

# CMOS IMAGE SENSOR SERVICE - IMAGING RESEARCH

## Quarterly Market Monitor - 2019

As camera quantity and die size increase per end-device, a 10.1% year-on-year growth rate is expected for 2019.

### WHAT ABOUT THE CMOS IMAGE SENSOR SERVICE - IMAGING RESEARCH?

#### A full package:

The CMOS Image Sensor Quarterly Market Monitor includes the following deliverables:

- Excel database with quarterly update on historical and forecast data
- PDF slide deck with graphs and comments/analysis covering expected evolutions
- Direct access to a Yole Développement analysts for one year, providing an opportunity for on-demand Q&A and discussions regarding trends, analyses, forecasts, and breaking news

#### Frequency:

Receive every quarter the updated Market Monitor documents

### CMOS IMAGE SENSOR (CIS) HAS BECOME A KEY SEGMENT IN SEMICONDUCTOR INDUSTRY

CIS is an analogic variant of the CMOS process commonly used for memory and logic circuits, and has become a key segment in semiconductor, reaching \$15.5B in 2018 and exceeding 3% of total semiconductor sales. This segment has seen Sony become a significant semiconductor player, alongside other CIS players such as Samsung, OVT, and ON Semiconductor. Innovative approaches like wafer stacking technologies have emerged specifically for CIS, and have become key developments for the semiconductor market in general. In the context of a fierce rivalry in the technology sector, imaging has become a key focal point of OEMs and the entire semiconductor supply chain.

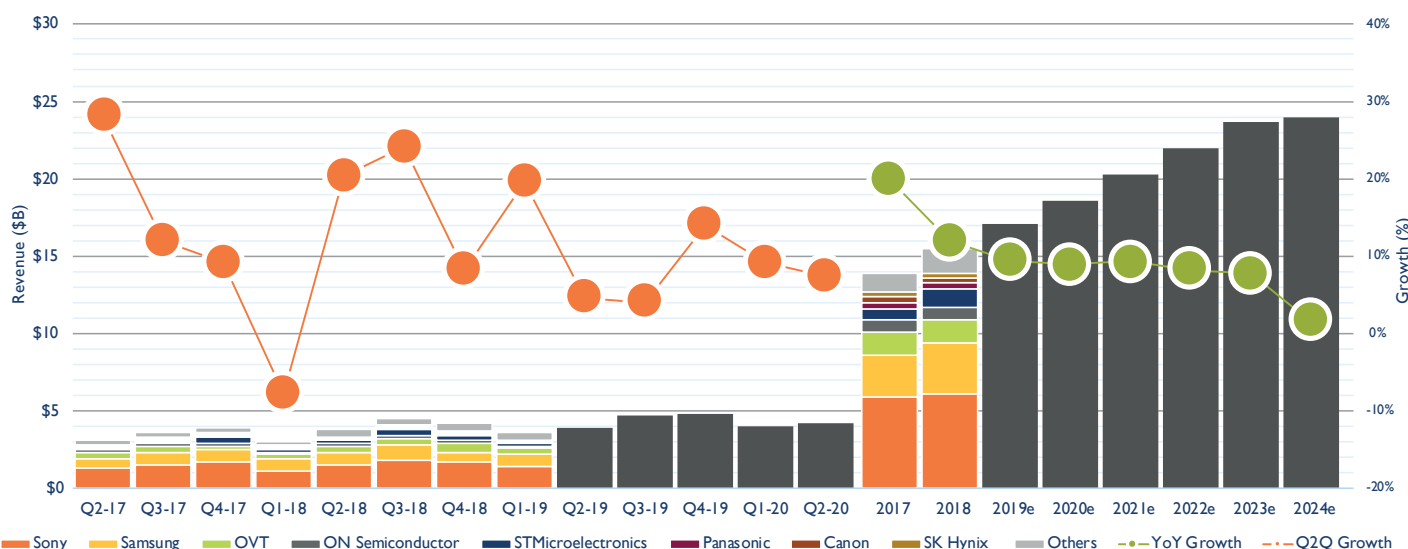
Yole Développement will begin publishing, in quarterly instalments, a monitor containing world-class research, data, and insights pertaining to the imaging markets. This monitor will analyse the CIS markets' evolution in terms of revenue, shipments, capex, and near-term price evolution, as well as demand per market segment and CIS technology evolution. NIR sensing is also included in this quarterly imaging monitor, as well as detailed profiles of main suppliers. In the future, Yole Développement will extend its coverage to other components of the imaging market.

### IMAGE SENSOR ATTACHMENT RATES ARE INCREASING, THANKS TO MOBILE PHOTOGRAPHY

In 2007, smartphones began disrupting the imaging market and its corresponding technology. Just five years later, the production peak for digital still-cameras was reached, and phones became the primary imaging device for consumers. New use-cases linked to social media began fuelling the need for high-quality rear (world-facing) cameras for photography, quickly followed by front (selfie) cameras for

videos and top-grade photography. 2015 - 2017 saw additional cameras attached, either to extend the zoom capability on the rear or to provide 3D biometric interaction on the front. In 2019, 3D rear cameras are pushing the trend further to the back, improving the photographic experience and making inroads into augmented reality (AR) applications.

CIS market dynamics



(Yole Développement, June 2019)

In 2019, the overall attachment rate for CIS cameras per phone is moving towards in average of 2.5 units per phone, and the growth rate for CIS attachment will rise from 6.5% to 7.8% from 2019 - 2021. Amidst stagnant smartphone volume, CIS attachment rate is a central, successful strategy for main smartphone OEMs like Apple, Huawei, and Samsung.

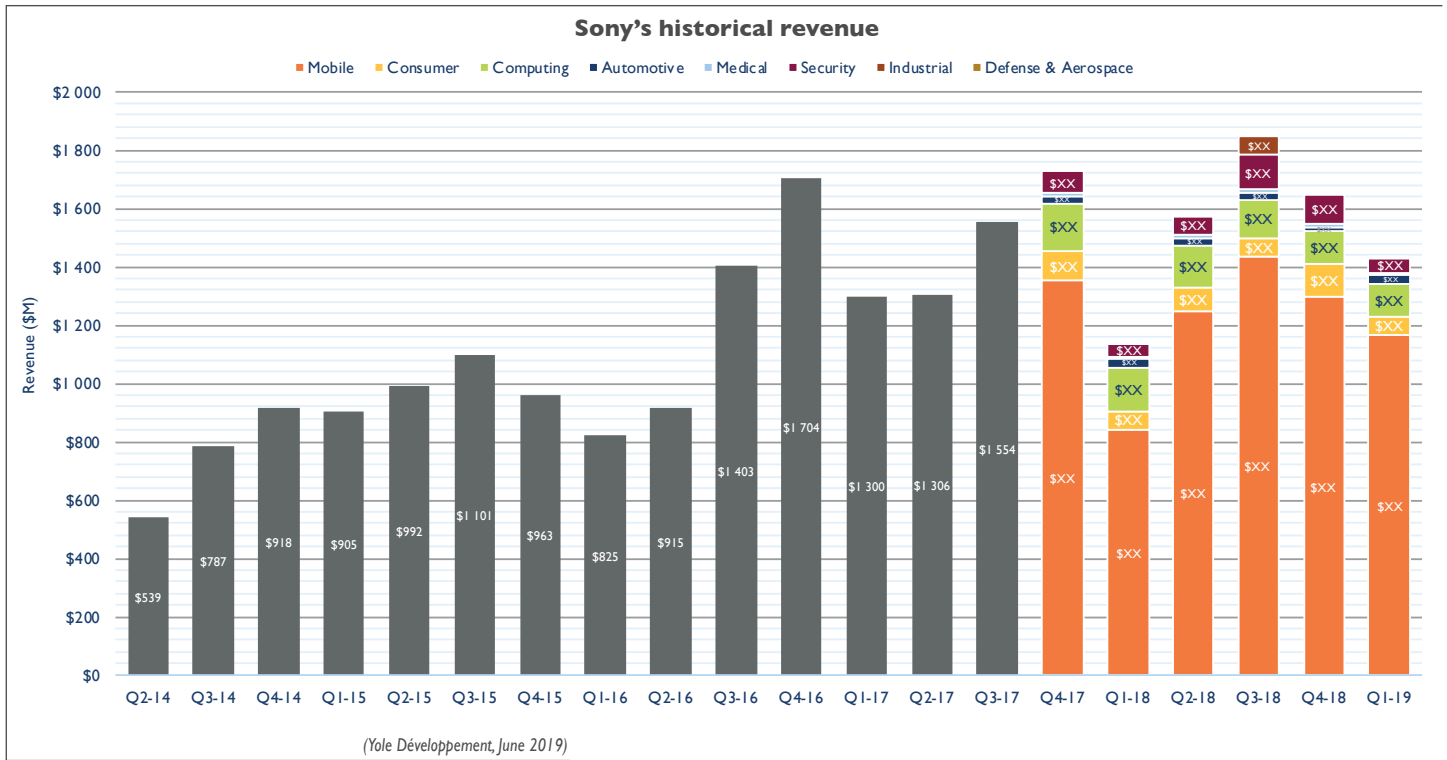
Alongside mobile, which is the main application market (representing 70% of all CIS sales), security and automotive are experiencing double-digit growth and have grown into billion-dollar CIS segments. Again, the attachment rate per end-system is the key metric to monitor.

The CIS market's future promises to be as dynamic as its past. Yole Développement's quarterly monitor will answer the pressing questions facing this industry, including:

- Will the three primary CIS (Sony, Samsung, and OVT) continue to manage supply and drive industry revenue to even higher levels?

- Will the 3D sensing trend help STMicroelectronics and Infineon join the leading pack?
- Will China's entrance in the CIS market disrupt the current market balance?
- What demand segments will emerge to compensate for the diminishing computing and consumer categories?
- How much farther will the CIS roadmap extend? Is there a future beyond hybrid stacking?
- How will AI and machine learning impact CIS demand and the technology roadmap?
- Will autonomous vehicles meaningfully impact the CIS market? If so, when?
- Will CIS capital expenditures continue their recent upward trend, or will capital intensity climb too high and threaten supplier stability?

With its CIS quarterly market monitor, Yole Développement provides opinions and answers to all of these questions on a quarterly basis.



### WHAT DO THE UPCOMING QUARTERS HOLD?

2019 looks slightly different than 2018. With a low Q1, the CIS market faces a slowly eroding

ASP since most players can now match Sony's proposition. Nevertheless, the market remains

### CIS market forecast

CIS Market Monitor																																								
Covering the entire CIS market: Mobile, Consumer, Computing, Automotive, Medical, Security, Industrial, Aerospace & Defense																																								
CIS Market Forecast																																								
	2015	2016	2017	2018	2019e	2020e	2021e	2022e	2023e	2024e	CAGR																													
CIS Revenue annual (\$M)	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX																													
Revenue Growth Rate (%)	X%	X%	X%	X%	X%	X%	X%	X%	X%	X%	X%																													
CIS Shipment annual (Munit)	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX																													
Shipment Growth Rate (%)	X%	X%	X%	X%	X%	X%	X%	X%	X%	X%	X%																													
CIS ASP (\$)	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX																													
ASP Growth Rate (%)	X%	X%	X%	X%	X%	X%	X%	X%	X%	X%	X%																													
Database Quarterly																																								
	Q1-15	Q2-15	Q3-15	Q4-15	Q1-16	Q2-16	Q3-16	Q4-16	Q1-17	Q2-17	Q3-17	Q4-17	Q1-18	Q2-18	Q3-18	Q4-18	Q1-19	Q2-19	Q3-19	Q4-19	Q1-20	Q2-20	Q3-20	Q4-20	Q1-21	Q2-21	Q3-21	Q4-21	Q1-22	Q2-22	Q3-22	Q4-22	Q1-23	Q2-23	Q3-23	Q4-23	Q1-24	Q2-24	Q3-24	Q4-24
CIS Revenue Quarterly (\$M)	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX
Revenue Q2Q Rate (%)	X%	X%	X%	X%	X%	X%	X%	X%	X%	X%	X%	X%	X%	X%	X%	X%	X%	X%	X%	X%	X%	X%	X%	X%	X%	X%	X%	X%	X%	X%	X%	X%	X%	X%	X%	X%	X%	X%	X%	
CIS Shipment Quarterly (Munit)	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX
Shipment Q2Q Rate (%)	X%	X%	X%	X%	X%	X%	X%	X%	X%	X%	X%	X%	X%	X%	X%	X%	X%	X%	X%	X%	X%	X%	X%	X%	X%	X%	X%	X%	X%	X%	X%	X%	X%	X%	X%	X%	X%	X%	X%	X%
CIS ASP Quarterly (\$)	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX
ASP Q2Q Rate (%)	X%	X%	X%	X%	X%	X%	X%	X%	X%	X%	X%	X%	X%	X%	X%	X%	X%	X%	X%	X%	X%	X%	X%	X%	X%	X%	X%	X%	X%	X%	X%	X%	X%	X%	X%	X%	X%	X%	X%	X%

(Yole Développement, June 2019)

constrained in terms of capacity, with capex the main limiting factor since customers always want more CIS cameras. The outlook though remains very positive - in the range of 10% YoY in 2019 and 8% over the long-term - CIS is heading for \$24B in 2024.

New increases in resolution (16Mp and beyond 20Mp) are linked to new progress in pixel size,

but momentum is slow in the 0.8um pixel size range. The consequence is increased die size and silicon. CIS wafer volumes are approaching 250kWpm and will climb to 350kWpm before 2024, necessitating more CIS manufacturing lines to be created or converted from regular CMOS lines.

## CIS QUARTERLY MARKET MONITOR - CONTENT

The CIS Quarterly Market Monitor contains all of the data related to CIS revenue per quarter, CIS shipments, near and long-term revenue, market share per quarter, capex per company, and market demand/supply forecasts, as well as a complete analysis and details of the demand side, with a deep dive into mobile, consumer, computing, automotive, medical, security, defense & aerospace, and industrial. For the top players (Sony, Samsung, OVT, ON Semiconductor, STMicroelectronics, Panasonic, Canon, SK Hynix, and others), the CIS Quarterly Market Monitor furnishes a detailed analysis of capex, shipments, and wafer

production per technology (process mix), along with the expected impact of CIS technology changes. The following deliverables are included:

- Excel database with all historical and forecast data
- PDF slide-deck with graphs and comments/analysis regarding expected evolutions
- Direct access to a Yole Développement analyst for one year, providing an opportunity for on-demand Q&A and discussions regarding trends, analyses, forecasts, and breaking news.

The monitor content will evolve according to the feedback received from our customers.

## COMPANIES MONITORED IN THE PRODUCT

Canon, OVT, ON Semiconductor, Panasonic, Samsung, SK Hynix, Sony, STMicroelectronics

### TABLE OF CONTENTS (complete content on i-Micronews.com)

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- > CIS market dynamics
- > Revenue
- > Shipments
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- > Quarterly revenue: Near term
- > Quarterly revenue: Long term
- > CIS market share

#### CIS market demand

- > CIS market segment share
- > Mobile market
- > Consumer market
- > Computing market
- > Automotive market
- > Medical market
- > Security market
- > Industry market
- > Aerospace & Defense market

#### CIS technology

- > CIS wafer demand, per segment

- > Per technology (VIS, NIR)
- > Shipments by technology node (XX nm)
- > Shipments by technology (FSI x BSI x Stack BSI x Multi-Stack)

#### Supply

- > Industry wafer production (CIS wafer production, per foundry - Long/near term - VIS and NIR)
- > Industry wafer capacity estimation

#### Player

- > Sony – Revenues per quarter and per application, capacity, fab.
- > Samsung – Market mix
- > OVT – Market mix
- > ON Semiconductor – Market mix
- > STMicroelectronics – Market mix
- > Panasonic – Market mix
- > Canon – Market mix
- > SK Hynix – Market mix
- > Others – Market mix

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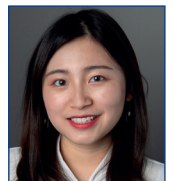
## KEY FEATURES OF THE MONITOR

- Quarterly update of the data
- Market forecast through 2024 in \$US, units, and wafers
- Market share (Sony, Samsung, OVT, ON Semiconductor, STMicroelectronics, Panasonic, Canon, SK Hynix) from 2015 to present: by revenue (\$US), segment (\$US), technology (wafer), and foundry (wafer)
- Demand forecast through 2024 by category (i.e. mobile, consumer, security, auto), in revenue (\$US) and units
- Supply forecast through 2024: by supplier for wafer production (wpm, by fab), technology mix (% of wafers), and process node (% of wafers)



## AUTHORS

**Pierre Cambou** has been part of the imaging industry since 1999. He first took several positions at Thomson TCS, which became Atmel Grenoble in 2001 and e2v Semiconductors in 2006. In 2012 Pierre founded Vence Innovation, later renamed Irllynx, to bring to market an infrared sensor technology for smart environments and interactions. He has an Engineering degree from Université de Technologie de Compiègne and a Master of Science from Virginia Tech. Pierre also graduated with an MBA from Grenoble Ecole de Management. In 2014 he joined Yole Développement as Imaging Activity Leader.



**Chenmeijing Liang** works as a Technology & Market Analyst within the Photonics, Sensing & Display Division at Yole Développement (Yole). As part of the Imaging team, Chenmeijing contributes daily to analyses of CIS markets, related technologies and market strategies of the leading semiconductor companies, as well as the quarterly monitor. Prior to Yole, she was engaged in the development of R&D projects: Chenmeijing was a member of Group PSA R&D department where she worked on Vehicle 3D Holography Imaging projects. In addition, she assisted with various technical and commercial projects. Chenmeijing Liang holds a master's Degree in the field of Applied physics and Optical engineering from Paris-Saclay University and University Pierre and Marie Curie (UPMC) (Paris, France).

# ORDER FORM

## CMOS Image Sensor Service - Imaging Research

### BILL TO

Name (Mr/Ms/Dr/Pr): .....

Job Title: .....

Company: .....

Address: .....

City: .....

State: .....

Postcode/Zip: .....

Country\*: .....

\*VAT ID Number for EU members: .....

Tel: .....

Email: .....

Date: .....

### PAYMENT

#### BY CREDIT CARD

Visa  Mastercard  Amex

Name of the Card Holder: .....

Credit Card Number:

Card Verification

Value (3 digits except AMEX: 4 digits):

Expiration date:

/

#### BY BANK TRANSFER

BANK INFO: HSBC, 1 place de la Bourse,  
F-69002 Lyon, France,  
Bank code: 30056, Branch code: 00170  
Account No: 0170 200 1565 87,  
SWIFT or BIC code: CCFRFRPP,  
IBAN: FR76 3005 6001 7001 7020 0156 587

#### RETURN ORDER BY

• MAIL: YOLE DÉVELOPPEMENT, Le Quartz,  
75 Cours Emile Zola, 69100 Villeurbanne/Lyon - France

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+ 1 310 600-8267 – laferriere@yole.fr
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+1 919 607 9839 – chris.youman@yole.fr
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- Japan & Rest of Asia - Takashi Onozawa:  
+81-80-4371-4887 – onozawa@yole.fr
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+82 10 4089 0233 – peter.ok@yole.fr
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<sup>(1)</sup> Our Terms and Conditions of Sale are available at  
[www.yole.fr/Terms\\_and\\_Conditions\\_of\\_Sale.aspx](http://www.yole.fr/Terms_and_Conditions_of_Sale.aspx)  
The present document is valid 24 months after its publishing date:  
June 27, 2019

### PRODUCT ORDER - Ref YDI9M-CIS

Please enter my order for above named monitor:

CIS Service - Imaging Research: Euro 30,000

- For price in dollars, please use the day's exchange rate. All monitors are delivered electronically at payment reception. For French customers, add 20% for VAT

I hereby accept Yole Développement's Terms and Conditions of Sale<sup>(1)</sup>

Signature: .....

### SHIPPING CONTACT

First Name: .....

Email: .....

Last Name: .....

Phone: .....

### ABOUT YOLE DÉVELOPPEMENT

Founded in 1998, Yole Développement has grown to become a group of companies providing marketing, technology and strategy consulting, media and corporate finance services, reverse engineering and reverse costing services and well as IP and patent analysis. With a strong focus on emerging applications using silicon and/or micro manufacturing, the Yole group of companies has expanded to include more than 80 collaborators worldwide covering MEMS and Image Sensors, Compound Semiconductors, RF Electronics, Solid-State Lighting, Displays, Software, Optoelectronics, Microfluidics & Medical, Advanced Packaging, Manufacturing, Nanomaterials, Power Electronics and Batteries & Energy Management.

The "More than Moore" market research, technology and strategy consulting company Yole Développement, along with its partners System Plus Consulting, PISEO and KnowMade, support industrial companies, investors and R&D organizations worldwide to help them understand markets and follow technology trends to grow their business.

#### CONSULTING AND ANALYSIS

- Market data & research, marketing analysis
  - Technology analysis
  - Strategy consulting
  - Reverse engineering & costing
  - Patent analysis
  - Design and characterization of innovative optical systems
  - Financial services (due diligence, M&A with our partner)
- More information on [www.yole.fr](http://www.yole.fr)

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  - Events: TechDays, forums...
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#### CONTACTS

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  - Reports: David Jourdan (jourdan@yole.fr) Yole Group of Companies
  - Press Relations: Sandrine Leroy (leroy@yole.fr)

**Definitions:** "Acceptance": Action by which the Buyer accepts the terms and conditions of sale in their entirety. It is done by signing the purchase order which mentions "I hereby accept Yole Développement's Terms and Conditions of Sale".

**"Buyer":** Any business user (i.e. any person acting in the course of its business activities, for its business needs) entering into the following general conditions to the exclusion of consumers acting in their personal interests.

**"Contracting Parties" or "Parties":** The Seller on one hand and the Buyer on the other hand.

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**"Report":** Reports are established in PowerPoint and delivered in a PDF format with an additional Excel file. 30 min of Q&A session with an analyst/author can be included for all purchased reports (except the ones bought in one user license). More time can be allocated on a fee basis.

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- Single user license: one person at the company can use the report. Sharing is strictly forbidden.
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- Corporate license: the report can be used by an unlimited number of users within the company, but only in the country of the primary user. Subsidiaries are included, while Joint-Ventures are excluded.

**"Monitor":** Monitors are established and delivered in Excel. An additional PDF can also join it. Q&A with an Analyst is possible for each monitor with a maximum limit of 100h/year. Frequency of the release varies according to the monitor or service.

**"Seller":** Based in Villeurbanne (France, headquarters) Yole Développement provides marketing, technology and strategy consulting, media and corporate finance services, reverse engineering/costing services as well as IP and patent analysis. With more than 70 market analysts, Yole Développement works worldwide with the key industrial companies, R&D institutes and investors to help them understand the market and technology trends.

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- 1.1 The Contracting Parties undertake to observe the following general conditions when agreed by the Buyer and the Seller. ANY ADDITIONAL, DIFFERENT, OR CONFLICTING TERMS AND CONDITIONS IN ANY OTHER DOCUMENTS ISSUED BY THE BUYER AT ANY TIME ARE HEREBY OBJECTED TO BY THE SELLER, SHALL BE WHOLLY INAPPLICABLE TO ANY SALE MADE HEREUNDER AND SHALL NOT BE BINDING IN ANY WAY ON THE SELLER.
- 1.2 This agreement becomes valid and enforceable between the Contracting Parties after clear and non-equivocal consent by any duly authorized person representing the Buyer. For these purposes, the Buyer accepts these conditions of sales when signing the purchase order which mentions "I hereby accept Yole Développement's Terms and Conditions of Sale". This results in acceptance by the Buyer.
- 1.3 Orders are deemed to be accepted only upon written acceptance and confirmation by the Seller, within [7 days] from the date of order, to be sent either by email or to the Buyer's address. In the absence of any confirmation in writing, orders shall be deemed to have been accepted.

## 2. MAILING OF THE PRODUCTS

- 2.1 Products are sent by email to the Buyer:
  - Within a few days from the order for Products already released and paid; or
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- 2.4 The mailing is operated through electronic means either by email via the sales department or automatically online via an email/password. If the Product's electronic delivery format is

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- 2.5 The person receiving the Products on behalf of the Buyer shall immediately verify the quality of the Products and their conformity to the order. Any claim for apparent defects or for non-conformity shall be sent in writing to the Seller within 8 days of receipt of the Products. For this purpose, the Buyer agrees to produce sufficient evidence of such defects.
- 2.6 No return of Products shall be accepted without prior information to the Seller, even in case of delayed delivery. Any Product returned to the Seller without providing prior information to the Seller as required under article 2.5 shall remain at the Buyer's risk.

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HSBC, 1 place de la Bourse 69002 Lyon France  
Bank code: 30056  
Branch code: 00170  
Account n°: 0170 200 1565 87  
BIC or SWIFT code: CCFRFRPP  
IBAN: FR76 3005 6001 7001 7020 0156 587

 To ensure the payments, the Seller reserves the right to request down payments from the Buyer. In this case, the need of down payments will be mentioned on the order.
- 3.3 Payment is due by the Buyer to the Seller within 30 days from invoice date, except in the case of a particular written agreement. If the Buyer fails to pay within this time and fails to contact the Seller, the latter shall be entitled to invoice interest in arrears based on the annual rate Refi of the "BCE" + 7 points, in accordance with article L. 441-6 of the French Commercial Code. Our publications (report, database, tool...) are delivered only after reception of the payment.
- 3.4 In the event of termination of the contract, or of misconduct, during the contract, the Seller will have the right to invoice at the stage in progress, and to take legal action for damages.

## 4. LIABILITIES

- 4.1 The Buyer or any other individual or legal person acting on its behalf, being a business user buying the Products for its business activities, shall be solely responsible for choosing the Products and for the use and interpretations he makes of the documents it purchases, of the results he obtains, and of the advice and acts it deduces thereof.
- 4.2 The Seller shall only be liable for (i) direct and (ii) foreseeable pecuniary loss, caused by the Products or arising from a material breach of this agreement.
- 4.3 In no event shall the Seller be liable for:
  - a) Damages of any kind, including without limitation, incidental or consequential damages (including, but not limited to, damages for loss of profits, business interruption and loss of programs or information) arising out of the use of or inability to use the Seller's website or the Products, or any information provided on the website, or in the Products;
  - b) Any claim attributable to errors, omissions or other inaccuracies in the Product or interpretations thereof.
- 4.4 All the information contained in the Products has been obtained from sources believed to be reliable. The Seller does not warrant the accuracy, completeness adequacy or reliability of such information, which cannot be guaranteed to be free from errors.
- 4.5 All the Products that the Seller sells may, upon prior notice to the Buyer from time to time be modified by or substituted with similar Products meeting the needs of the Buyer. This modification shall not lead to the liability of the Seller, provided that the Seller ensures the substituted Product is similar to the Product initially ordered.
- 4.6 In the case where, after inspection, it is acknowledged that the Products contain defects, the Seller undertakes to replace the defective products as far as the supplies allow and without indemnities or compensation of any kind for labour costs, delays, loss caused or any other reason. The replacement is guaranteed for a maximum of two months starting from the delivery date. Any replacement is excluded for any event as set out in article 5 below.
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## 5. FORCE MAJEURE

The Seller shall not be liable for any delay in performance directly or indirectly caused by or resulting from acts of nature, fire, flood, accident, riot, war, government intervention, embargoes, strikes, labour difficulties, equipment failure, late deliveries by suppliers or other difficulties which are beyond the control, and not the fault of the Seller.

## 6. PROTECTION OF THE SELLER'S IPR

- 6.1 All the IPR attached to the Products are and remain the property of the Seller and are protected under French and international copyright law and conventions.
- 6.2 The Buyer agreed not to disclose, copy, reproduce, redistribute, resell or publish the Product, or any part of it to any other party other than employees of its company (only in the country of the primary user). The Buyer shall have the right to use the Products solely for its own internal information purposes. In particular, the Buyer shall therefore not use the Product for purposes such as:
  - Information storage and retrieval systems;
  - Recordings and re-transmittals over any network (including any local area network);
  - Use in any timesharing, service bureau, bulletin board or similar arrangement or public display;
  - Posting any Product to any other online service (including bulletin boards or the Internet);
  - Licensing, leasing, selling, offering for sale or assigning the Product.
- 6.3 If the Buyer would like to use data coming from the Products for presentations, press announcements and any other projects, the Buyer needs to contact Yole Développement's Public Relations Director (info@yole.fr) to get an official authorization and verify data are up to date. In return the Seller will make sure to provide up-to-date data under a suitable public format.
- 6.4 The Buyer shall be solely responsible towards the Seller of all infringements of this obligation, whether this infringement comes from its employees or any person to whom the Buyer has sent the Products and shall personally take care of any related proceedings, and the Buyer shall bear related financial consequences in their entirety.
- 6.5 The Buyer shall define within its company a contact point for the needs of the contract. This person will be the recipient of each new report. This person shall also be responsible for respect of the copyrights and will guaranty that the Products are not disseminated out of the company. In the context of Bundle and Annual Subscriptions, the contact person shall decide who within the Buyer, shall be entitled to receive the protected link that will allow the Buyer to access the Products.
- 6.6 Please note that whether in Bundles or Annual Subscription, all unselected reports will be cancelled and lost after the 12 month validity period of the contract.
- 6.7 As a matter of fact the investor of a company, external consultants, the joint venture done with a third party, and so on cannot access the report and should pay a full license price.

## 7. TERMINATION

- 7.1 If the Buyer cancels the order in whole or in part or postpones the date of mailing, the Buyer shall indemnify the Seller for the entire costs that have been incurred as at the date of notification by the Buyer of such delay or cancellation. This may also apply for any other direct or indirect consequential loss that may be borne by the Seller, following this decision.
- 7.2 In the event of breach by one Party under these conditions or the order, the non-breaching Party may send a notification to the other by recorded delivery letter upon which, after a period of thirty (30) days without solving the problem, the non-breaching Party shall be entitled to terminate all the pending orders, without being liable for any compensation.

## 8. MISCELLANEOUS

All the provisions of these Terms and Conditions are for the benefit of the Seller itself, but also for its licensors, employees and agents. Each of them is entitled to assert and enforce those provisions against the Buyer. Any notices under these Terms and Conditions shall be given in writing. They shall be effective upon receipt by the other Party. The Seller may, from time to time, update these Terms and Conditions and the Buyer, is deemed to have accepted the latest version of these terms and conditions, provided they have been communicated to him in due time.

## 9. GOVERNING LAW AND JURISDICTION

- 9.1 Any dispute arising out or linked to these Terms and Conditions or to any contract/orders entered into in application of these Terms and Conditions shall be settled by the French Commercial Courts of Lyon, which shall have exclusive jurisdiction upon such issues.
- 9.2 French law shall govern the relation between the Buyer and the Seller, in accordance with these Terms and Conditions.