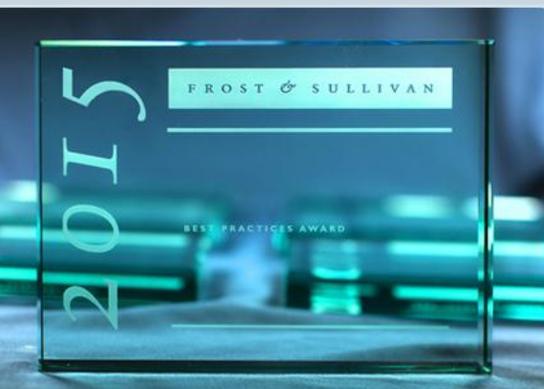




LIVING PLANIT™

2015 Global Smart Infrastructure Platform Visionary Innovation Leadership Award



FROST & SULLIVAN



50 Years of Growth, Innovation & Leadership

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Background and Company Performance

Industry Challenges

City infrastructure has come a remarkable way from steel and brick structures to resilient and intelligent infrastructural systems that are fully automated and exhibit high efficiency. The proliferation of diverse communication technologies in infrastructural systems has helped amplify their intelligence, reliability as well as efficiency. However, with a spurt of evolving technologies, Frost & Sullivan notes that the complexity of infrastructural systems has also increased exponentially. For instance, in the case of a building, there are traditional building management solutions that are available in the market which are able to make every aspect of the building, such as lighting, temperature, energy and security, highly intelligent. However, these intelligent aspects function in silos and in an independent manner, making the present day smart buildings highly intricate and challenging to manage. Additionally, end users are also losing out on the opportunities presented by the convergence of various infrastructural silos. For example, in a completely integrated building, in the event of a security breach, the lights must get switched on in the night, in addition to the indication by respective alarms. In such a situation, the key concern that deters such seamless functioning is the lack of a platform that incorporates various aspects in the infrastructure and manages the communication between them all with ease.

On a city level, an integrated infrastructure approach offers several opportunities for users. Urbanization levels are increasing at a significant rate with every passing day, and global urbanization is expected to increase from the current levels of 54% (in 2014) to more than 60% by 2030. Increasing concentration of population around key urban areas is forcing governments to rethink their expansion strategies by redistributing populations by developing satellite towns or even 'Smart Cities'. Smart Cities are substantially more efficient than traditional cities in terms of managing the resource nexus, as they would house next-generation infrastructure that will utilize the city resources optimally. Governments and city corporations are increasingly employing internet of things (IoT) architecture in their infrastructure to build intelligent, resilient and reliable systems in Smart Cities. However, if these intelligent systems, like mobility systems or smart grids, communicated with each other seamlessly, then valuable insights could be generated, which could be used to augment the efficiency of individual infrastructural systems as well as an entire smart city itself.

Infrastructure technology solution providers have positioned themselves strategically across different segments such as power, mobility, communication, water and waste management with complex and sometimes bulky modules serving each of these domains. However, there exists no solution even with such integrators which unifies all the individual solutions seamlessly. Such gap in the market for an agnostic system that is scalable and can integrate various aspects in any infrastructural system needs to be adeptly addressed, and Frost & Sullivan believes that the company that can offer exclusive innovation in this regard and is properly able to offer such convergent platforms is best positioned to lead the market.

Focus on the Future and Best Practices Implementation

Living PlanIT is a technology company which, through its highly sophisticated software platform, is integrating sensors, devices and people in an infrastructural ecosystem, ensuring seamless functioning. Living PlanIT was founded as a result of the vision of evolving resilience and intelligence in cities by harmonizing the widest variety of real-time sensing and control possible on a single platform. Frost & Sullivan ongoing analysis suggests that the company has successfully executed the growth strategies in a balanced manner by focusing on the technology standpoint as well as in forming strategic alliances with key government, industry, academic and research leaders and institutions.

Vision Alignment

Living PlanIT, since its inception, has been strongly developing its mission of providing a comprehensive, scalable, flexible and intelligent infrastructural solution. This has motivated the company to augment relentlessly the sensing and control capabilities of the platform and refine the data fusion and insight generation methodologies. By creating an open standards platform, Living PlanIT has offered its clients the freedom of enriching further the infrastructural ecosystem that they have envisioned. Living PlanIT also partners with its infrastructure and real-estate clientele, right from the planning stage, through designing and execution, to help ensure a seamless implementation of an advanced infrastructural system.

Focus on Unmet Needs

The PlanIT Urban Operating System™ (or PlanIT UOS™), is the groundbreaking software platform that has been developed to converge and manage the internet of things (IoT) in urban infrastructure. PlanIT UOS™ is an all-encompassing middleware that provides the real-time sensing control, spatial analytics, data integration, security, support, and contextual frameworks, necessary for every application.

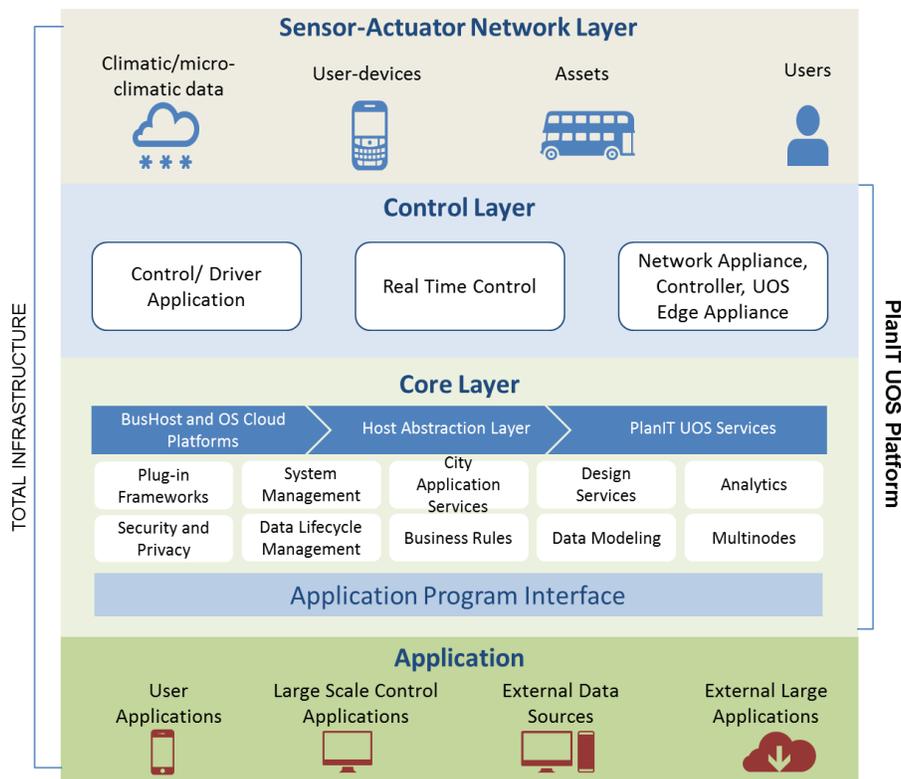
PlanIT UOS™ stands out from other infrastructural management solutions because of its flexibility, resilience, scalability and intelligence. Its flexible architecture allows an extensive and diverse variety of sensors and devices conforming to different standards or protocols to be integrated with the platform. Living PlanIT's highly scalable architecture makes it suitable to be employed for something as simple as an apartment building to something as large and complicated as a city. The essential facet of the PlanIT UOS™ is the many interesting ways in which it enables the fusion and harmonization of data received from various elements (sensors, devices and people) associated with the infrastructure and the useful insights that are generated to drive applications and create valuable outcomes.

PlanIT UOS™ provides a rich set of open standards application programming interfaces (APIs), a configurable data model and entry points for custom logic. This gives the

flexibility, accessibility and freedom to infrastructure owners to modify the platform for specific applications and hardware requirements. This also enables third party developers to utilize the insights generated by the core layer of PlanIT UOS™ to develop applications for the users to interact with infrastructure with ease.

Technology Sophistication

PlanIT UOS™ boasts a layered architecture that can accommodate sensors, devices, and users, irrespective of their type and number. The complete infrastructural ecosystem employing PlanIT UOS™ has four layers: sensor/actuator network layer, controls layer, supervisory layer, and applications layer. The control and supervisory layers form the heart of the PlanIT UOS™ platform. The control layer is responsible for accommodating all the network devices deployed across the infrastructure and runs the control codes or the driver applications to interface with this heterogeneous assembly of sensors, devices and users. The control layer is also responsible for providing immediate responses to the network elements for control requirements, for example, dimming of a light bulb when people walk out of the room. The supervisory layer in PlanIT UOS™ collects user or device data from the control layer, manages them, fuses them in interesting and sophisticated ways, and redistributes this intelligence across the infrastructure, ensuring it reaches its target device or sensor. The supervisory layer also provides an API interface for the applications developed by infrastructure providers or third party developers to develop and apply PlaceApps, which are both location and context aware.



Integrated Infrastructure Platform powered by PlanIT UOS™ (Source: Frost & Sullivan Analysis)

Frost & Sullivan notes that a key technological aspect of the PlanIT UOS™ platform, that makes it such a sophisticated solution, is the fact that it is both scalable and flexible, while at the same time embedded with advanced safety protocols. In times of increasing privacy threats and network attacks or hacks, Living PlanIT has managed to enforce sophisticated security codes while giving the customer the freedom to control the accessibility of the user data as it flows through the system. PlanIT UOS™ platform has employed a security mechanism, whereby an Open Data Rights Language (ODRL) is utilized to define security as context-based policy statements. This enables a compact security environment involving fewer program codes when compared to elaborate and bulky coding of settings. Further, the APIs can be used to irretrievably anonymize the user data while conserving its collective usefulness for the solution providers.

Blue Ocean Strategy

Living PlanIT, through its innovative business approach and a sophisticated platform, has not only managed to rule the existing market, but has also opened new avenues which beforehand did not exist. Living PlanIT is constantly developing groundbreaking hardware and software solutions that incessantly improve the PlanIT UOS™ platform.

Moreover, Living PlanIT is developing bio-sensing capabilities which engage genetically modified microbes in performing certain tasks and have them communicate back to the platform. Such bio sensors and control devices could be instructed to execute actions on water, air and multiple other ecosystems, thus helping Living PlanIT's leapfrog its reach and control over the infrastructure. Furthermore, Living PlanIT continues to enhance the PlanIT UOS™ platform through its edgeless computing approach. This will move the context and processing ever closer to the devices or users where data is first available.

Such strategic moves from Living PlanIT have helped the company to not only smoothen operations and steadily grow in the present, but also develop a roadmap to ensure sustained growth in the future.

Process Design

Living PlanIT is principally a technology solutions provider and allows infrastructure providers to customize the PlanIT UOS™ platform to suit their requirements. PlanIT UOS™ showcases a flexible architecture that includes APIs which is based on open and cross-platform standards giving the infrastructure providers various levels of access (core, application and functional APIs) to customize and transform the platform from its raw state into a solution that completely aligns with the relevant user requirements.

Living PlanIT has designed PlanIT UOS™ in such a manner that it can be deployed to suit the needs and operational context of the project in which it is involved. It can be installed to run on the cloud, on local servers, or as a hybrid platform. PlanIT UOS™ platform can be run on Living PlanIT preconfigured servers, or can be run on popular cloud

environments (such as Microsoft Azure and Amazon Web Services).

Growth Performance

Frost & Sullivan applauds the fact that Living PlanIT has constantly innovated and improved its technology capabilities, which have provided the company with much recognition across the globe. The PlanIT UOS™ platform, which can be deployed at any scale, is bringing infrastructure providers significant return on investments (ROIs) and other operational benefits throughout the solution lifecycle. PlanIT UOS™ can attract 30% Capital Expenditure (CAPEX) savings and 20% operational expenditure (OPEX) savings over traditional building management solutions. For business establishments like shopping malls, especially at these times where online retail capabilities are crossing over to the brick and mortar store, services such as real-time decision making and product matching can help realize further improvement in revenues between 10% and 30%.

In public places, such as airports where the infrastructure provider has to deal with a large number of people, PlanIT UOS™ can be utilized to manage everything from airport operations to security, and other retail joints leading to a 20% improvement in passenger flow and 30% retail revenue increase at peak times. At a city level, PlanIT UOS™ promises to enable different infrastructural systems that previously used to work in silos, communicate and interact with each other in new and interesting ways.

All of these exemplary attributes have helped Living PlanIT win contracts from big companies and establishments who lead in their respective markets. Living PlanIT and their strategic partner Hitachi, a leading global technology company, have recently initiated a new large scale project to provide a smart city platform in Copenhagen, which will enable the city to track resources consumption, reduce emissions, and augment existing business processes and services in the city. Copenhagen Smart City platform, powered by PlanIT UOS™, is expected to realize a quick return on investment (ROI) and a 10% improvement in terms of energy efficiency.

Conclusion

Frost & Sullivan points out that Living PlanIT has emerged as a global force with its innovative and unified smart infrastructure management platform, and the company is making quick inroads with flagship projects across the world. It has succeeded in developing a universal platform which can also accommodate and project sensibilities of infrastructure providers serving any regional market. The company has grown as an undisputed market leader who is able to steer consumer behavior effectively towards a smarter future.

With its strong overall performance Living PlanIT has earned the 2015 Frost & Sullivan Global Visionary Innovation Leadership Award.

Significance of Visionary Innovation Leadership

A visionary innovation leadership position enables a market participant to deliver highly competitive products and solutions that transform the way individuals and businesses perform their daily activities. Such products and solutions set new, long-lasting trends in how technologies are deployed and consumed by businesses and end users. Most importantly, they deliver unique and differentiated benefits that can greatly improve business performance as well as individuals' work and personal lives.



Understanding Visionary Innovation Leadership

Visionary Innovation is the ability to innovate today in the light of perceived changes and opportunities that will arise from Mega Trends in the future. It is the ability to scout and detect unmet (and as yet undefined) needs and proactively address them with disruptive solutions that cater to newer and unique customers, lifestyles, technologies, and markets. At the heart of visionary innovation is a deep understanding of the implications and global ramifications of Mega Trends, leading to correct identification and ultimate capture of niche and white-space market opportunities in the future.

Key Benchmarking Criteria

For the Global Visionary Innovation Leadership Award, Frost & Sullivan analysts independently evaluated two key factors — Focus on the Future and Best Practices Implementation — according to the criteria identified below.

Focus on the Future

- Criterion 1: Focus on Unmet Needs
- Criterion 2: Visionary Scenarios through Mega Trends
- Criterion 3: Growth Pipeline
- Criterion 4: Blue Ocean Strategy
- Criterion 5: Growth Performance

Best Practices Implementation

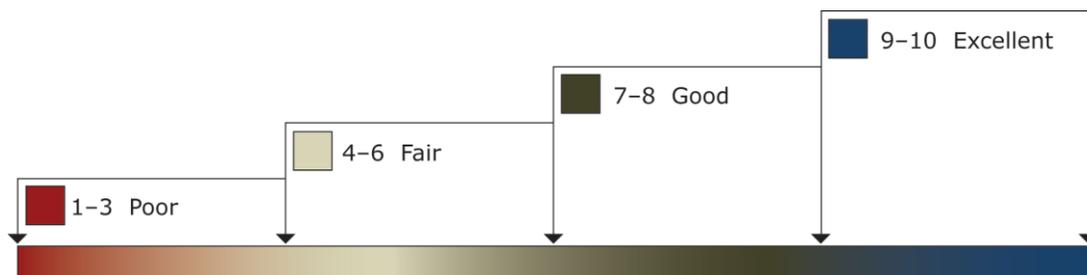
- Criterion 1: Vision Alignment
- Criterion 2: Process Design
- Criterion 3: Operational Efficiency
- Criterion 4: Technological Sophistication
- Criterion 5: Company Culture

Best Practice Award Analysis for Living PlanIT

Decision Support Scorecard

To support its evaluation of best practices across multiple business performance categories, Frost & Sullivan employs a customized Decision Support Scorecard. This tool allows our research and consulting teams to objectively analyze performance, according to the key benchmarking criteria listed in the previous section, and to assign ratings on that basis. The tool follows a 10-point scale that allows for nuances in performance evaluation; ratings guidelines are illustrated below.

RATINGS GUIDELINES



The Decision Support Scorecard is organized by Focus on the Future and Best Practices Implementation (i.e., the overarching categories for all 10 benchmarking criteria; the definitions for each criteria are provided beneath the scorecard). The research team confirms the veracity of this weighted scorecard through sensitivity analysis, which confirms that small changes to the ratings for a specific criterion do not lead to a significant change in the overall relative rankings of the companies.

The results of this analysis are shown below. To remain unbiased and to protect the interests of all organizations reviewed, we have chosen to refer to the other key players in as Company2 and Company3.

DECISION SUPPORT SCORECARD FOR VISIONARY INNOVATION LEADERSHIP AWARD

<i>Measurement of 1-10 (1 = poor; 10 = excellent)</i>			
Visionary Innovation Leadership	Focus on the Future	Best Practices Implementation	Average Rating
Living PlanIT	9	9	9.0
Competitor2	7	7	7.0
Competitor3	7	6	6.5

Focus on the Future

Criterion 1: Focus on Unmet Needs

Requirement: Implementing a robust process to continuously unearth customers’ unmet or under-served needs, and creating the products or solutions to address them effectively

Criterion 2: Visionary Scenarios through Mega Trends

Requirement: Incorporating long-range, macro-level scenarios into the innovation strategy, thereby enabling “first to market” growth opportunities solutions

Criterion 4: Growth Pipeline

Requirement: Best-in-class process to continuously identify and prioritize future growth opportunities leveraging both internal and external sources

Criterion 3: Blue Ocean Strategy

Requirement: Strategic focus in creating a leadership position in a potentially “uncontested” market space, manifested by stiff barriers to entry for competitors

Criterion 5: Growth Performance

Requirement: Growth success linked tangibly to new growth opportunities identified through visionary innovation

Best Practices Implementation

Criterion 1: Vision Alignment

Requirement: The executive team is aligned on the organization’s mission, vision, strategy and execution

Criterion 2: Process Design

Requirement: Processes support the efficient and consistent implementation of tactics designed to implement the strategy

Criterion 3: Operational Efficiency

Requirement: Staff performs assigned tactics seamlessly, quickly, and to a high quality standard

Criterion 4: Technological Sophistication

Requirements: Systems enable companywide transparency, communication, and efficiency

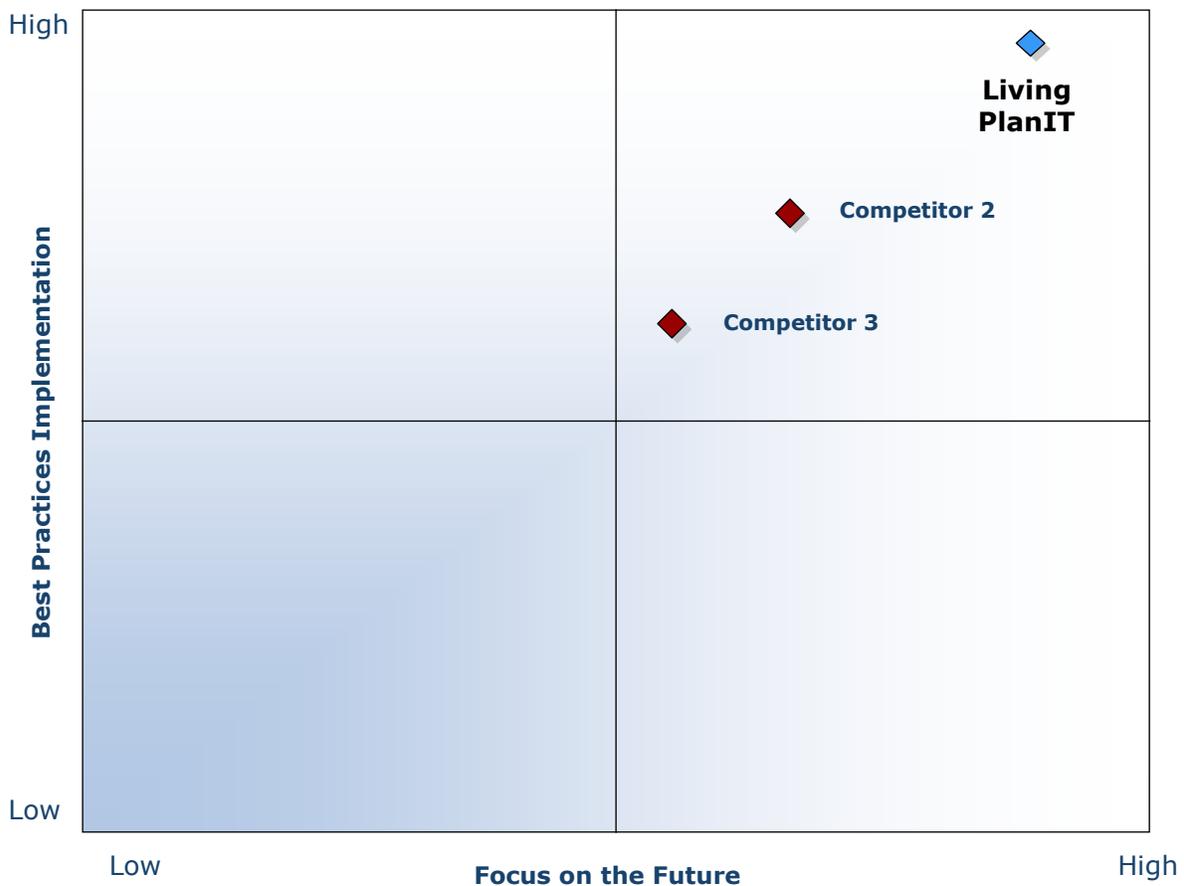
Criterion 5: Company Culture

Requirement: The executive team sets the standard for commitment to customers, quality, and staff, which translates directly into front-line performance excellence

Decision Support Matrix

Once all companies have been evaluated according to the Decision Support Scorecard, analysts can then position the candidates on the matrix shown below, enabling them to visualize which companies are truly breakthrough and which ones are not yet operating at best-in-class levels.

DECISION SUPPORTMATRIX FOR VISIONARY INNOVATION LEADERSHIP AWARD



About Frost & Sullivan

Frost & Sullivan, the Growth Partnership Company, enables clients to accelerate growth and achieve best in class positions in growth, innovation and leadership. The company's Growth Partnership Service provides the CEO and the CEO's Growth Team with disciplined research and best practice models to drive the generation, evaluation and implementation of powerful growth strategies. Frost & Sullivan leverages almost 50 years of experience in partnering with Global 1000 companies, emerging businesses and the investment community from 31 offices on six continents. To join our Growth Partnership, please visit <http://www.frost.com>.