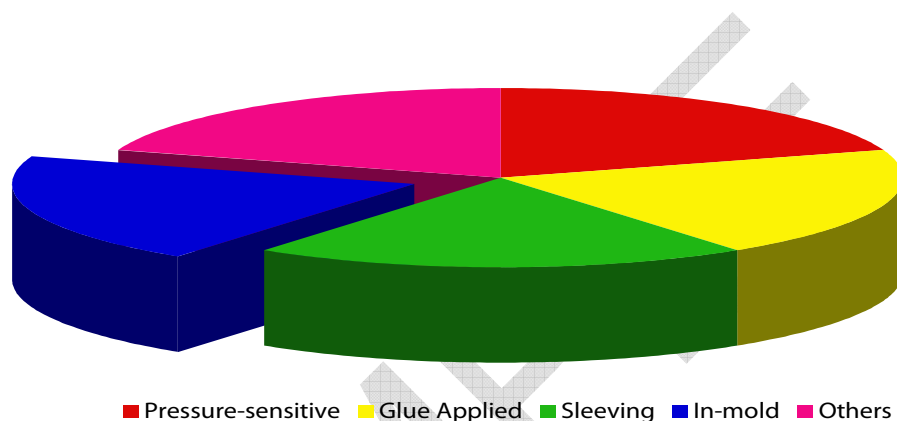
SAMPLE

2. EXECUTIVE SUMMARY

2.1 In-mold Labels

The relative global shares of labeling technologies are shown in the following exhibit:

Exhibit 2.2 World Market Shares by Labeling Technology – 2009



Source: AWA

An estimated X% of the world's labeling needs are met by pressure-sensitive and glue applied technologies. Growth in the use of glue applied labels is driven by the increasing volumes of hot melt (wrap-around) glue applied labels in the reel-fed and cut-and-stack formats widely used for soft drinks, mineral water, and canned food labels. Globally, pressure-sensitive growth has weakened, but remains strong in Asia Pacific – China and India are major growth regions – and in South America.

In-mold labeling technologies, at a volume of X million square meters in 2009, account for around X% of global label use and have their highest market share in Europe (X%), with North America (X%) and Asia Pacific (X%) in second and third position respectively.

3. LABEL MARKETS

To set the context for the sleeve label market, it is first necessary to appreciate developments in the label and product decoration markets on a global scale.

3.1 Product Decoration & Identification Technologies

In total we can identify at least 11 basic technologies used for product decoration and identification. These are as follows:

Exhibit 3.1 Product Decoration & Identification Technologies

- Pressure-sensitive Labels
- Sleeve Labels
 - Heat shrink Sleeve Labels
 - ROSO™/MD Sleeve Labels
 - Stretch Sleeve Labels
- Gummed Labels
- Glue Applied Labels
 - Cold (Wet) Glue Labels
 - Hot Melt (Wraparound) Labels
- In-mold Labels (IML)
 - IML-EB
 - IML-IM
 - IML-TF
- Heat Transfer
- Hot & Cold Foil Stamping
- Thermal Transfer
- Applied Ceramics
- Heat Seal
- Direct Printing
- Bottles/Cans
- Flexible Packaging
- Cartons
- Inkjet, Laser etch, etc.

Source: AWA

Forms of product decoration generally fulfill one or both of the following functions:

- Product marketing function (branding, merchandising, communication of information, promotional, product benefits)

- Information carrier (product identification and tracking codes, use-by-dates, instructions for use, product components, health warnings, nutritional data, etc)

SAMPLE

4. IN-MOLD LABEL MARKET STRUCTURE, VALUE CHAIN & SEGMENTATION

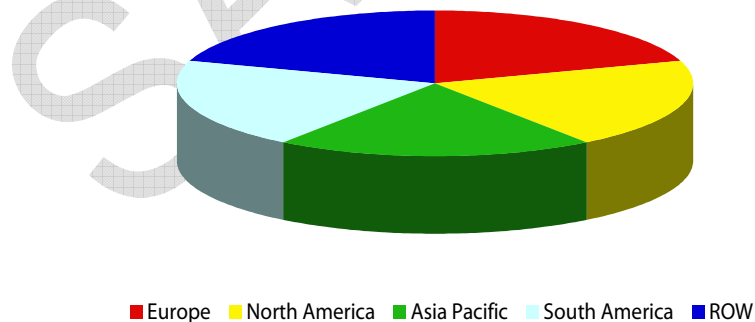
4.1 In-mold Label Market

The global demand for in-mold labels in 2009 is estimated at X million square meters. The largest regional market for this label format is Europe, with an estimated X% share of the global demand equivalent to X million square meters.

North America is the second largest consumer of in-mold labels, with a volume in 2009 of X million square meters, equivalent to X% of global demand.

Asia Pacific is the third largest regional user of in-mold labels, with an estimated X% share of the global market at X million square meters in 2009.

Exhibit 4.1 Global In-mold Label Market – 2009



Source: AWA

4.5 Regional In-mold Label Markets

The following describes the key regional markets for in-mold labels by geography, application technology, application category, end-use markets, and materials.

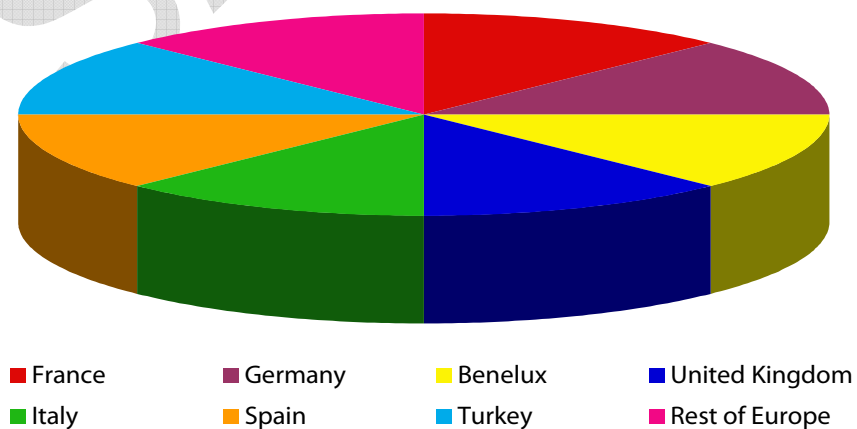
4.5.1 European In-mold Label Market

AWA estimate that the European in-mold label market in 2009 approximated to X million square meters, representing X% of the total global in-mold label market (see Exhibit 4.10).

The growth in European in-mold label volumes in 2009 is estimated at X% – a relatively strong growth given the prevailing economic situation and the general performance of alternative, competitive labeling technologies, and substantially ahead of average GDP growth.

Within Europe, the country-by-country share of the total regional market is shown in the following exhibit.

Exhibit 4.12 European In-mold Label Market – Country-by-country, 2009



Source: AWA

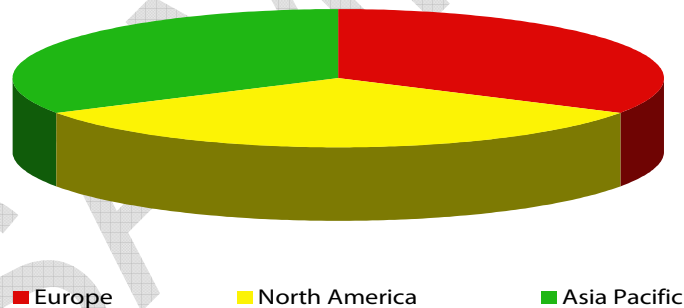
5.1 In-mold Decoration Market

The global demand for in-mold decoration in 2009 is estimated at X million square meters. The largest regional market for this label format is the Asia Pacific market, with an estimated X% share of the global demand equivalent to X million square meters.

Europe is the second largest consumer of in-mold labels, with a volume in 2009 of around X million square meters, equivalent to X% of global demand.

North America is the third largest regional user of in-mold decoration technologies, with an estimated X% share of the global market at around X million square meters in 2009.

Exhibit 5.1 Global In-mold Decoration Market – 2009



Source: AWA

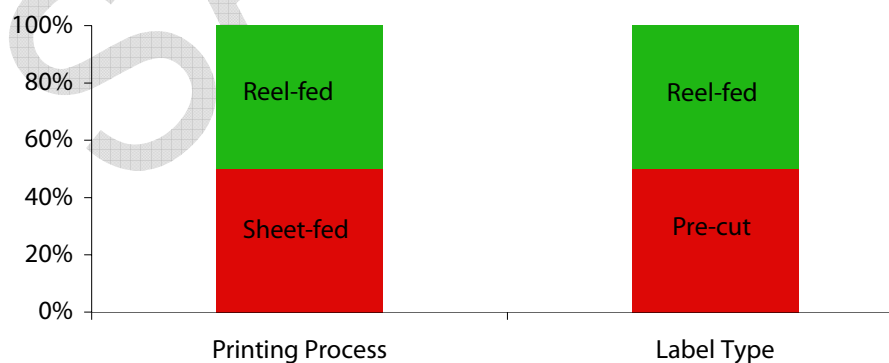
6.1.2 In-mold Label Printing Technologies

The printing and finishing processes are key to the costs of in-mold labels.

In-mold labels provide for photographic quality levels of image reproduction compared to direct printing of containers, and must maintain this standard to compete with competitive label formats such as pressure-sensitive and sleeve technologies. However, in-mold labels also demand high standards of finishing, and it is estimated that around X% of the costs of an in-mold label can be incurred in the finishing operation, post printing. This is significantly higher than for other label formats, and careful selection of printing process and finishing tolerances must be undertaken to avoid imposing high costs.

The majority of in-mold labels are printed sheet-fed and the significant majority of labels supplied pre-cut, with the minority being reel-fed and cut immediately prior to the molding process.

Exhibit 6.2 Breakdown by Printing Process & Label Type



Source: Treofan Group, AWA Conferences

7. THE FUTURE FOR IN-MOLD LABELING

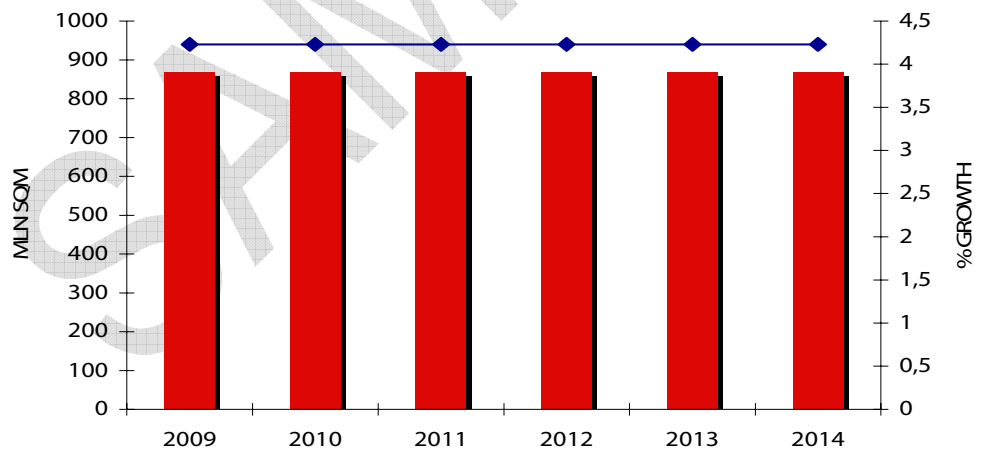
7.1 Market Trends and Forecasts

Growth in labels was influenced by the prevailing economic crisis in 2008/2009. All label formats were affected to greater or lesser extents, but in-mold label applications were not as affected as alternative labeling technologies.

In-mold decoration applications focused on the automotive and electronics sectors were affected by the slowdown in activities in these segments.

The relative growth rates and forecasts for in-mold label formats – regionally and globally – are shown in the following series of exhibits:

Exhibit 7.1 Forecast Global Growth Rates for In-mold Labels, 2009-2014



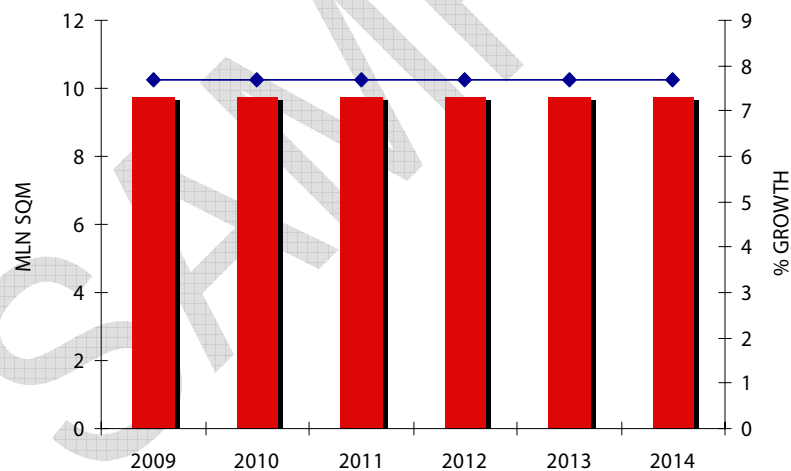
Source: AWA

8. THE FUTURE FOR IN-MOLD DECORATION

8.1 Market Trends and Forecasts

Overall AWA estimate that the global in-mold decoration market grew by X% in 2009 compared to 2008. This growth rate was a slowdown on previous growth rates as key markets in automotives and consumer electronics (cell phones, computers) and white goods were hit by the economic winter of 2008/2009. There are signs of a significant recovery in these key markets through 2010 forward, and with the developments of new technologies, AWA forecast a CAGR% of X% to X% for the period 2009 to 2014 driven by growth in all regional markets, but with actual volume growth highest in Asia Pacific.

Exhibit 8.1 Forecast Growth of Global In-mold Decoration Market, 2009-2014



Source: AWA

The forward growth is forecast on the basis of the return to growth in key end-use markets following the depressed markets on 2008 and 2009:

- The share of the global PC market taken by laptops will increase to X% of the X million units forecast for 2011

9. DIRECTORY

9.1 In-mold Label Printer Companies

CCL Label A/S

Nyager 11-13
DK-2605 Brøndby
Denmark
Tel: +45 43 45 68 00
Fax: +45 43 43 06 00
E-mail: cphinfo@ccllabel.dk
Web: www.ccllabel.dk



CCL Label

576 College Commerce Way
Upland, CA 91786-4377
USA
Tel: +1 909 608 2260
Fax: +1 909 981 5042
E-mail: rryckman@cclind.com
Web: www.ccllabel.com/upland



CCL Label (Thai) Ltd

Wellgrow Industrial Estate
km 36 Bangna-Trad Highway
69 Moo 5, Bangsamark
Bangkapong, Chachoengsao
24180
Thailand
Tel: +66 38 571 381
Fax: +66 38 571 384
E-mail: janzai@ccllabel.co.th
Web: www.ccllabel.com/bangkok



Custom Labels Inc/Custom Printed Products

4924 Hazel Jones Road
Bossier City, LA 71111
USA
Tel: +1 318 747 7460
Fax: +1 318 747 0179
E-mail: info@cpp-flexo.com
Web: www.cpp-flexo.com

