FROST & SULLIVAN

Growth Opportunity Analysis of the Global Software License Management Market

Continual Demand for SaaS Products and Intelligent Devices Creates Need for Entitlement Management

Frost & Sullivan's Global 360° Research Team

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Contents

Contents (continued)

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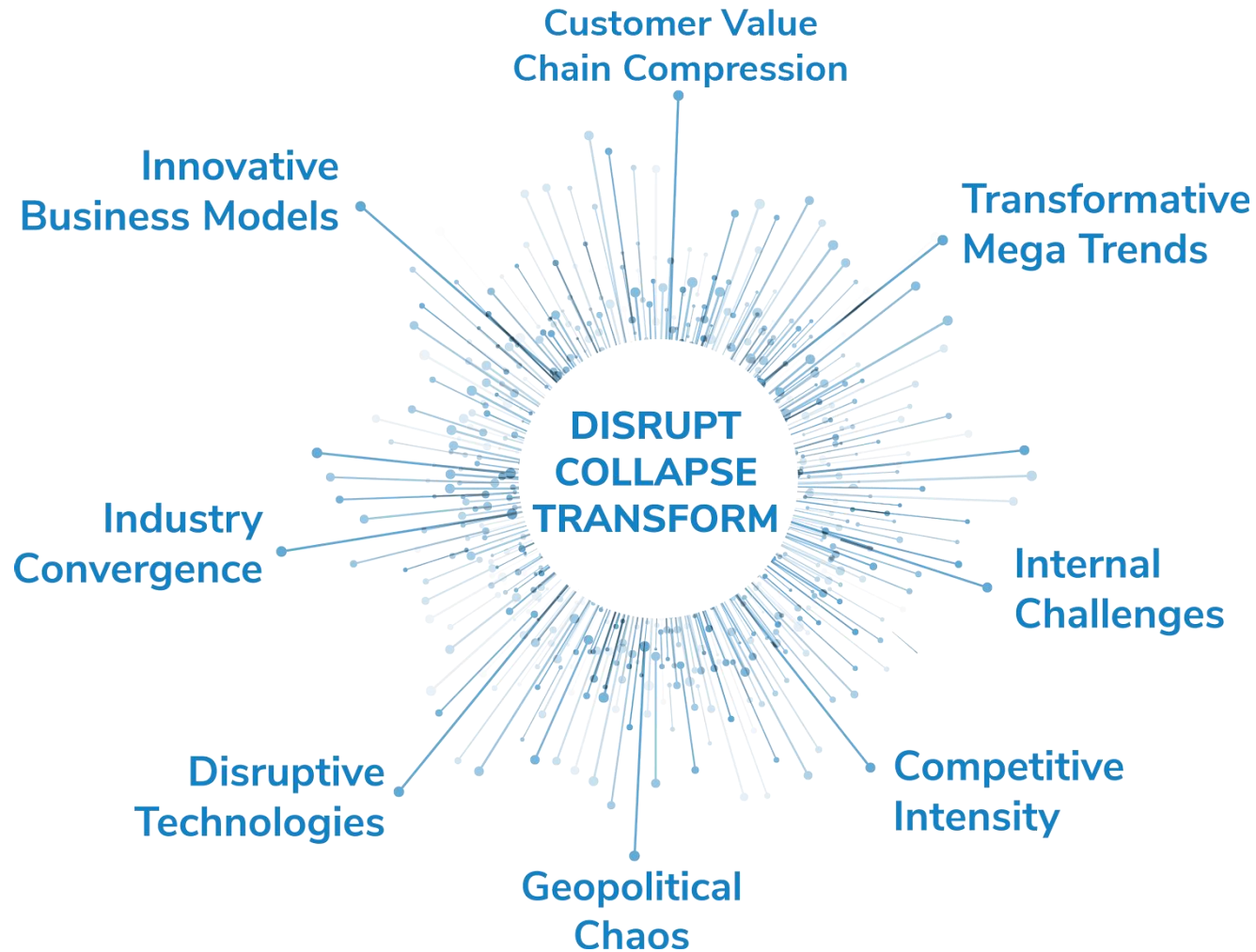
Strategic Imperatives

Why is it Increasingly Difficult to Grow?
The Strategic Imperative 8™: Factors Creating Pressure on Growth

Customer Value Chain Compression

Innovative Business Models

Transformative Mega Trends

DISRUPT COLLAPSE TRANSFORM

Industry Convergence

Internal Challenges

Disruptive Technologies

Competitive Intensity

Geopolitical Chaos

Source: Frost & Sullivan

The Strategic Imperative 8™

Innovative Business Models

A new revenue model that defines how a company creates and capitalizes economic value, typically impacting its value proposition, product offering, operational strategies, and brand positioning

Customer Value Chain Compression

Customer value chain compression as a result of advanced technologies, internet platforms, and other direct-to-consumer models that enables reduction in friction and the number of steps in customer journeys

Transformative Mega Trends

Global forces that define the future world with their far-reaching impact on business, societies, economies, cultures, and personal lives

Internal Challenges

The internal organizational behaviors that prevent a company from making required changes

Competitive Intensity

A new wave of competition from start-ups and digital business models that challenge the standing conventions of the past, compelling established industries to re-think their competitive stance

Geopolitical Chaos

Chaos and disorder arising from political discord, natural calamities, pandemics, and social unrest that impact global trade, collaboration, and business security
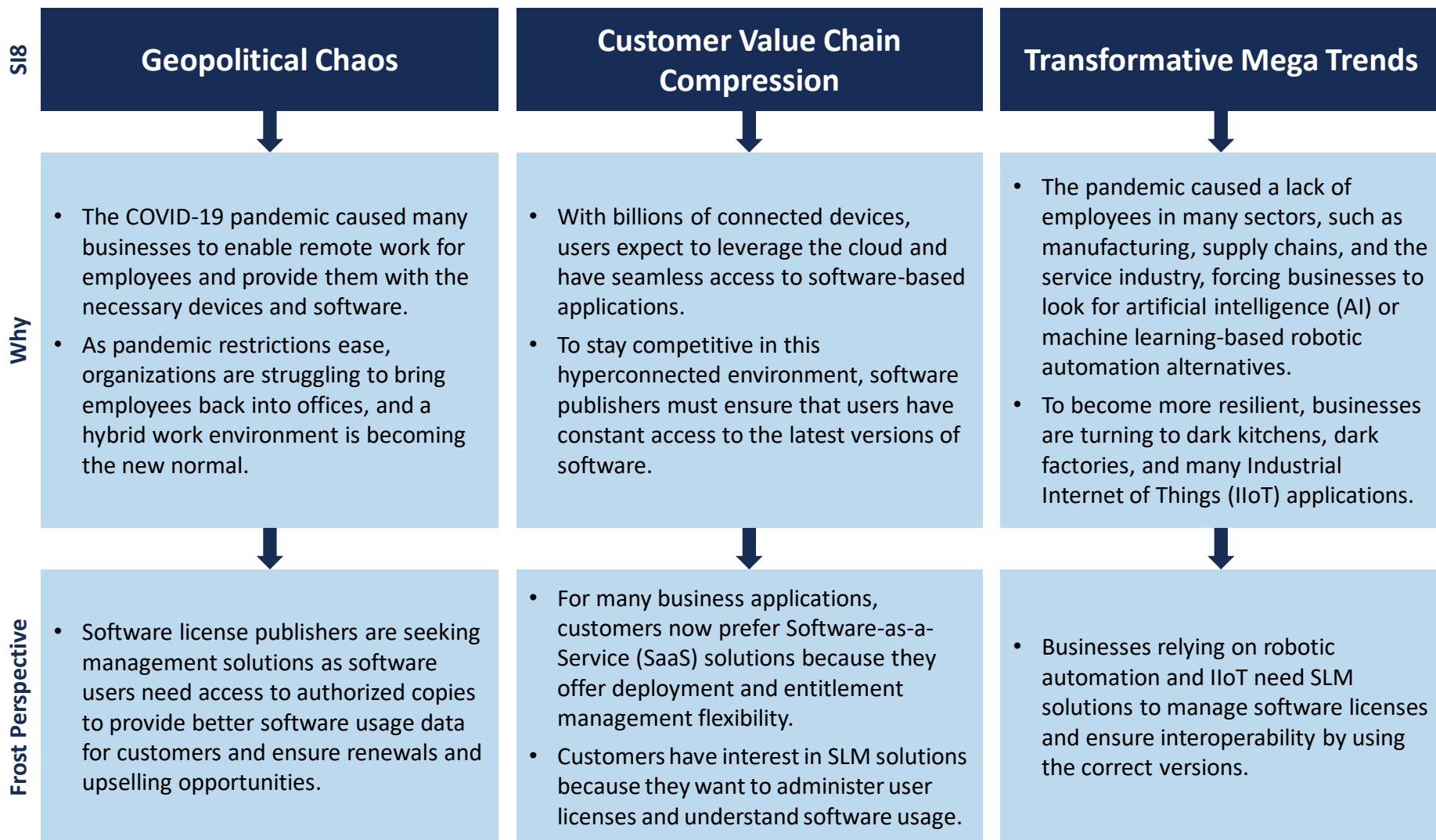
Disruptive Technologies

New, disruptive technologies that are displacing the old, and significantly altering the way consumers, industries, or businesses operate

Industry Convergence

Collaboration between previously disparate industries to deliver on whitespace cross-industry growth opportunities

Source: Frost & Sullivan

The Impact of the Top 3 Strategic Imperatives on the Software License Management (SLM) Market
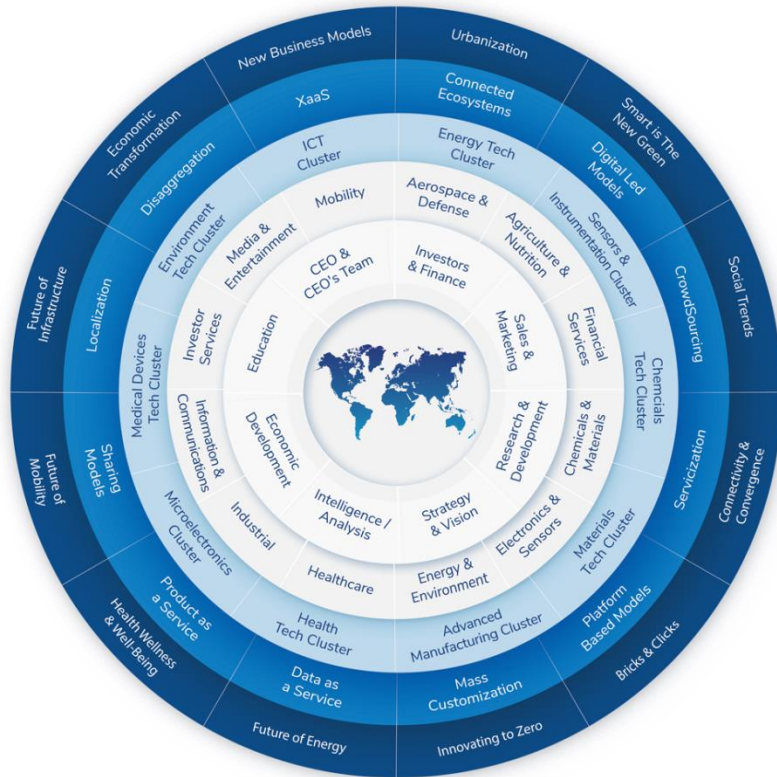
SI8

Geopolitical Chaos	Customer Value Chain Compression	Transformative Mega Trends

Why

Geopolitical Chaos
- The COVID-19 pandemic caused many businesses to enable remote work for employees and provide them with the necessary devices and software.
- As pandemic restrictions ease, organizations are struggling to bring employees back into offices, and a hybrid work environment is becoming the new normal.

Customer Value Chain Compression
- With billions of connected devices, users expect to leverage the cloud and have seamless access to software-based applications.
- To stay competitive in this hyperconnected environment, software publishers must ensure that users have constant access to the latest versions of software.

Transformative Mega Trends
- The pandemic caused a lack of employees in many sectors, such as manufacturing, supply chains, and the service industry, forcing businesses to look for artificial intelligence (AI) or machine learning-based robotic automation alternatives.
- To become more resilient, businesses are turning to dark kitchens, dark factories, and many Industrial Internet of Things (IIoT) applications.

Frost Perspective
- Software license publishers are seeking management solutions as software users need access to authorized copies to provide better software usage data for customers and ensure renewals and upselling opportunities.

- For many business applications, customers now prefer Software-as-a-Service (SaaS) solutions because they offer deployment and entitlement management flexibility.
- Customers have interest in SLM solutions because they want to administer user licenses and understand software usage.

- Businesses relying on robotic automation and IIoT need SLM solutions to manage software licenses and ensure interoperability by using the correct versions.

Source: Frost & Sullivan

Growth Opportunities Fuel the Growth Pipeline Engine™

The Innovation Generator™

The Growth Pipeline Engine™

Analytical Perspectives

OPPORTUNITY UNIVERSE
Capture full range of growth opportunities and prioritize them based on key criteria

OPPORTUNITY EVALUATION
Conduct deep, 360-degree analysis of prioritized opportunities

MONITORING & OPTIMIZATION
Adapt strategy to changing market dynamics and unearth new opportunities

GROWTH PIPELINE ENGINE™

GO-TO-MARKET STRATEGY
Translate strategic alternatives into a cogent strategy

PLANNING & IMPLEMENTATION
Execute strategic plan with milestones, targets, owners and deadlines

Source: Frost & Sullivan

Growth Opportunity Analysis

Entitlement Management Driving Interest in SLM Solutions

- Entitlement management is drawing market interest for SLM solutions because it is a single source of truth with user flexibility, partner management, and back-office management capabilities.

- User flexibility: Entitlement management allows software vendors to offer choices for customer entitlements and privileges (e.g., quantity, duration, and features). The license enforcement mandates and controls these options.

  o The software vendor chooses its flexibility. For example, a customer of the software vendor can use a product, but the vendor gives its customer the freedom to choose which version(s) to use, what sort of enforcement to use (cloud-controlled, on-premises software-based, or dongle-based) and even how to deploy the product (traditional on-premises, hybrid, or pure SaaS deployment).

  o Self-service portals allow end customers to manage and control whichever options their vendor offers and deploy, return, or redeploy on their own schedule.

- Partner management: Vendors can extend entitlement management capabilities to their own reseller/partner networks, empowering resellers while ensuring vendors have overall control.

- Back-office automation: Entitlement management creates a natural bridge between operational back-office processes, such as customer relationship management, billing, and product deployment. This management is important for businesses with recurring revenue business models.

- Single source of truth: Entitlement management systems provide vendors with a centralized component for all customer transactions (purchases, upgrades, downgrades, and renewals) to flow through. This centralization ensures a single source of truth for all aspects of the business to leverage, understand, and track product demand, customer success, and overall business health.

Source: Frost & Sullivan

Scope of Analysis

- This study covers the size, trends, competitive landscape, and growth strategies for the global SLM market.

- Software licensing enables software monetization strategies and requires license enforcement, entitlement management, and software protection.

- Companies traditionally sold SLM systems as anti-piracy solutions, but today they are monetization solutions for business models and the user experience.

- This market is highly saturated, with its top 3 vendors cornering more than 80% of the market share.

Scope	
Geographic Coverage	Global: North America and Latin America (NALA); Europe, The Middle East, and Africa (EMEA); & Asia-Pacific (APAC)
Study Period	2021–2028
Base Year	2021
Forecast Period	2022–2028
Monetary Unit	US dollars

- This study covers the biggest contributors to the market, including NALA, EMEA, and APAC.

- The top competitors in this study are Thales, Revenera, and Wibu.

- This study will analyze the SLM market, identify emerging trends and challenges, and provide an overview of solutions and opportunities available across the global market.

- The market size is based on vendor revenue in US dollars. This study calculates the reporting and estimates for calendar years rather than fiscal years.

Source: Frost & Sullivan

Scope of Analysis (continued)

- **Software Monetization:** Software monetization is the desired outcome of implementing software licensing technologies to enforce business rules and ensure billing and payment for software on a license, usage, or combined basis. As business and deployment models evolve, the SLM market is becoming the software monetization market of today. This research service analyzes the organized SLM market space. This research does not include revenues from publishers or alternative solutions, such as activation, that build SLM solutions in house.

- **Enforcement:** Enforcement is the process of verifying the rights to use a software or intelligent device in a certain way and enabling or disabling use of the licensed product as appropriate. Enforcement can be done fully electronically (software enforcement) or with the assistance of external hardware (hardware enforcement) such as a dongle.

- **Dongles:** A dongle is a hardware device that plugs into a computer or server (usually through a universal serial bus [USB], although some vendors support multiple interfaces) and binds with a copy of software on a particular machine to control unauthorized replication. Replicating a dongle is more difficult and expensive than copying the software it authenticates. In many cases, dongles lock the module on a central licensing server that manages check-in and check-out of floating licenses, and all-software solutions handle end-user nodes. Dongles today include memory and microprocessor circuitry. High-end models include enough memory to serve as external drives so users can directly execute applications for additional protection. This study will not consider simple USB drives as dongles.
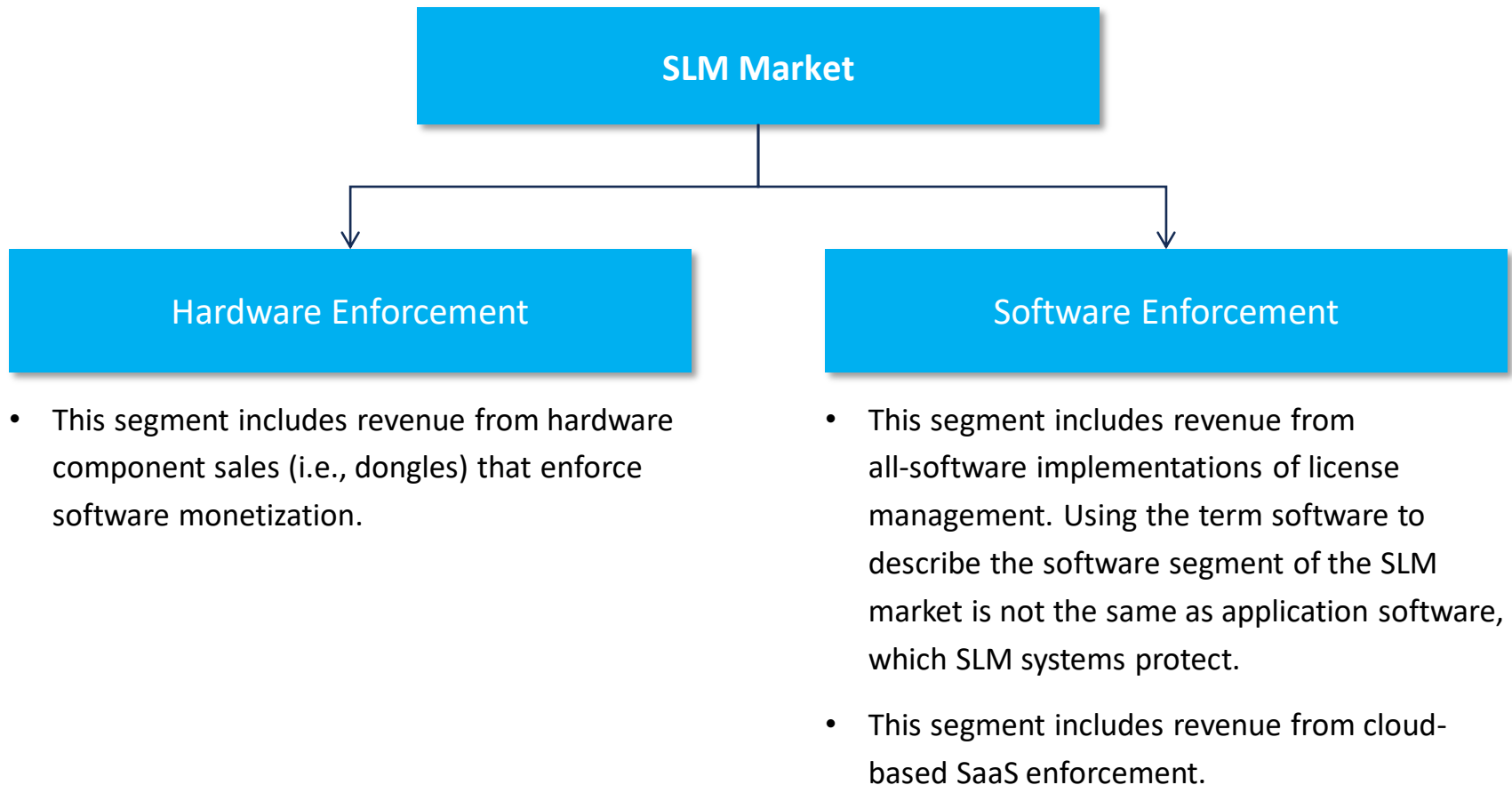
Scope of Analysis (continued)

- Copy protection and anti-piracy are still important use cases, especially in emerging markets, such as China, where the demand for security and copy protection remains high. In other regions, software licensing and back-office management, which target software vendors and device manufacturers shifting to software, are showing much stronger growth.

- Because of IIoT's popularity, SaaS and the embedded segment will be areas of growth for the market.

- Publishers can use usage data from SLM solutions for contract renewals and business insights to secure upsell opportunities.

- North America is the largest region, and EMEA is the second-largest. Publisher revenues, cloud-based deployments, and aggressive global expansion by publishers drive APAC's growth.

- The top 3 vendors continue to dominate the SLM market, and various others are competing for the remaining 18%.

- In 2021, the market achieved $415 million in revenue and will grow to $846.1 million by 2028 at a compound annual growth rate (CAGR) of 10.7%.

Source: Frost & Sullivan

Segmentation

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                    ┌─────────────────────┐
                    │     SLM Market      │
                    └─────────────────────┘
                              │
              ┌───────────────┴───────────────┐
              ▼                               ▼
  ┌───────────────────────┐       ┌───────────────────────┐
  │  Hardware Enforcement │       │  Software Enforcement │
  └───────────────────────┘       └───────────────────────┘
```

- This segment includes revenue from hardware component sales (i.e., dongles) that enforce software monetization.

- This segment includes revenue from all-software implementations of license management. Using the term software to describe the software segment of the SLM market is not the same as application software, which SLM systems protect.

- This segment includes revenue from cloud-based SaaS enforcement.

Market Participants

- 10Duke

- Agilis Software

- Concept Software SoftwareKey

- Crypkey

- Cryptlex

- Digital Ai

- Excel Software Quicklicense

- Inishtech

- jProductivity

- Labs64 Netlicensing

- Microcosm

- Mirrasoft

- Nalpeiron

- Oreans Technologies (Themida)

- Pace Anti-Piracy

- Reprise Software

- Revenera

- Secutech

- SoftActivate

- Soraco Technologies

- Star-Force

- Thales

- Wibu

- Wyday LimeLM

- Yummy Interactive SoftwareShield

Key Growth Metrics

SLM Market: Key Growth Metrics, Global, 2021–2028

Life Cycle Stage	Revenue	Revenue for Last Year of Study Period	Base Year Growth Rate
Growth	$415 M	$846.1 M	9.7%
	(2021)	(2028)	2021

Compound Annual Growth Rate	Number of Competitors	Degree of Technical Change	Concentration
10.7%	25+	8	81.9%
(2021–2028)	(active competitors in 2021)	(scale:1 [low] to 10 [high])	(Revenue share held by top 3 companies)

Note: All figures are rounded. The base year is 2021. Source: Frost & Sullivan

Growth Drivers

SLM Market: Growth Drivers, Global, 2022–2028

Driver	1–2 Years	3–4 Years	5–7 Years
The Increasing Popularity of SaaS Solutions Creates a Demand for SLM Solutions for entitlement management and license enforcement.	High	High	High
The Continued Proliferation of Embedded Software-powered Intelligent Devices across verticals spurs demand for SLM solutions.	High	High	Medium
The Data from SLM Solutions Helps Publishers Gain Deeper Insight into Software Usage, which, aids in contract renewals and upsell opportunities.	Medium	High	High
The Transition from Homegrown to Commercial SLM Systems grows revenue streams.	Medium	Medium	High
Anti-piracy and Anti-counterfeiting Initiatives will Drive Adoption of SLM solutions.	Medium	Medium	Medium

Source: Frost & Sullivan

Growth Drivers (continued)

- The COVID-19 pandemic changed how businesses operate in many ways, such as enabling remote/hybrid work environments and using more intelligent devices to create resilience within operations as they deal with crippling workforce shortages.

- These factors, along with the continued popularity of SaaS-based solutions and the proliferation of intelligent devices, have created awareness of entitlement management and license enforcement among software publishers and their customers so that businesses can provide access to necessary software tools for employees and processes.

- Publishers are leveraging insights from data that SLM solutions collect to help with contract renewal negotiations and uncover upsell opportunities.

- The market will experience healthy growth as publishers transition from homegrown and custom-built SLM solutions and deploy anti-piracy and counterfeiting initiatives.

Source: Frost & Sullivan

Growth Restraints

SLM Market: Growth Inhibitors, Global, 2022–2028

Restraint	1–2 Years	3–4 Years	5–7 Years
The Continued use of In-house Solutions negatively impacts market revenue growth.	High	High	Medium
Asia and Latin America are Still Way Behind North America and Europe in Adoption and are not aware of the value proposition these solutions offer.	High	High	Medium
Many SaaS Vendors Do Not Fully Understand the Value Proposition that SLM Offers, resulting in a slower uptake of SLM solutions.	High	Medium	Medium
Publishers Moving from On-premises to Cloud-based Products May Hesitate to deploy SLM solutions optimized for SaaS products out of fear that investing resources into a new system may not produce worthwhile results.	Medium	Medium	Medium
Upfront Integration Costs are a deterrent to adoption for medium and some larger businesses.	Medium	Medium	Low

Source: Frost & Sullivan

Growth Restraints (continued)

- Homegrown licensing solutions are a challenge in the market. It takes time for companies to recognize the value of SLM vendors over homegrown licensing approaches. Homegrown solutions are tempting, but they can be costly to implement and maintain. For example, adding a new licensing model may require a full development cycle. These issues can burden development teams, impact roadmaps, and draw out the time-to-market for new product releases.

- Some regions, such as Asia and Latin America, lag far behind in adopting SLM solutions. Even in North America and Europe, many SaaS publishers are behind on SLM adoption, as they lack awareness of how purpose-built commercial SLM solutions can yield significant benefits.

Growth Restraints (continued)

- Modern SLM solutions provide streamlined interfaces for clients and servers. These solutions are compatible with most popular development and testing platforms and are transparent for users. Despite this significant stride forward, the initial costs of planning, implementing, and deploying SLM solutions remain in the 5–6 figure range. Other restraints include a lack of confidence in the value proposition and the limited availability of internal champions for piracy prevention and monetization features.

- Lack of awareness of options/value potential and misplaced concerns about expenses, complexity, or long-term lock-in are all factors that business-to-business publishers and device vendors factor into decisions about building homegrown solutions or adopting alternatives to full-fledged SLM solutions. Many prospects believe that piracy is inevitable, so adopting an external SLM solution is pointless. Such prospects tend to look for procedural mitigations for license overuse, such as audits or tracking.

Forecast Assumptions

- **Currency:** Frost & Sullivan reports the market size in US dollars because most market vendors sell in North America.

- **Geopolitical Chaos:** The COVID-19 pandemic has had severe and lasting impacts across industries. Research reveals that SLM vendors are optimistic about interest in SaaS solutions to enable remote/hybrid working, and the increased deployment of embedded software-powered intelligent devices are generating interest in SLM solutions. Supply chain issues with chip availability might adversely affect the growth of the market's embedded segment and have a dampening effect on the forecast.

- **Competition:** Though many vendors still adopt homegrown solutions, and the top 3 SLM vendors still command more than 80% of the market, SLM vendors are experiencing more traction, and the market is becoming less concentrated.

- **Pricing Pressures:** Software publishers chose features that have led to customizable pricing in the market. These costs will vary depending on the size of the deployment. No average price exists, and at the low end, publishers can deploy SLM solutions for $3,000, while high-end deployment can cost 6 figures and up.

- **Distribution:** Direct sales account for 90%+ of SLM solution sales.

Revenue Forecast

SLM Market: Revenue Forecast, Global, 2021–2028
CAGR: 10.7%
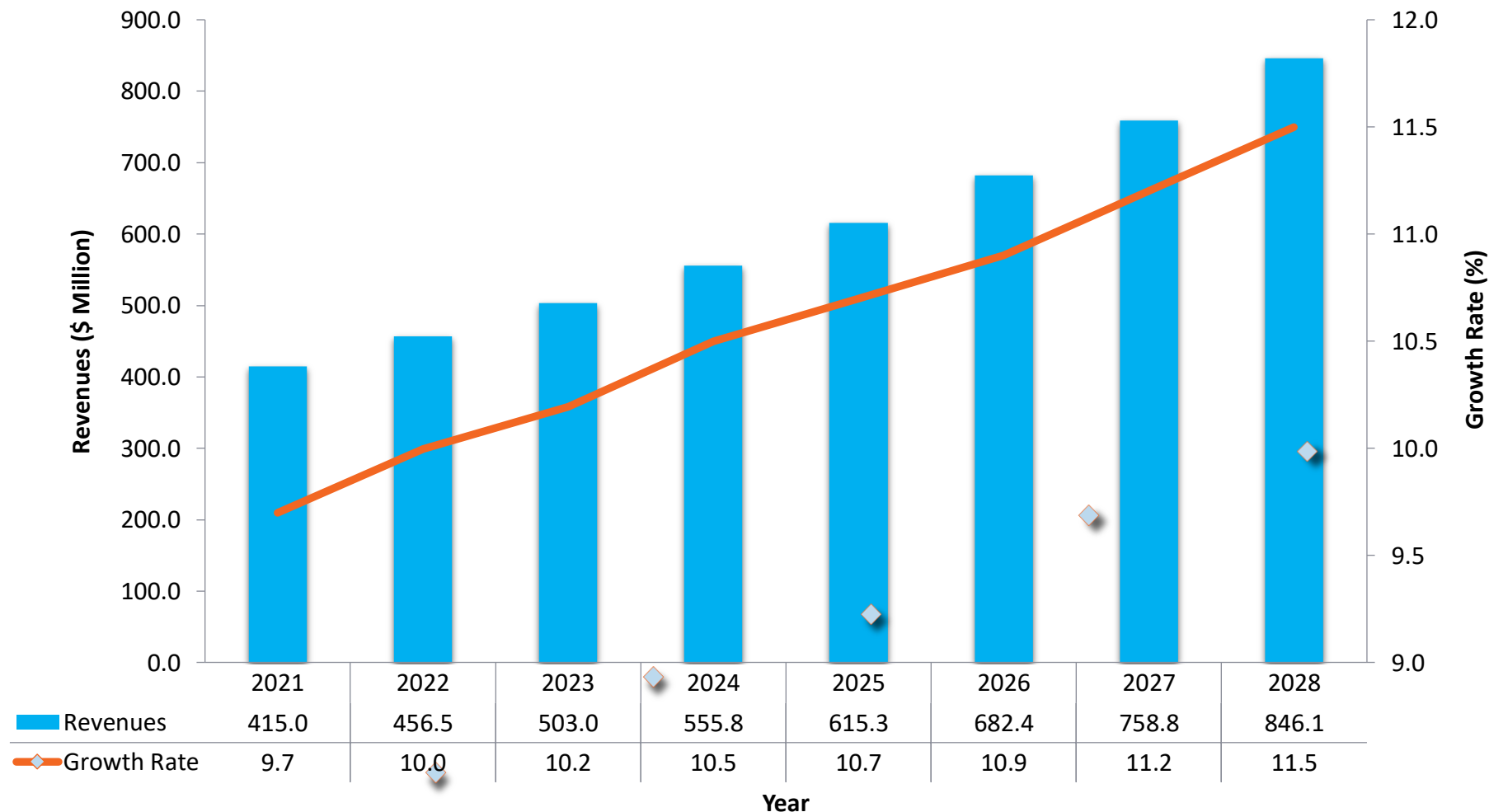
	2021	2022	2023	2024	2025	2026	2027	2028
Revenues	415.0	456.5	503.0	555.8	615.3	682.4	758.8	846.1
Growth Rate	9.7	10.0	10.2	10.5	10.7	10.9	11.2	11.5

Year

Note: All figures are rounded. The base year is 2021. Source: Frost & Sullivan

Revenue Forecast Analysis

- The global SLM market generated $415 million in revenue in 2021 and will grow at a CAGR of 10.7% to $846.1 million by 2028.

- The increased demand for SaaS products and embedded software-powered intelligent devices are creating interest in SLM solutions and will contribute to revenue growth.

- Publishers are learning that legacy investments in homegrown solutions are too expensive to maintain and are gradually moving toward commercial SLM solutions.

- Competition for alternatives, such as in-house solutions that engineering or information technology (IT) teams built, auditing and tracking in lieu of technology-based enforcement, and siloed solutions across many product divisions are dampening revenue growth. However, all main SLM vendors today invest aggressively in customer outreach programs and thought leadership initiatives, increasing confidence in the SLM solutions' value proposition.

- More independent software vendors (ISVs) and device manufacturers (DMs) are transitioning to formal SLM solutions, yielding slow and steady dividends. Such greenfield deployments double revenue, with the base year as a new purchase, and in ongoing years, additional node purchases and/or royalties and maintenance fee collection generating revenue.

Source: Frost & Sullivan

Revenue Forecast by Region

SLM Market: Revenue Forecast by Region, 2021–2028
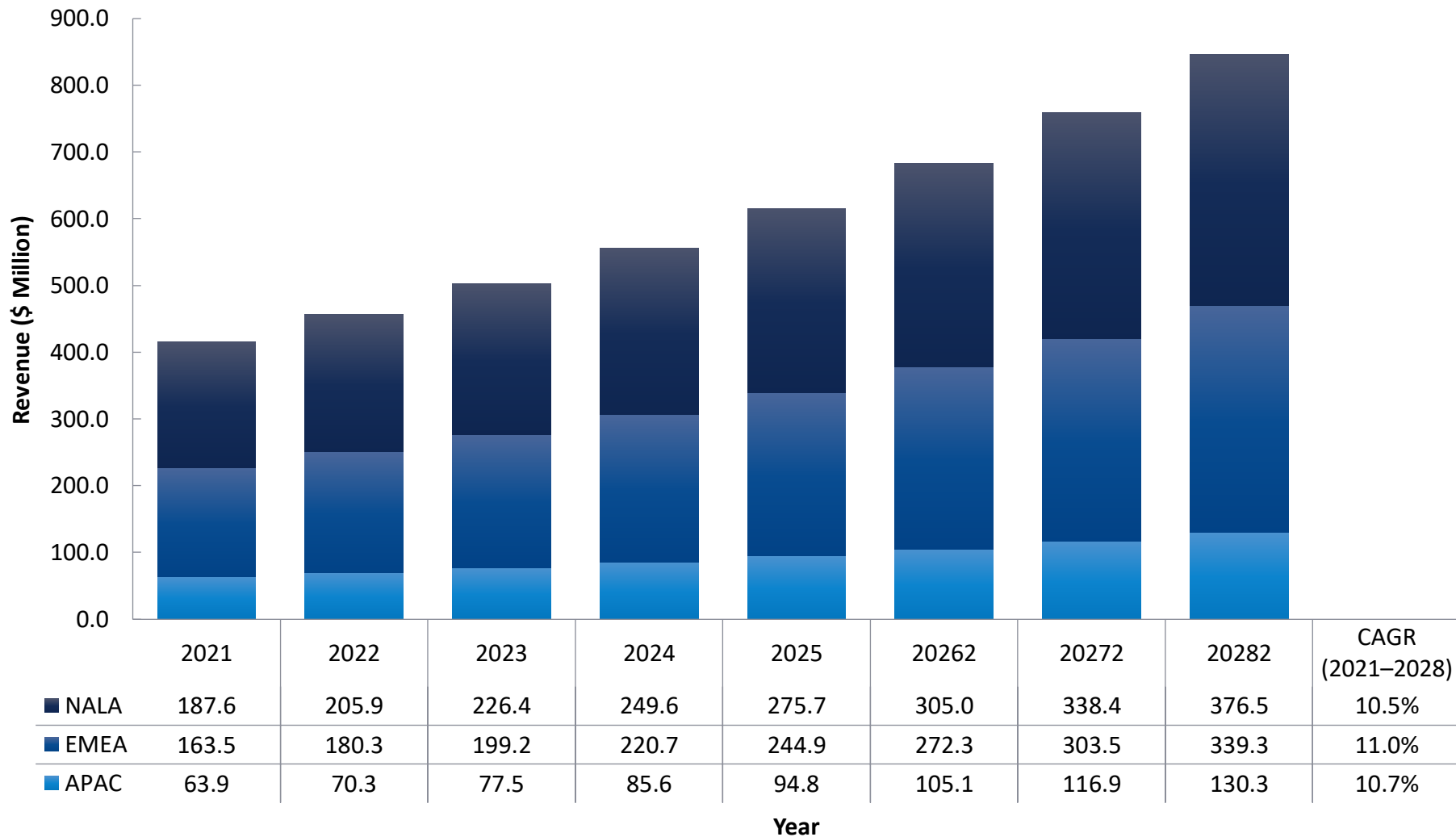
	2021	2022	2023	2024	2025	20262	20272	20282	CAGR (2021–2028)
■ NALA	187.6	205.9	226.4	249.6	275.7	305.0	338.4	376.5	10.5%
■ EMEA	163.5	180.3	199.2	220.7	244.9	272.3	303.5	339.3	11.0%
■ APAC	63.9	70.3	77.5	85.6	94.8	105.1	116.9	130.3	10.7%

Year

Note: All figures are rounded. The base year is 2021. Source: Frost & Sullivan

Revenue Forecast Analysis by Region

- NALA—particularly North America—is the largest region by revenue as ISV sales and embedded revenues grow. Many vendors are converting from in-house to commercial license management solutions in this region, which is home to some of the largest ISVs, cloud service providers, and embedded device vendors globally.

- North American enterprises follow advanced methods for tracking software assets and optimizing licensing revenues. Latin America remains an early-stage market, with uncertain potential to reach significant revenue levels during the forecast period.

- EMEA follows the Americas and has the highest CAGR at 11%. Western Europe in particular boasts industrially-advanced territories (particularly Germany, France, and the United Kingdom) and high uptake of hardware from vendors, such as Thales and Wibu.

- APAC comprises the smallest share of this market, with Australia, South Korea, and Japan taking the lead. Thales has a good presence in India as well. Indigenous publishers in emerging markets, particularly China and India, are adopting SLM with higher-end dongles to protect intellectual property (IP) and revenue in their home regions, which offer little legal redress against piracy and have high piracy/counterfeiting rates. Industrial automation and SLM use in automotive products will drive revenue growth in APAC.

Revenue Forecast by Segment

SLM Market: Revenue Forecast by Segment, Global, 2021–2028

Year	Hardware Enforcement ($ Millions)	Growth Rate	Software Enforcement ($ Millions)	Growth Rate
2021	130.7	-	284.3	-
2022	141.5	8.3%	315.0	10.8%
2023	153.4	8.4%	349.6	11.0%
2024	164.0	6.9%	391.9	12.1%
2025	174.1	6.2%	441.2	12.6%
2026	181.5	4.2%	500.9	13.5%
2027	188.9	4.1%	569.9	13.8%
2028	196.3	3.9%	649.8	14.0%
CAGR	6.0%		12.5%	

Note: All figures are rounded. The base year is 2021. Source: Frost & Sullivan

Revenue Forecast by Type of End Application

SLM Market: Revenue Forecast by Type of End Application, Global, 2021–2028

Year	On-premise Software and SaaS ($ Millions)	Growth Rate	Embedded Software ($ Millions)	Growth Rate
2021	269.8	-	145.3	-
2022	299.0	10.8%	157.5	8.4%
2023	332.0	11.0%	171.0	8.6%
2024	369.6	11.3%	186.2	8.9%
2025	412.3	11.5%	203.1	9.0%
2026	460.6	11.7%	221.8	9.2%
2027	516.0	12.0%	242.8	9.5%
2028	579.6	12.3%	266.5	9.8%
CAGR	11.5%		9.1%	

Note: All figures are rounded. The base year is 2021. Source: Frost & Sullivan

Revenue Forecast Analysis by Segment

- The popularity and growth of SaaS solutions and embedded software-based intelligent devices will fuel the market's advancement during the forecast period.

- The software enforcement segment will dominate the revenue earning opportunities for the market and increase to 76.8% of the total market. Hardware enforcement will shrink, and the segment's percentage of the total market share will increase at a diminishing rate to achieve a 6% CAGR.

- Accounting for two-thirds of the market, SLM for software and SaaS products will grow at a faster rate than SLM for embedded software, accounting for one-third of the market, but both segments will experience strong progress through the forecast period.

Source: Frost & Sullivan

Competitive Environment

SLM Market: Competitive Environment, Global, 2021

Number of Competitors	More than 25 companies in various regions
Competitive Factors	Cost, ease of deployment, manageability, technology
End-user Industry Verticals	Industrial, healthcare, telecommunications, automotive
Leading Competitors	Thales, Revenera, Wibu
Revenue Share of Top 3 Competitors	81.9%
Distribution Structure	Predominantly direct sales
Notable Acquisitions and Mergers	Thales bought Gemalto; Flexera/Revenera bought Revulytics

Market Share

SLM Market: Competitive Environment, Global, 2021

Others 18.1%
Wibu 7.2%
Revenera 31.3%
Thales 43.4%
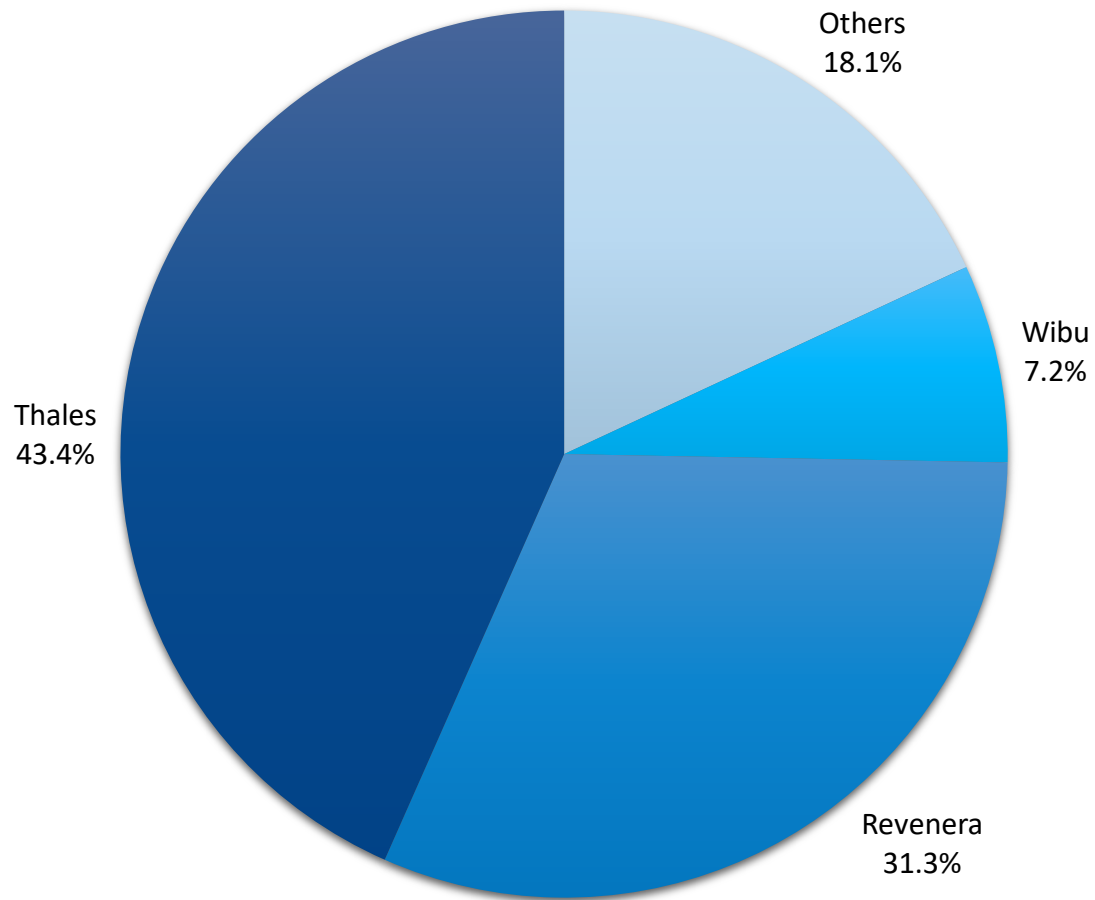
*A list of other companies can be found on slide 12.

Note: All figures are rounded. The base year is 202. Source: Frost & Sullivan

Market Share Analysis

Thales Software Monetization (SM), formerly Gemalto and acquired by Thales Group in 2019, continues its overall market leadership in software license management solutions. With a powerful global presence and primary market activities in North America, Europe, and Asia, Thales SM is focused on solving software business problems of today and tomorrow. With a long history in serving traditional software and device vendors and an increasing focus on monetizing SaaS offerings, Thales SM helps vendors optimize and grow their entire portfolio while modernizing and future-proofing their traditional business.

At the heart of Thales SM's Sentinel Platform is a highly versatile cloud-based entitlement management system, responsible for everything related to the packaging and provisioning of software products and services. A wide range of offerings branch off the entitlement management core. The sentinel platform addresses the needs of both software vendors and intelligent device manufacturers, from simple product activation to the most complex deployments, irrespective of size, topology, or business model requirements.

Data plays a significant role in the platform. A comprehensive data exporting and visualization capability allows software vendors to leverage entitlement and usage data to measure customer engagement, product market fit, and sales efficacy. Ecosystem integration is another fundamental capability of Sentinel. Dedicated cloud services enable out-of-the-box or low-code connectors to ensure that operational systems work cohesively with the entitlement management system. Coupled with modern and efficient REST-based web services, webhooks, and data stream interfaces, Sentinel assures the right information is at the right place, at the right time.

Securely controlling access to software functionality is central to Thales SM's heritage and continues to be a fundamental aspect of the platform. Sentinel's security capabilities address the full range of licensing needs from embedded devices to multi-user enterprise applications. Along with additional offerings around IP protection, software updates and electronic software delivery (ESD), Thales SM provides its customers an end-to-end offering.

Market Share Analysis (continued)

Revenera has a strong market position in the SLM market and leads the software enforcement segment. The company's strongest regional presence is in North America and Europe. The company's software monetization platform is integral to optimizing software suppliers' quote-to-cash processes, providing systems for entitlement management and fulfillment, software delivery and updates, revenue recognition and usage, and compliance analytics. Revenera focuses on developing its cloud platform while providing easier, more automated access to data for analytics and process automation. In its support for fulfillment and usage management, it enhances licensing support through software development kits (FlexNet Publisher and FlexNet embedded) and is bringing its RESTful approach to fulfillment, which customers use to monetize their SaaS applications and small-footprint IoT devices. Revenera enables its customers to increase their revenue using its software offerings, accelerate and automate revenue recognition, and avoid revenue leakage. In 2021, Revenera added software container delivery support, helping customers accelerate their paths to cloud-native products while providing a single back-office system to manage entitlements and licenses.

Wibu System's strength is its dongle-based license management, and the company offers a broad and versatile range of hardened dongle products based on its CodeMeter technology. The company emphasizes local customer support in Europe and North America and order fulfillment speed and accuracy. With its headquarters in Germany, its primary market is Europe; the company is pursuing the North American market and reaching out to APAC. The company is developing software-based solutions for broader applicability while raising the security bar on its hardware line.

Several smaller vendors comprise the remaining market. These vendors build on unique competencies in factors spanning technology approach, geographic region, price, simplicity, and/or application area. These niche vendors have been unable to make any significant inroads in the collective market share of the top 3 vendors. Frost & Sullivan does not foresee this changing during the forecast period.

Source: Frost & Sullivan

Growth Opportunity Universe

Growth Opportunity 1: New Market Expansion Opportunities for SLM in Emerging Markets

Frost & Sullivan has identified 10 Growth Processes that serve as levers for determining and evaluating new Growth Opportunities.

Growth Processes

- Customer & Branding
- Distribution Channel
- Geographic Expansion
- Vertical Market Expansion
- Competitive Strategy
- Strategic Partnering
- Product Development
- Merger & Acquisition
- Product Launch
- Technology & IP

Opp. Size in 5 Years	$100 M–$500 M	Relevant Industries for this Growth Opportunity			Applicable Regions	
		Industrial Automation	Commercial Mobility	Security	North America	Western Europe
Timeline for Action	5 Years	Environmental	Chemicals & Materials	Communications Tech		
		Oil & Gas	Ag., Food & Nutrition	Information Tech	Latin America	Africa
		Building Technologies	Test & Measurement	Pharma & Biotech		
Base Year	2022	Consumer Electronics	Aerospace	Advanced Medtech	Central/Eastern Europe	Asia-Pacific
		Consumer Mobility	Defense	Fintech		

Source: Frost & Sullivan

Growth Opportunity 1: New Market Expansion Opportunities for SLM in Emerging Markets (continued)

Context and Definition

- Emerging markets, such as Brazil, Russia, India, China, and South Africa (BRICS); Sub-Saharan Africa; Eastern Europe; Latin America; and parts of Asia have seen rapid growth, and countries such as India are establishing themselves as IT and manufacturing hubs.

- Demand for SaaS solutions and intelligent devices is high in these regions, as businesses modernize at a breakneck pace to keep up with competition.

- Software publishers in the region have doubled their efforts to protect IP and revenue in their home regions, which offer little legal redress against piracy and have high piracy/counterfeiting rates.

Call to Action

- Emerging markets, especially in APAC, are home to some of the fastest-growing software publishers in the world. With strong GDP growth, these markets are the fastest customers of software products and intelligent devices.

- Publishers in these regions are adopting SLM with higher-end dongles to cope with the pressures of IP protection, license enforcement, and entitlement management.

- SLM companies need to act aggressively to establish a rapid presence in these markets, as countries such as China and India are growing at impressive rates, and other countries in the region are embracing IIoT and deploying intelligent devices at a rapid pace to modernize their industries. This rapid advancement is creating growth potential for vendors looking at greenfield opportunities.

Source: Frost & Sullivan

Growth Opportunity 2: Leveraging Insights from Usage Data to Create Upsell Opportunities

Frost & Sullivan has identified 10 Growth Processes that serve as levers for determining and evaluating new Growth Opportunities.

Customer & Branding	**Distribution Channel**	**Geographic Expansion**	**Vertical Market Expansion**	**Competitive Strategy**
Strategic Partnering	**Product Development**	**Merger & Acquisition**	**Product Launch**	**Technology & IP**

Growth Processes

Opp. Size in 5 Years	$200 M–$500 M	Relevant Industries for this Growth Opportunity			Applicable Regions	
		Industrial Automation	Commercial Mobility	Security	North America	Western Europe
Timeline for Action	**2 Years**	Environmental	Chemicals & Materials	Communications Tech		
		Oil & Gas	Ag., Food & Nutrition	Information Tech	Latin America	Africa
		Building Technologies	Test & Measurement	Pharma & Biotech		
Base Year	**2022**	Consumer Electronics	Aerospace	Advanced Medtech	Central/Eastern Europe	Asia-Pacific
		Consumer Mobility	Defense	Fintech		

Source: Frost & Sullivan

Context and Definition

- Although the SLM market is far from new, device vendors and publishers lack education and awareness of commercial SLM systems' utility and value proposition. Although monetization solutions have matured considerably in transparency, ease of use, and robustness, widely held skepticism persists.

- Another aspect of this phenomenon is the lack of clarity regarding responsibilities for the monetization strategy within an organization. While development responsibility typically falls within the engineering organization, license issuance infrastructure generally resides with operations or IT, and the company measures its financial impact by the offices of the chief marketing officer or chief financial officer. Vendors typically report a lack of unified oversight across these functions. As a result, insufficient advocacy exists within an organization for a company-wide adoption of a commercial SLM solution.

Call to Action

- By leveraging data from SLM solutions, vendors can create a more compelling business case to move from small pilots to accelerated full deployment.

- Executives are more willing to commit to technology investments when they produce a tangible profit.

- SLM vendors need to leverage usage data and craft case studies to evangelize the value proposition they provide, accelerate purchasing decisions, and create more upsell opportunities for themselves.

Source: Frost & Sullivan

List of Exhibits

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