



FINAT

Linking the Label Community

REPORT & ANALYSIS:

THE EUROPEAN NARROW WEB MARKET

FINAT RADAR 9
1ST SEMESTER 2018

REPORT & ANALYSIS: THE EUROPEAN NARROW WEB MARKET

Dear Reader,

It is my pleasure to present you the 9th edition of FINAT's 6-monthly market monitor, the FINAT RADAR.

As in previous years, this 'spring' edition (the survey was carried out in April-May) covers the perspective of label converters in Europe. I am very pleased to see that interest in the survey continues to grow and that almost 100 converters responded this time. In its 5th year since the launch back in 2014, the RADAR has become the reference publication about trends and developments in the European label and narrow industry, its markets and its prospects. It is an invaluable tool for FINAT members to assess their own performance against the industry average, and to make informed decisions about their business strategies going forward.

This edition also contains a special section on the evolution of digital printing in our sector. As such, it is an add-on to the special report commissioned by FINAT last year prior to Labelexpo, which is still available for downloading to members on the FINAT website.

As I mentioned in my closing address at the European Label Forum in Dublin, our industry has a bright future. As mentioned in the previous RADAR, again and again brands claim their label solutions providers offer more innovation and agility over other packaging sector.

Ours is an industry of change and the FINAT RADAR is an essential vehicle for members to stay ahead of the game.

Chris Ellison
FINAT President

Researched and compiled by LPC, Inc.



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SCOPE OF THE REPORT

In this edition of the FINAT RADAR we once again present data and analysis obtained from the RADAR Converter Survey. This is the fifth year we have sent out the Converter Survey and nearly 100 FINAT member converters from across Europe filled out detailed questionnaires. Following up with last year's publication of the FINAT Digital Label Market Study, we included some in-depth questions in this year's Converter Survey to complement last year's research efforts in addition to provide new and updated information about the European Market for digital labels.

In these pages we also present the inaugural edition of the FINAT Digital Press Index. This is the first time such a comprehensive digital index has been presented in the European market and to compile it every major European digital press manufacturer submitted their press installation volumes for 2017 by digital press format and by sales price point. The analysis of this data and comparing and contrasting it to the RADAR conventional press index indicates that 2017 marks the first year that the volume of new installed digital label presses surpassed new conventional label press installed volumes. As we move forward with the FINAT Digital Press Index we will continue to fine tune this section of the report to ensure that when we discuss specific press formats (toner-based, inkjet and hybrid digital presses) we are truly making an 'apples to apples' comparison.

In examining the analysis herein, we can refer to 2017 as the '*year of growth in non-prime label sectors.*' Historical RADAR analysis has often indicated that highest growth sectors for converters have been the prime label markets of food, beverage, health and beauty, etc. However in this year's RADAR Converter Survey companies indicated that 2017 was a year of robust growth in markets such as automotive, consumer durables and industrial chemicals. The only prime label market that was among the four highest-growth sectors for 2017 was the beverage segment.

This year's RADAR Converter Survey also included a section that asked converters to rate specific technical application areas and to indicate how critical they consider these application areas are when it comes to serving their customers and prospects. Included in the criteria given to converters to comment on and rank were removable adhesives, linerless labels, flexible packaging applications, extended text labels and RFID. We think you will find the results of this section of the survey particularly interesting and this information will certainly guide our future research for the RADAR to ensure we are able to continue to make the research as relevant and resourceful as possible to all FINAT members.

Sincerely,
LPC, Inc.

Section 1

FINAT CONVERTER VIEWPOINT THE 2018 FINAT CONVERTER SURVEY

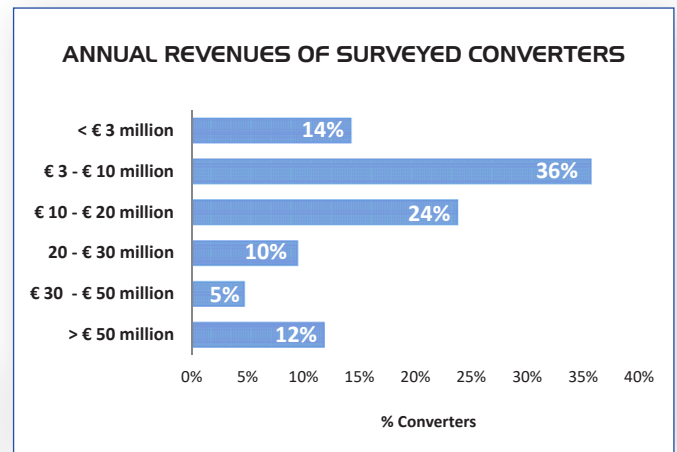
The analysis, data and production metrics in this section of the FINAT RADAR have been compiled using feedback from the annual RADAR Converter Survey as a foundation. The annual survey is an extensive questionnaire distributed to association members across every European region, and asks participants a series of questions targeting sales growth, profitability growth, equipment procurement projects, labour and material costs trends. The survey also asks converters to indicate which end-use categories (food labels, beverage labels, pharmaceutical labels, chemical labels, etc.) have delivered the most growth over the past year.

This year's RADAR Converter Survey also asked some new questions relevant to the European digital label industry. Converters were asked what their time frames were for the purchase of their next digital press in addition to what type of technology they will be buying (toner-based, inkjet or hybrid) and what they anticipate the price point of their next digital press purchase to be. These topics were recently presented at the FINAT European Label Forum in Dublin, in addition to the results of the first ever FINAT RADAR Digital Press Index, also featured in this edition of the RADAR.

Once again, we want to thank all of the FINAT members who filled out the RADAR Converter Survey. Nearly 100 FINAT converter members participated in this year's questionnaire. The success of the report relies on member participation and the response we have year-over-year serves to demonstrate the ongoing dedication of FINAT's membership.

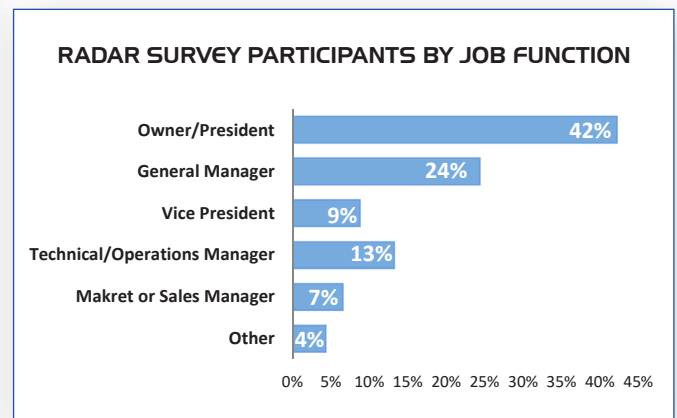
SIZE AND JOB FUNCTION

Participating converters were asked to indicate their company's annual revenues, and each respondent was asked to indicate their job function. Half of all participants have annual sales revenue of € 3-10 million and more than 17% of participating companies have annual revenues of more than €30 million.



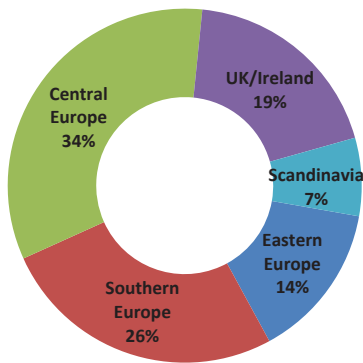
Note: Percentages add up to more than 100% due to rounding.

Sixty-six percent of survey participants are company owners and/or General Managers. The chart below breaks down the range of job functions for all respondents who filled out the FINAT Converter Survey.



Note: Percentages add up to more than 100% due to rounding

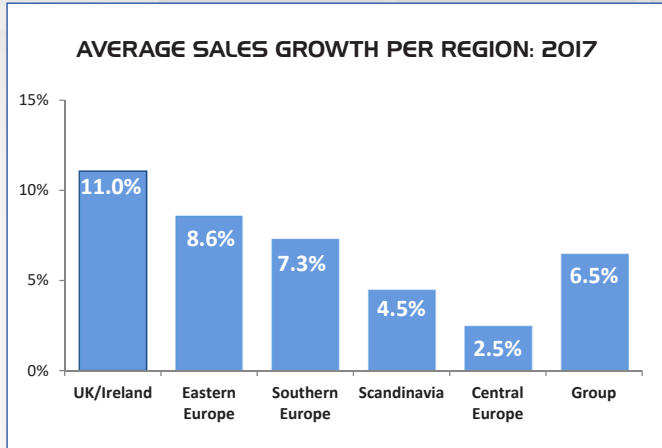
CONVERTER PARTICIPATION BY REGION



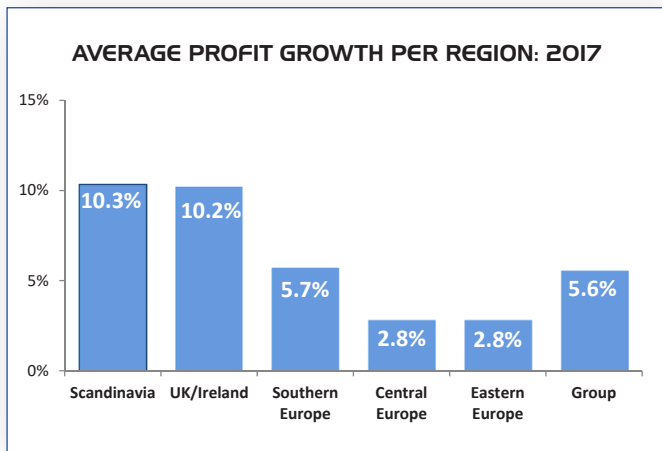
- Scandinavia:** Sweden, Norway, Denmark, Finland and Iceland
- UK/Ireland:** England, Northern Ireland, Scotland, Wales and Ireland
- Central Europe:** Germany, Austria, Switzerland, Netherlands, Belgium and Luxembourg
- Southern Europe:** France, Italy, Spain, Portugal, Greece, Turkey and Cyprus
- Eastern Europe:** Russia, Poland, Czech Republic, Slovakia, Bulgaria, Hungary, Romania, Ukraine, Belarus, Moldova, Estonia, Latvia, Lithuania, Slovenia, Croatia, Bosnia and Herzegovina, Macedonia, Montenegro and Serbia

YEAR-OVER-YEAR SALES AND PROFIT GROWTH

In order to gauge converter growth in 2017, survey respondents were asked to report on their companies' year-over-year sales and year-over-year profitability growth and/or contraction rates. The chart below shows average 2017 sales revenue growth per region.



2017 delivered lower sales growth compared to 2016 for every region except Scandinavia. Central Europe witnessed the sharpest year-over-year decline with converters reporting an average of 2.5% growth for 2017 compared to 5.5% growth in 2016.



With the exception of Southern Europe and Scandinavia, year-over-year profitability rates are up in every region with a rate increase for the overall group of 1.1%. Seventy-six percent of converters reported an increase in year-over-year profitability rates in 2017. Sixteen percent of converters reported profitability levels in 2017 were the same as 2016 and just 8% of converters reported a decrease in year-over-year profitability.

INDEXING CONVERTER SALES GROWTH 2013 - 2017

For the past five years, the RADAR Converter Survey has been tracking converter sales revenue growth. This allows us to create an index, enabling the comparison of sales revenue growth for converters over a specified time period. It also allows us to compare and contrast the historical growth curves between each region.

The table below illustrates year-over-year average converter sales growth per region for 2013 – 2017. Converters in Eastern Europe and the UK/Ireland have witnessed highest growth, with the average rate for both regions hovering just below 10%. Scandinavian converters have historically reported lowest year-over-year growth, averaging 4.0% year-over-year since 2013.

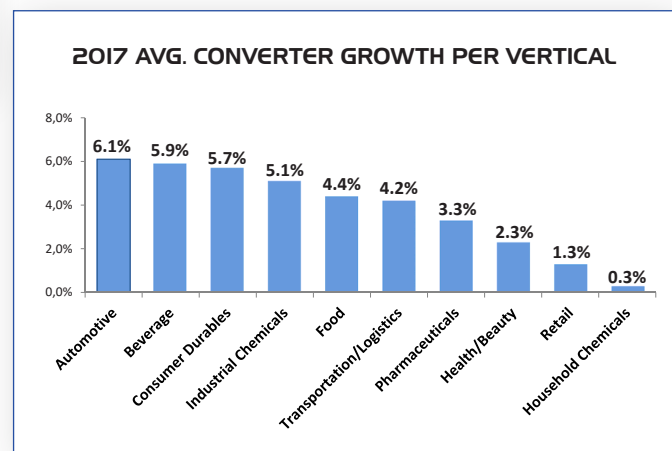
Sales Growth Averages for European Converters: 2013-2016						
Region	2013	2014	2015	2016	2017	Average 2013-2017
Eastern Europe	7.2%	10.1%	10.5%	10.5%	8.6%	9.4%
Uk/Ireland	5.3%	9.9%	9.8%	13.2%	11.1%	9.9%
All Regions	5.7%	6.7%	8.4%	8.3%	6.5%	7.1%
Central Europe	5.2%	4.0%	9.5%	5.5%	2.5%	5.3%
Southern Europe	4.5%	5.7%	7.6%	8.1%	7.3%	6.6%
Scandinavia	4.2%	8.5%	-1.3%	4.3%	4.5%	4.0%

Source: LPC, Inc. FINAT RADAR
*Data taken from FINAT converters

GROWTH PER END-USE CATEGORY

As in previous converter surveys, the 2018 FINAT RADAR Converter Survey asked participating companies to indicate revenue growth, or contraction rates, for the top five end-use sectors each company serves. It's important to note that 'Top Five' is defined as the sectors companies sell the most products to, (not necessarily their most profitable markets). It's important to note that category growth rates are lower than the regional growth rates shown on the previous page due to converters only reporting growth for their highest-volume categories for the data below. Low-volume markets and/or newly-entered markets that can deliver spikes in growth would not be included in this section, however included in the overall data, thereby driving the end-use vertical numbers lower.

The graph below shows average converter growth per end-use category for 2017.



From converters' growth data per segment, we can refer to 2017 as the "year of growth in non-prime label sectors." Historically, survey data has shown that the highest-growth sectors have most often been the prime label areas including food, beverage and

health/beauty. In 2017 however converters report highest growth rates for markets like automotive, consumer durables and industrial chemicals. The only prime label sector that was among the four highest growth markets was the beverage segment.

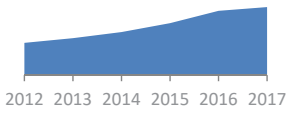
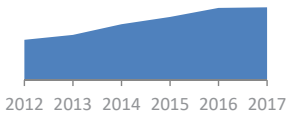
Converters indicate that the automotive sector had highest growth rates in 2017 compared to the other verticals. Economists report that for 2017 overall, the automotive industry expanded by 2.5%, the fourth consecutive year of growth and the highest annual growth rate since 2007. Sector highlights included ongoing recoveries in Italy and Spain, in addition to higher-volume unit sales in Germany and France.

Compared to 2016, sales growth was more than 7% lower for pharmaceutical labels and more than 4% lower for household chemical labels. The largest labeling sectors of food and beverage continue to hold a place among the top five highest growth market year over year, as does the industrial chemicals label market.

INDEXING CONVERTER GROWTH RATES ACROSS END-USE CATEGORIES

Like with sales growth since the RADAR has been tracking converter growth rates in each major end-use category, we are able to present an index that shows growth over the five-year period and once again allows us to compare and contrast historical performance for each vertical.

The table on the right indicates CAGR per end-use category from 2013 – 2017.

Converter Growth Rates per End-Use Category: CAGR 2013-2017		
Category	Indexed Growth Curve	CAGR 2013-2017
Food		5.27%
Beverage		4.85%
Health/Beauty		4.44%
Pharma		5.24%
Household Chemicals		3.22%
Retail		2.41%
Automotive		3.87%
Consumer Durables/Electronics		3.38%
Transportation/Logistics		2.65%
Source: LPC, Inc. FINAT RADAR *Data taken from FINAT converters		

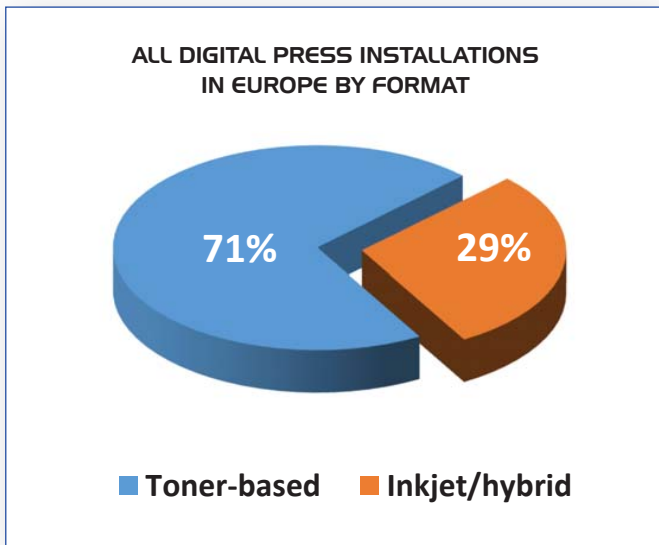
Section 2

THE EUROPEAN MARKET FOR DIGITALLY PRINTED LABELS AND THE FINAT DIGITAL PRESS INDEX

This marks the first time FINAT is publishing the association's RADAR Digital Press Index. The index seeks to offer a current glimpse of the European market for digitally printed labels by featuring the following data:

- New digital presses sold/installed in 2017
- A breakdown of those presses by digital format (toner-based vs. inkjet)
- The price points of digital presses sold into the European market in 2017

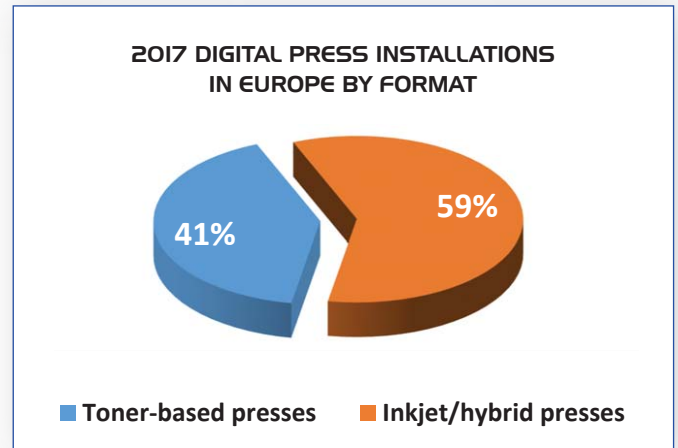
In order to offer association members this inaugural snapshot, FINAT obtained 2017 data from all major digital press manufacturers selling into the European region. According to LPC, Inc., there are an estimated 2,300 digital label presses on European production floors today. The graph below breaks down all digital label presses across Europe currently in operation by format.



Note: Throughout this section, the term 'toner-based' refers to presses that also fall into the category of 'electrophotography' presses. These presses are also frequently referred to as 'digital offset' presses. For the purposes of this research, all these categories will be referred to as toner-based presses.

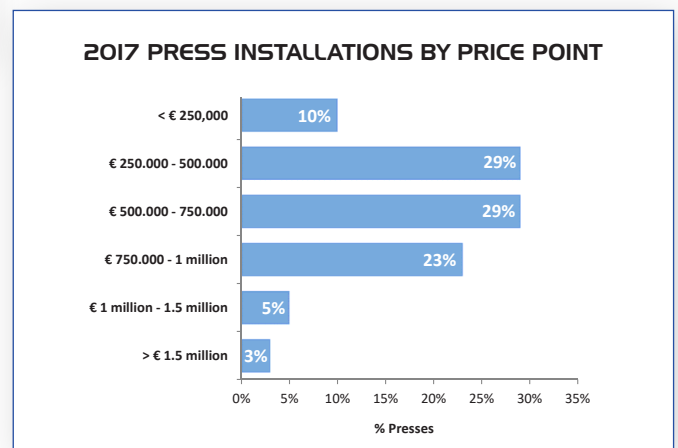
Additionally, inkjet and inkjet/hybrid press systems were combined into one category.

According to FINAT's data from digital press suppliers, nearly 300 digital presses were installed into the European marketplace in 2017. The chart on the top right breaks down the region's digital press installation base by format.



Comparing and contrasting European total digital installation data with 2017 installation data is significant in that the percentage of inkjet press installations is considerably higher than the region's current total installed base overall. In 2016 the market witnessed the introduction of a number of digital press systems at price points lower than € 350,000 and installation data for 2017 shows a marked rise for press sales within this lower-price point range.

In addition to obtaining 2017 installation data from digital press suppliers, companies were also asked to indicate the price points of each digital press installation by checking the percentage of their installations that fell within specific cost ranges. The graph below indicates digital press suppliers' responses.



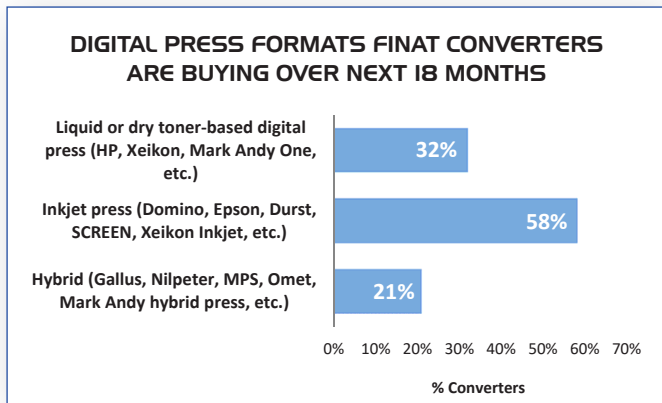
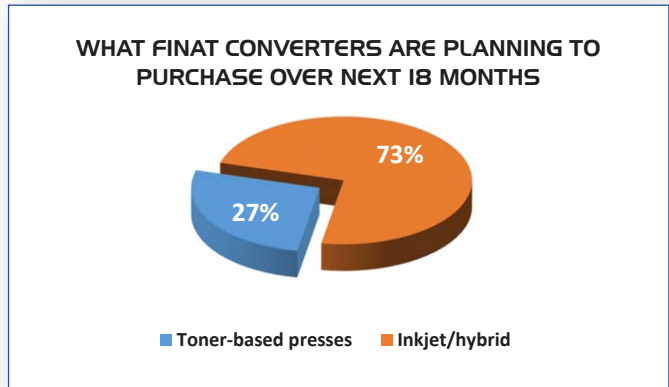
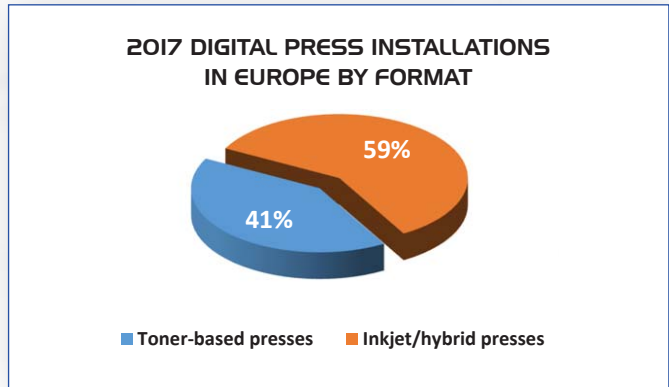
Note: Percentages add up to less than 100% due to rounding

Nearly 60% of digital presses sold into the European marketplace in 2017 fell within the price range of € 250,000 - € 750,000. Ten percent of digital press installations were priced below € 250,000 and 8% of installations were priced at greater than € 1 million.

FINAT CONVERTER MEMBERS AND THEIR DIGITAL PRESS ACQUISITION PROJECTIONS IN THE NEAR FUTURE

As a complement to the RADAR Digital Press Index, in addition to the survey's traditional queries about converters' turnover, profit, and end-use segment growth, the 2018 RADAR Converter Survey also asked companies detailed questions about their next digital press purchase.

For this question in the RADAR Converter Survey, digital press classifications were further broken down into the categories of toner-based presses, inkjet presses and hybrid presses. To make sure converters understood the types of machines that were included under each term (i.e. 'toner-based, inkjet and hybrid') we also listed examples of specific manufacturers and digital press brands for additional clarification. The graph below shows the digital press formats FINAT converter members claim the will be buying over the next 18 months.



Note: Numbers add up to more than 100% due to a number of companies purchasing multiple digital press systems and formats over the referenced time period.

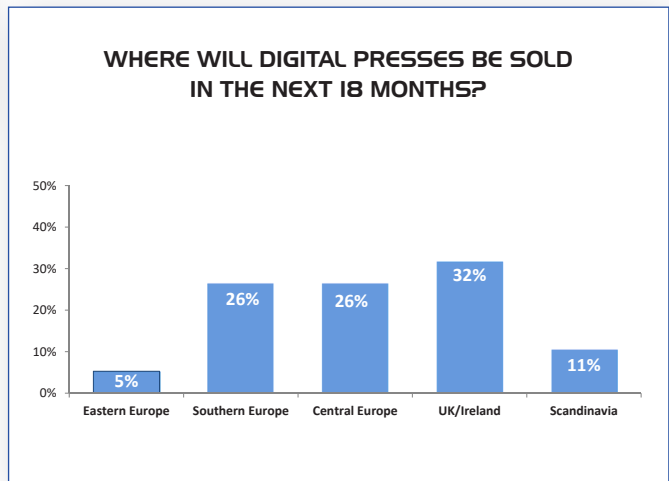
Echoing the market rise of inkjet installations in 2017, 58% of FINAT converters indicate they will be purchasing an inkjet press over the next 18 months. Around one in five converters indicated they will be purchasing a hybrid press over the next 18 months.

INDICATORS POINT TO THE CONTINUED RISE OF INKJET/HYBRID ACQUISITIONS

It's interesting to look at the following 2 charts side by side. As has been indicated by the RADAR Digital Press Index and the data submitted by digital press suppliers, 59% of digital presses installed in the European marketplace in 2017 were inkjet/hybrid presses. Data from FINAT converters suggests a continued spike in inkjet/hybrid press sales as 73% of participating converters indicated they will be buying an inkjet and/or inkjet/hybrid press over the next 18 months while 27% of converter indicated they will be purchasing a toner-based digital press system. Including this question in the RADAR Converter Survey enables us to pinpoint which regions will have highest, and lowest, digital press

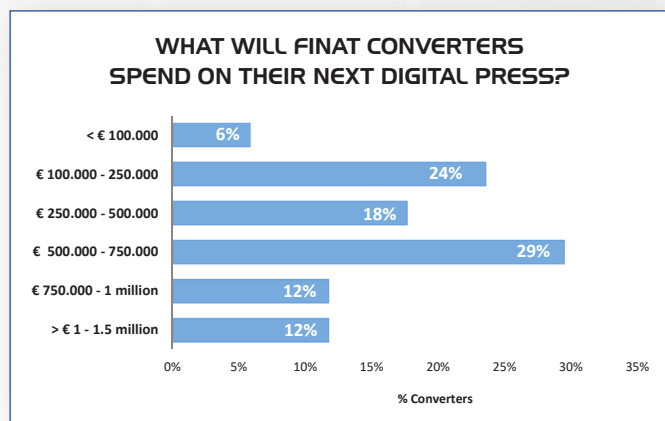
installation rates in the near future as one of the first questions in the Converter Survey asks converters to indicate their geographical regions.

The graph below breaks down FINAT converter digital press purchases by major region.



We see highest digital press acquisition rates coming from the UK and Ireland with 32% of converters indicating they will be purchasing a digital press over the next 18 months located in this region. Southern and Central European converters also indicated strong digital volume projections with 52% of converters indicating they will be purchasing a digital press over the next 18 months located in one of these two regions. Scandinavian and Eastern European converters indicated lowest digital press purchasing projections. Just 5% of companies indicating they will be buying a digital press within the next 18 months were located in Eastern Europe.

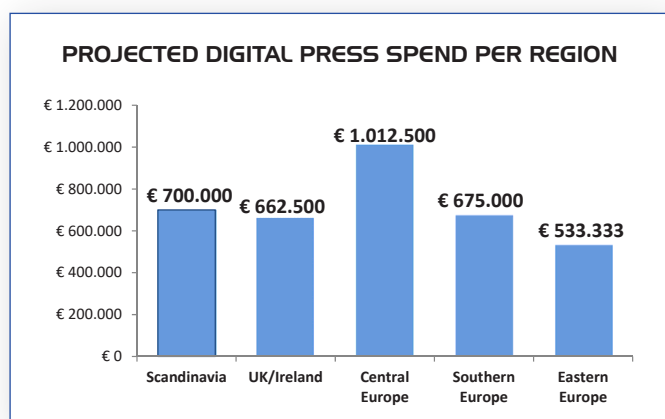
As a group, FINAT converters are indicating they will spend more for their next digital press purchases compared to the entire-market installation data digital press suppliers submitted for 2017. Nearly one-fourth of participating association converter members predict they will spend € 750,000 or more on a digital press over the next 18 months. Interestingly, a high number of FINAT converters also indicate their next digital purchase will be at the lower end of the price point range. Thirty percent of participating companies indicated they will be spending €250,000 or less on their next digital press acquisition.



Note: Percentages add up to more than 100% due to rounding

Asking detailed questions about the types of digital presses FINAT converters plan to purchase in the near future enabled us to analyze the data and identify plausible 'format preferences' per region. For example, were converters in certain regions exhibiting preferences for one particular digital format over another? The answer to this question is yes. Converters in UK/Ireland exhibited an overwhelming preference toward inkjet systems over toner-based and hybrid systems. Converters in Southern Europe also exhibited strong preferences toward inkjet presses, particularly in the countries of Italy, Spain and France. However, the vast majority of converters indicating their next digital press purchase would be a hybrid press were located in Central Europe.

Average spent-per-region data reinforces the high number of Central European converters indicating they would purchase a hybrid or toner-based press over the next 18 months. In comparing the projected digital press-spend data per region, Central Europe is the only region that averages more than €1 million.



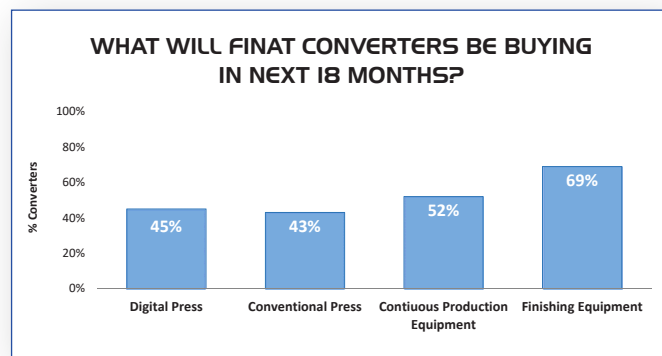
Digital press spend averages are similar for Scandinavia, UK/Ireland and Southern Europe. Eastern European converters indicated they would be spending the lowest amount on their next digital press purchase with this region's converters' digital press spend averaging just over € 530,000.

FINAT CONVERTERS' CAPITAL EQUIPMENT PROCUREMENT PROJECTIONS: REMAINDER OF 2018 & 2019

The next question in the Converter Survey asked FINAT converters to indicate what types of capital equipment investments their companies are planning on making over the course of the next eighteen months. Companies were given the following options to choose from and directed to select all those that apply:

- My company is planning on purchasing one (or more) digital press system(s)
- My company is planning on purchasing one (or more) conventional (non-digital) printing press/presses
- My company is planning on purchasing continuous production equipment (turret rewinder, butt splicer, video inspection system, etc.)
- My company is planning on purchasing finishing equipment

FINAT converters' capital equipment purchasing projections for the next 18 months is broken down by technology in the graph below.



Capital equipment purchasing projections are higher for FINAT converters than they have ever been with 45% of FINAT converters indicating they will be purchasing a digital press over the next 18 months and 43% of converters indicating they would be purchasing a conventional press. *It is also important to note that this is the first time that projected digital press acquisition volumes are higher than projected conventional press acquisition volumes in the history of the FINAT RADAR Converter Survey.*

Also interesting is the spike in projected spending in finishing equipment. We believe this is directly related to the high percentage of companies indicating they will be purchasing a digital press either in the remainder of 2018, or in 2019. The majority of these companies will need a near-line or offline finishing solution for the digital presses they purchase and this is a likely driver of the increased spending in this type of equipment across European regions.

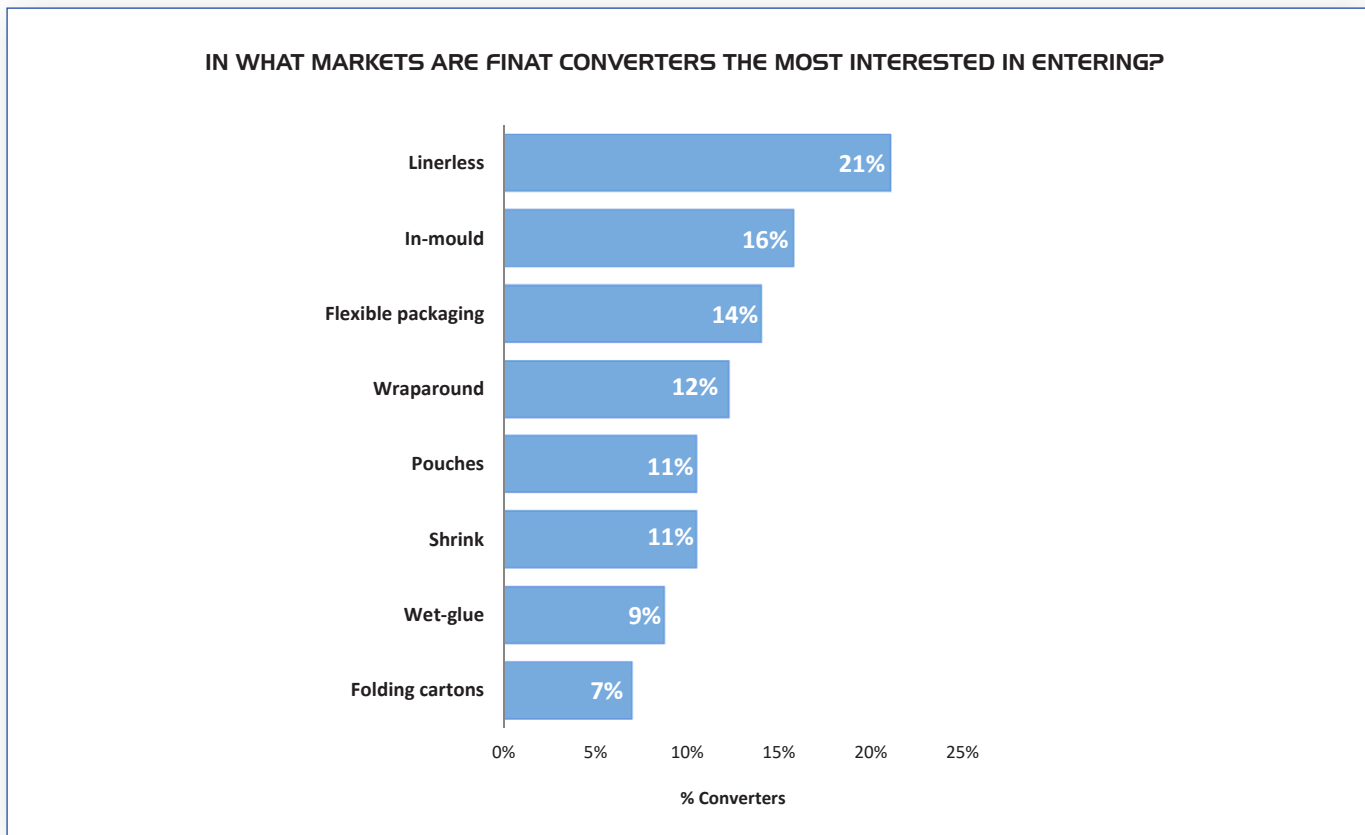
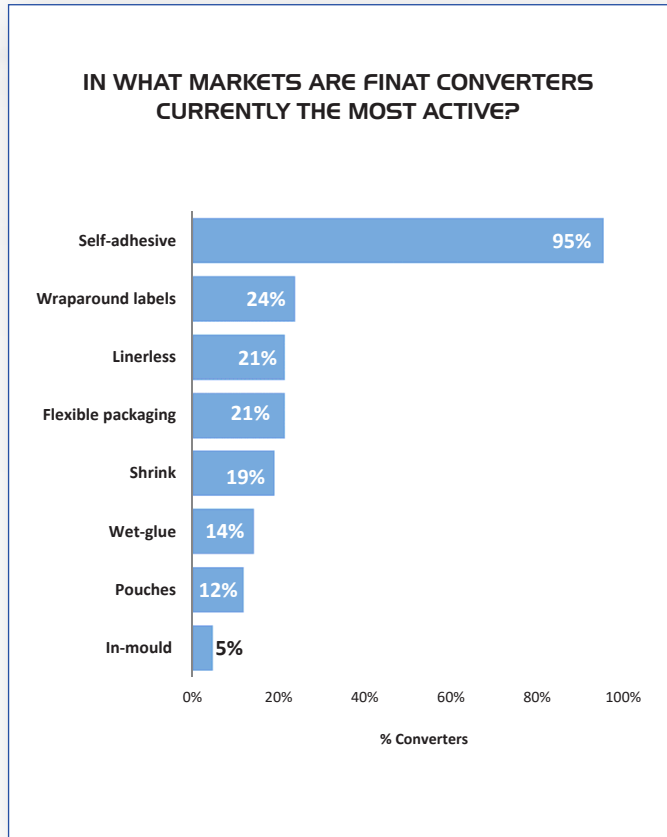
BEYOND SELF-ADHESIVE: IN WHAT OTHER MARKETS ARE CONVERTERS CURRENTLY ACTIVE AND WHAT IS THEIR INTEREST FOR THE FUTURE?

For this edition of the FINAT RADAR, we wanted to once again gauge the interest that converters have in pursuing markets outside of self-adhesive, in addition to the alternate markets they are active in currently. In the survey, converters were asked to mark their status within each application sector from the following options:

- Already Active
- Not Active, Not Interested
- Not Active, Somewhat Interested
- Not Active, Very Interested

The chart on the right indicates all of the markets where participating FINAT converters are currently active.

Outside of self-adhesive, the top three markets FINAT converters are currently active in include wraparound labels (non-shrink), linerless labels and flexible packaging applications. According to our research, FINAT member converters are least active in wet-glue, pouches and in-mould applications. It is interesting to compare and contrast this data with the new markets converters indicate they are most interested in entering.

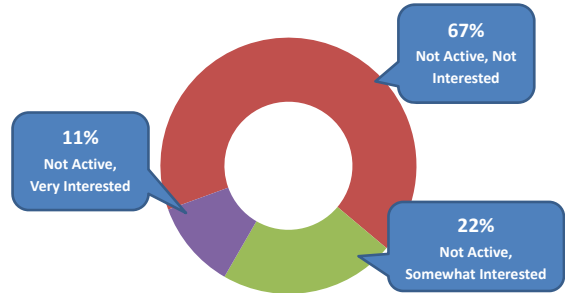


While linerless labels are already one of the top markets participating FINAT converters are currently active in, it is also a market where converters not presently active are expressing the most interest. Interest in linerless is followed by high interest in in-mould and flexible packaging applications. Converters expressed the least interest in entering the wet-glue and folding carton sectors. The graphs on the following pages show converter interest (and non-interest) in each of the application areas contained in the survey.

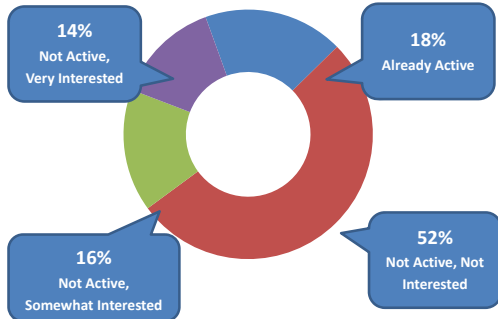
BEYOND SELF-ADHESIVE: CONVERTING POUCHES



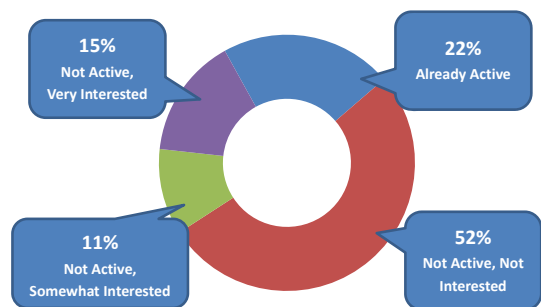
BEYOND SELF-ADHESIVE: FOLDING CARTONS



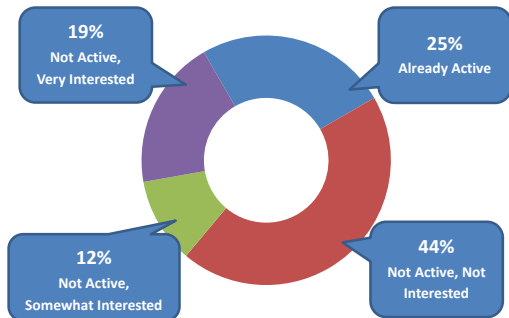
BEYOND SELF-ADHESIVE: CONVERTING SHRINK SLEEVES



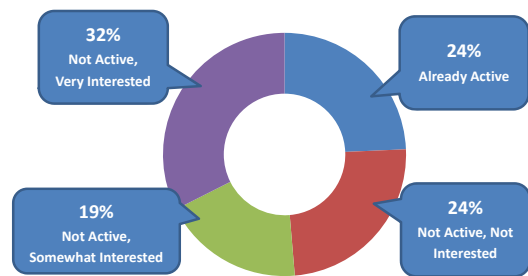
BEYOND SELF-ADHESIVE: WRAPAROUND LABELS (NON-SHRINK)



BEYOND SELF-ADHESIVE: CONVERTING FLEXIBLE PACKAGING APPLICATIONS

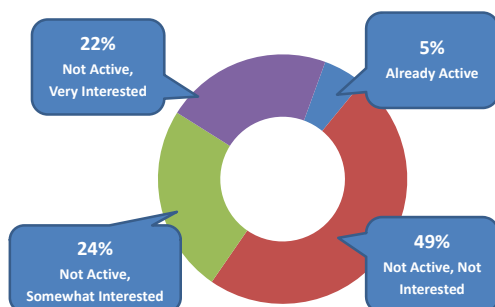


BEYOND SELF-ADHESIVE: LINERLESS LABELS



Note: Percentages add up to less than 100% due to rounding

BEYOND SELF-ADHESIVE: IN-MOULD



BEYOND SELF-ADHESIVE: WET-GLUE



Note: Percentages add up to less than 100% due to rounding

Section 3

BENCHMARKING METRICS

A LOOK AT CONVERTERS' PRODUCTION AND OPERATIONAL TRENDS

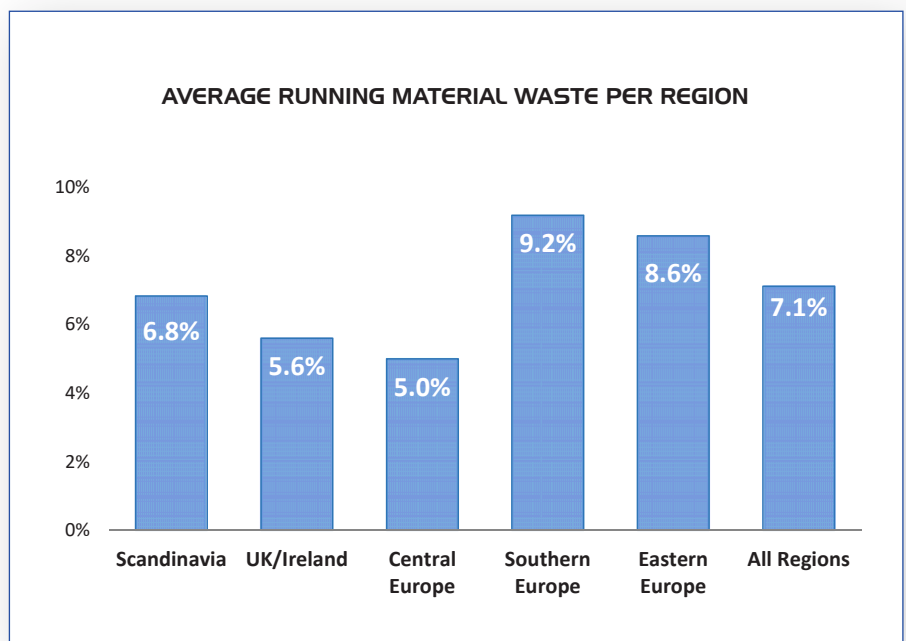
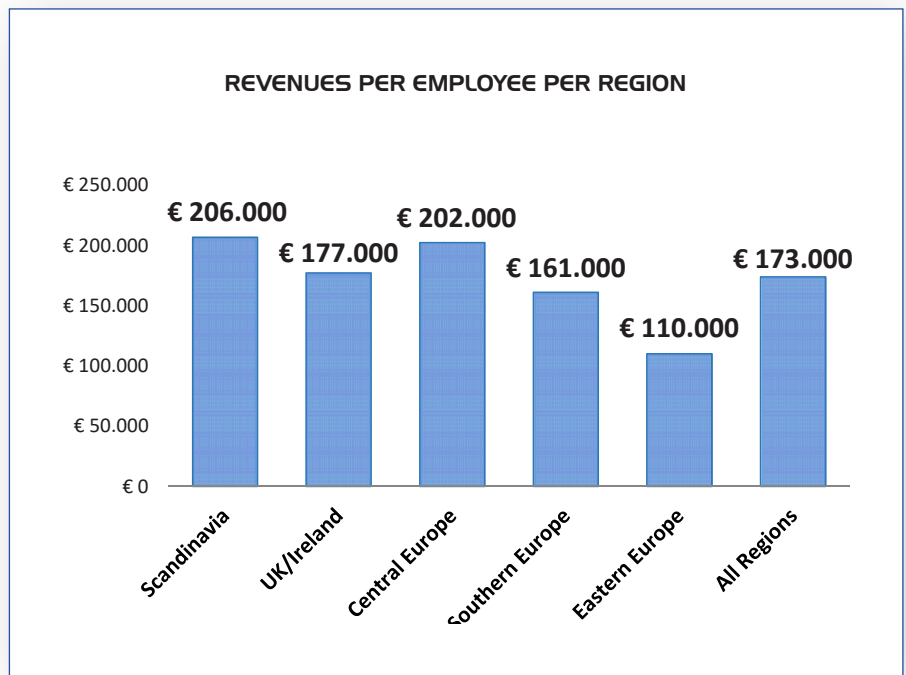
Starting in June 2015, the spring edition of the FINAT RADAR each year has a special section that reports on specific questions and analyses derived from the annual converter survey. For this report, converters were asked to indicate some key production metrics in addition to market forces that have a direct impact on their day-to-day operations.

The first of these questions asked converters to indicate their revenues-per-employee. This was defined as calculated by taking a company's total sales revenues and dividing it by the total number of employees (or full-time equivalents). The chart on the right breaks down revenues-per-employee data for the entire group, per major region.

Once again, the data shows some marked differences between regions. This year, highest revenues-per-employee averages were found in Scandinavia at € 206.000 per employee and the lowest average was once again found in Eastern Europe at € 110.000 per employee. The average revenues-per-employee number for the entire group was € 163.000, a 3.5% increase over last year.

The next converter production benchmarking question asked companies to indicate their average percentage of running material waste for the presses on their production floors. This is an important benchmark metric that the FINAT RADAR will continue to watch as average conventional job sizes/run lengths continue to decline and running waste becomes a higher operational cost as a percentage relative to the entire cost of a job. In the survey, running material waste was defined as the waste that is created during the set-up of a job, excluding matrix. The chart on the right shows average converter running waste per region.

Southern European converters report highest running waste with the rate averaging 9.2% for all participating Southern European converters. Central Europeans reported the lowest average running waste at 5.0%.



FINAT converters were also asked about their running waste in the 2015 RADAR Converter Survey and it is an interesting exercise to compare the results from the survey three years ago with the most recent survey. The graph on the right shows average running waste for FINAT converters in 2015 compared to today.

In this graph we see market forces at play. Average running waste for FINAT converters is down nearly 2.5% from the average in 2015 and **every** region's average running waste in 2018 is lower than reported in 2015. As we continue to see press technologies advance and converters dedicating resources to creating a leaner, more efficient pressroom, running waste averages continue to decline.

In addition to average running waste, converters were asked to indicate if their labour and material costs have increased, decreased or stayed the same year-over-year. The second and third graph show converters' responses.

Converters report an increase in both year-over-year labour and material costs. Nearly 70% of participating converters report an increase in material costs and just 13% report a decrease. Labour costs remained the same for 30% of participating converters with the most converters located in the UK/Ireland indicating unchanged labour rates while nearly every Eastern European converter indicated their labour rates have **increased** year over year.

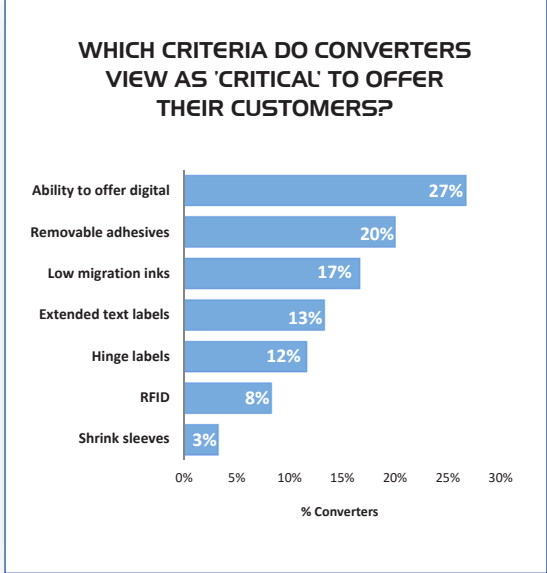
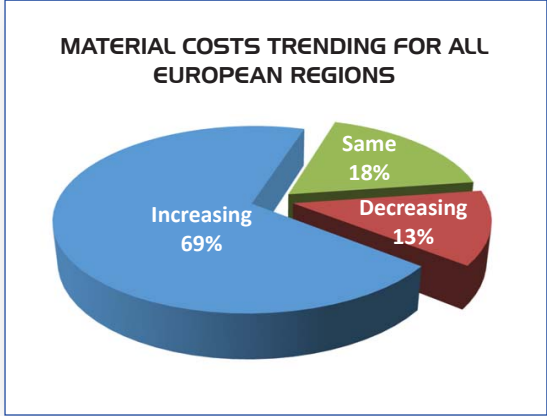
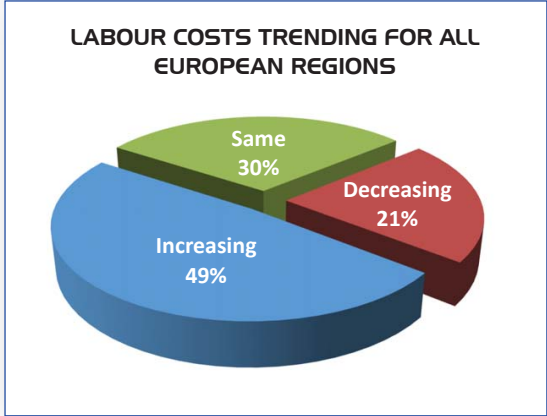
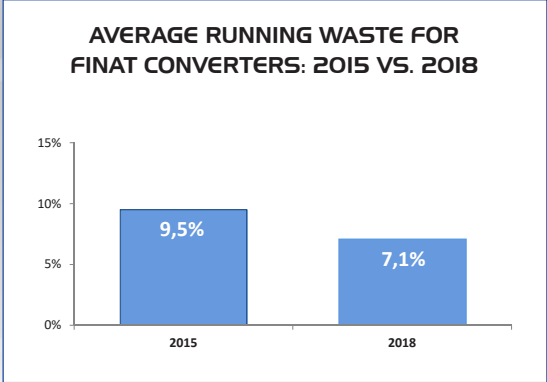
THE IMPORTANCE CONVERTERS ATTACH TO SPECIFIC TECHNOLOGIES IN TODAY'S MARKETPLACE

The final question in the FINAT RADAR Converter Survey asked converters the importance of certain applications and technologies as they formulate strategies to expand their businesses and strengthen partnerships with their customers. Converters were given a series of criteria, some technology-based and some application-based, and were asked to rate the level of importance their companies attach to each one.

Note: 'Hinge' labels are also referred to as 'peel-and-read' labels and have two layers of material. 'Extended content labels, also referred to as 'extended text' or 'booklet' labels, have more than two layers of material.

In this final question in the Converter Survey, participants were asked to rate each criteria as 'not important', 'somewhat important', 'increasingly important' or 'critical.' The graph on the bottom right shows a breakdown of the percentage of converters that considered each of these criteria as a critical offering for their companies. More than one in four converters indicated the ability to offer digital printing capabilities as critical while just 4% of converters indicated that the ability to offer digital was 'not important.' After digital, the next most-critical ranked criteria include removable adhesives, low migration inks and extended text/extended content labels.

The lowest percentage of converters viewed RFID and shrink sleeves as critical offerings for their companies, likely indicating how technically specialized RFID is as an application sector and most companies are not currently prioritizing the dedication of resources to successfully enter the RFID marketplace. As for shrink sleeves, our research indicates that companies certainly view the ability to produce shrink sleeves as an asset to their overall production, however they do not consider it a critical offering in the same way they do removable adhesives and the utilization of low migration inks. The FINAT RADAR will continue to survey converters about these types of criteria in an effort to continue to track the trends, technologies and applications sectors converters view as highest priorities in today's changing marketplace.



KEY FINDINGS PER REGION

SCANDINAVIA

- Average converter growth '13-'17: **4.0%**
- % converters buying digital press within the next 18 months: **11%**
- Average price of next digital press purchase: **€700.000**
- Digital format preference: **None indicated**
- Average sales per employee in 2017: **€ 206.000**
- Average running material waste: **6.8%**

UK/IRELAND

- Average converter growth '13-'17: **9.9%**
- % converters buying digital press within the next 18 months: **32%**
- Average price of next digital press purchase: **€662.500**
- Digital format preference: **Inkjet**
- Average sales per employee in 2017: **€ 177.000**
- Average running material waste: **5.6%**

CENTRAL EUROPE

- Average converter growth '13-'17: **5.3%**
- % converters buying digital press within the next 18 months: **26%**
- Average price of next digital press purchase: **€1.012.500**
- Digital format preference: **Hybrid and toner-based**
- Average sales per employee in 2017: **€ 202.000**
- Average running material waste: **5.0%**

SOUTHERN EUROPE

- Average converter growth '13-'17: **6.6%**
- % converters buying digital press within the next 18 months: **26%**
- Average price of next digital press purchase: **€675.000**
- Digital format preference: **Inkjet**
- Average sales per employee in 2017: **€ 161.000**
- Average running material waste: **9.2%**

EASTERN EUROPE

- Average converter growth '13-'17: **9.4%**
- % converters buying digital press within the next 18 months: **5%**
- Average price of next digital press purchase: **€533.000**
- Digital format preference: **None indicated**
- Average sales per employee in 2017: **€ 110.000**
- Average running material waste: **8.6%**

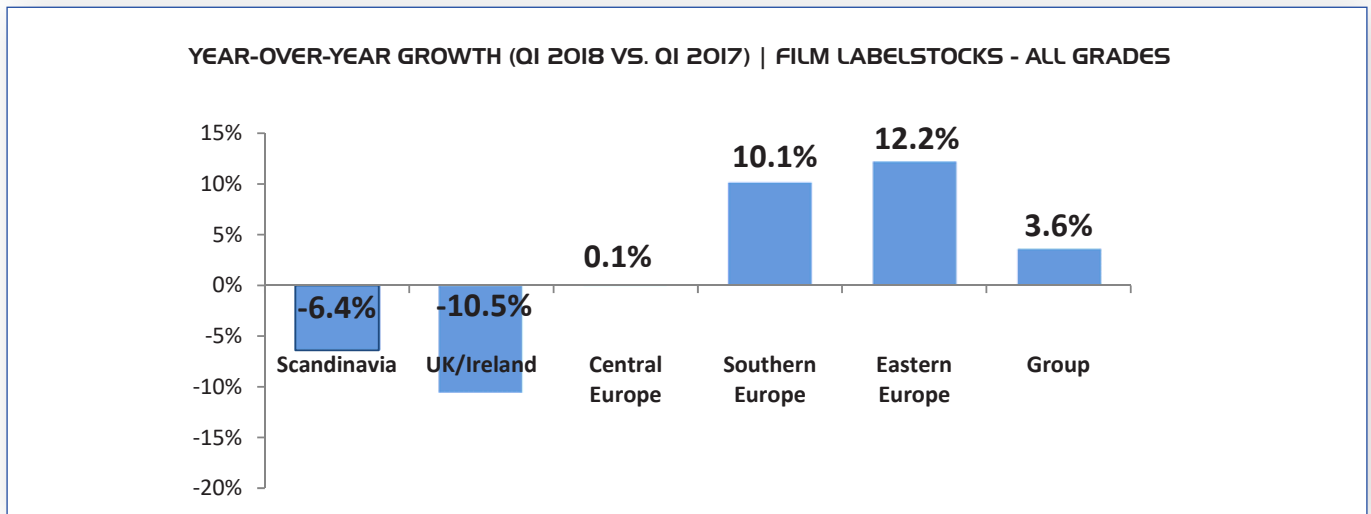
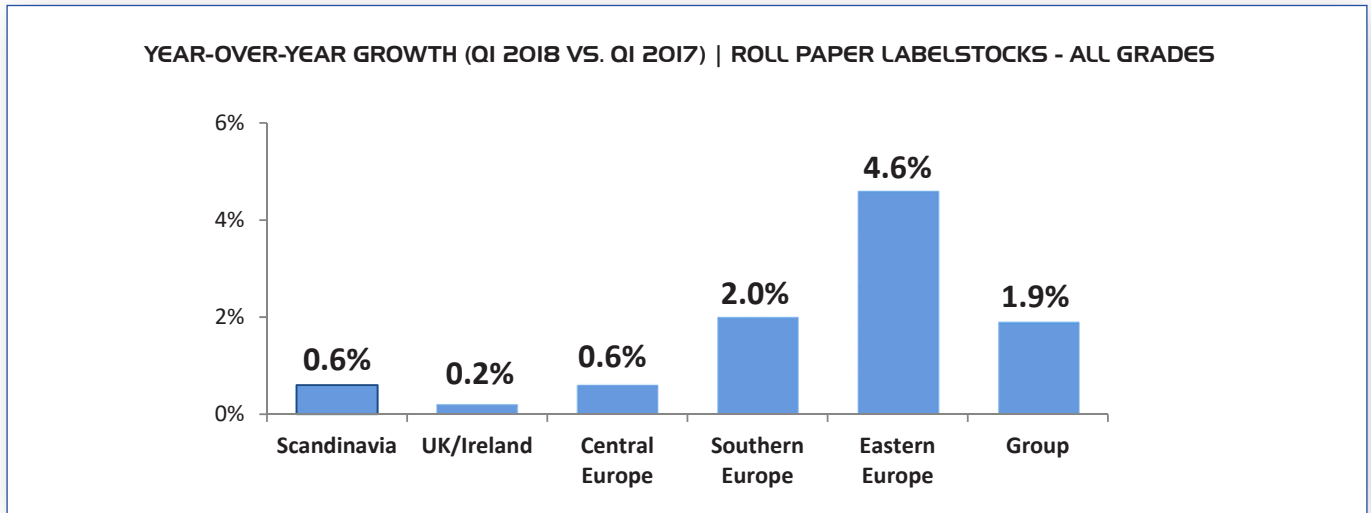
Section 4

LABELSTOCK GROWTH PER EUROPEAN REGION

YEAR-OVER-YEAR GROWTH RATES FOR PAPER AND FILM ROLL LABELSTOCKS: Q1 2018 VS. Q1 2017

In each issue of the FINAT RADAR we report on year-over-year material growth by comparing the volume sales of different types of roll labelstocks for one quarter, with the same quarter of the previous year. These data are derived from aggregated input from the quarterly *FINAT Labelstock Statistics Report*. **Average year-over-year growth (Q1 2018 compared to Q1 2017) for European paper labelstocks was 1.9%; while average growth for European film labelstocks volume sales was 3.6%.**

Roll paper labelstock quarterly results were down from Q1 2017 results, however direct thermal was once again the top performer in the paper labelstock category with year-over-year growth (Q1 2018 compared to Q1 2017) at 4.4%. The graphs below break down year-over-year growth for each labelstock type per European region.



Film labelstock quarterly results were also down from Q1 2017 results, with marked declines in Scandinavia and UK/Ireland. Polypropylene had the highest increase in the quarter-over-quarter comparison at 5.1% for the group.

Section 5

EUROPEAN CONVENTIONAL PRESS SALES

QUARTER-OVER-QUARTER VOLUME SALES

FOR CONVENTIONAL PRESSES: Q4 2017 & Q1 2018

Each issue of the FINAT RADAR has a section that presents conventional press sales data to allow for the development of an index that illustrates quarterly fluctuations in total press sales for Europe. The major press manufacturers participate in this index, representing more than an estimated 90% of the total market for conventional press sales and installations in the region.



European conventional press sales are up slightly over the last two quarters however quarter-over quarter data shows declines. Conventional press sales for the fourth quarter of 2017 compared to the fourth quarter of 2016 are down 41%. Conventional press sales for the first quarter of 2018 are down 20% compared to the first quarter of 2017. According to the data FINAT has been collecting from conventional press suppliers, we estimate that 205-215 new conventional presses were sold into the European marketplace in 2017. Given the data collected for the new FINAT RADAR digital index, *we believe that 2017 marks the first year in Europe that digital press sales volumes surpassed conventional press sales volumes.*

In addition to new press sales, conventional press manufacturers are also asked to indicate the number of machine sales that fall within specific price ranges. The graph on the right breaks down press sales for the fourth quarter of 2017 and the first quarter of 2018. Seventy-one percent of new conventional presses sold were at a price point of € 1 million or less and 29% of all conventional presses sold were at a price point at or above € 1 million.

