basepair

The Basepair Bioinformatics and Business Analytics Platform for KIT, ASSAY AND TEST MANUFACTURERS

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Executive Summary

Basepair's bioinformatics platform-as-a-service (PaaS) provides a comprehensive, customizable solution that empowers kit, assay, and test manufacturers to streamline data analysis, enhance customer satisfaction, and facilitate global deployment of a bundled kit and analysis solution. Key features include a point & click interface, out-of-the-box interactive visualizations, coupon generation for bundling bioinformatics analysis at the point of sale, semi-productized white labeling, real-time tracking of kit usage and performance, global deployment support, and customer ease of use. The platform not only caters to the needs of bioinformaticians and research scientists, but also to product managers, CMOs, VPs of marketing, and sales teams, offering valuable business intelligence and insights. By integrating Basepair's platform, manufacturers can stay ahead of the competition, reduce time to re-order, and ensure their customers receive the best possible end-to-end experience, as demonstrated by case studies featuring a leading library prep kit manufacturer and an IVF medical device company.

Empowering Kit, Assay, and Test Manufacturers with Basepair's Bioinformatics Platform

In today's rapidly advancing genomics industry, kit, assay, and test manufacturers face the challenge of providing their customers with efficient, accurate, and user-friendly bioinformatics analysis solutions that accompany their products. Basepair's powerful platform is transforming the way these manufacturers approach data analysis, interpretation, and global deployment. This white paper explores the key features and benefits of Basepair's platform and demonstrates how it elevate the market for these manufacturers.

Benefits for Kit Manufacturers and their Customers

For Kit Manufacturers	For Customers
• Reduced data analysis bottlenecks leads to faster time to re order	• Optimized pipeline delivered with kit
• Optimized 'best practice' pipeline delivered with kit	• Intuitive point-and-click interface for easy analysis of data. No coding required!
• White-labeled	• Interactive visualizations leading to reduced time to scientific insight
• Bundle analysis at point-of-sale through coupon code generation (at no cost or charge to customer)	• High-quality, publication ready figures and charts ready for download
• Real-time tracking of kit usage	• Reports adapted to NGS data type
• Troubleshooting data for kit improvement	• Multiple data upload options including drag & drop of local files, FTP server, command line and out-of-the-box Basespace integration
• Analysis support handled by Basepair	• Option to connect to data in own cloud account
• Global cloud computing deployment	• Professional software support
• Meets or exceeds local data residency policies	• Single business relationship
• Allows pipeline modifications and additions	• Web-based: no need to install software or IT infrastructure
• Controlled access to desired tools & pipelines	• Fast return of analysis results
• Faster time to market and 5X less costly than building in-house	• HIPAA and GDPR compliant environment

The Challenges Faced by Kit, Assay, and Test Manufacturers

Limited Awareness of Data Analysis Solutions

Manufacturers are often unaware that comprehensive data analysis solutions like Basepair's platform exist. They either don't provide any support to analyze their kits, or point users to GitHub repositories, which can be time-consuming for their customers and require significant bioinformatics expertise. Such manufacturers may feel obliged to provide bioinformatics support, so that their customers can extract value from their kits, but this can often be a time suck and is often hard to prioritize or justify given it is not a core part of their business. Alternatively, the manufacturers can decide to build bioinformatics analysis solutions in-house, but these solutions are costly and take time to make production-ready, not to mention necessitating resources to support them. They add unpredictable delays to product introductions, require dedicated staff, and draw resources away from the primary business.

Incomplete Business Intelligence

The lack of their own hosted solution for data analysis hinders kit manufacturers from gaining valuable insights into the usage and performance of their products. More traditional bioinformatics vendors do not have the business operations layer required to bundle analysis at the point-of-sale. However, the business intelligence available to manufacturers who can connect an analysis solution to the sale of a kit, assay or test can drive product improvements, marketing efforts, and overall business growth. With their own hosted data analysis solution, they are able to know when and where their kits are being used and can direct troubleshooting resources effectively when there are issues.

Key Benefits for Manufacturers

White Labeling

A common way for kit makers who choose to go to market with an analysis solution for their kit is to form a co-marketing agreement with a third-party bioinformatics provider. Unfortunately, this cobbled-together solution not only requires a separate business relationship, but also sends their customers, and business intelligence, into the partner's ecosystem and out of theirs. Basepair's platform, by contrast, enables kit manufacturers to white-label bioinformatics services, allowing seamless integration with existing branding and marketing strategies. This feature provides a consistent customer experience while benefiting from Basepair's state-of-the-art bioinformatics solutions.

Coupon Generation for Cost-Control and Reducing Time to Re-order

Basepair's platform provides coupon assignment, enabling manufacturers to bundle their kits with unique codes. These coupons connect end-users to analysis pipelines chosen or built by the manufacturer, so customers see the correct options, and cloud costs are contained. The coupon also enables real-time tracking of kit usage, which enables manufacturers to reduce time to re-order. And improve supply chain management through real time analytics.

Ease of Use

Designed with user-friendliness in mind, Basepair's platform enables customers to perform complex analyses and interpretations with ease. The intuitive interface ensures that end-users, even bioinformatics novices, can access and utilize the tools they need with minimal training. The results of an analysis aren't just a series of files available for download either. Instead, users are able to quickly assess the quality of their data and interactively explore it through a series of dynamic reports designed for each data type. Then, if there do happen to be questions about its use or how to best analyze and interpret the data, these can be handled by Basepair's technical support team, freeing up the kit maker's own support resources to focus on support issues that are more core to the business.

Global Deployment

Basepair's platform supports global deployment, ensuring that kit manufacturers can reach customers worldwide. As a Platform-as-a-Service (PaaS), Basepair allows for easy deployment of software updates, better scalability, improved collaboration, and adherence to data access regulations globally. The platform's ability to enable analyses to be run in any cloud, any account, and anywhere in the world allows manufacturers to provide their customers with a solution that satisfies local data residency policies without the significant investments in time, money, or resources associated with deploying in-house built applications to a multitude of cloud regions around the world. A version control system ensures that R&D can easily deploy the latest releases of a pipeline into production when they are ready to be used by customers, without the time and effort of having to support multiple branches of code. Additionally, the platform optimizes cloud computing and storage costs, reducing them by up to 50%, benefiting both the manufacturer and their customers.

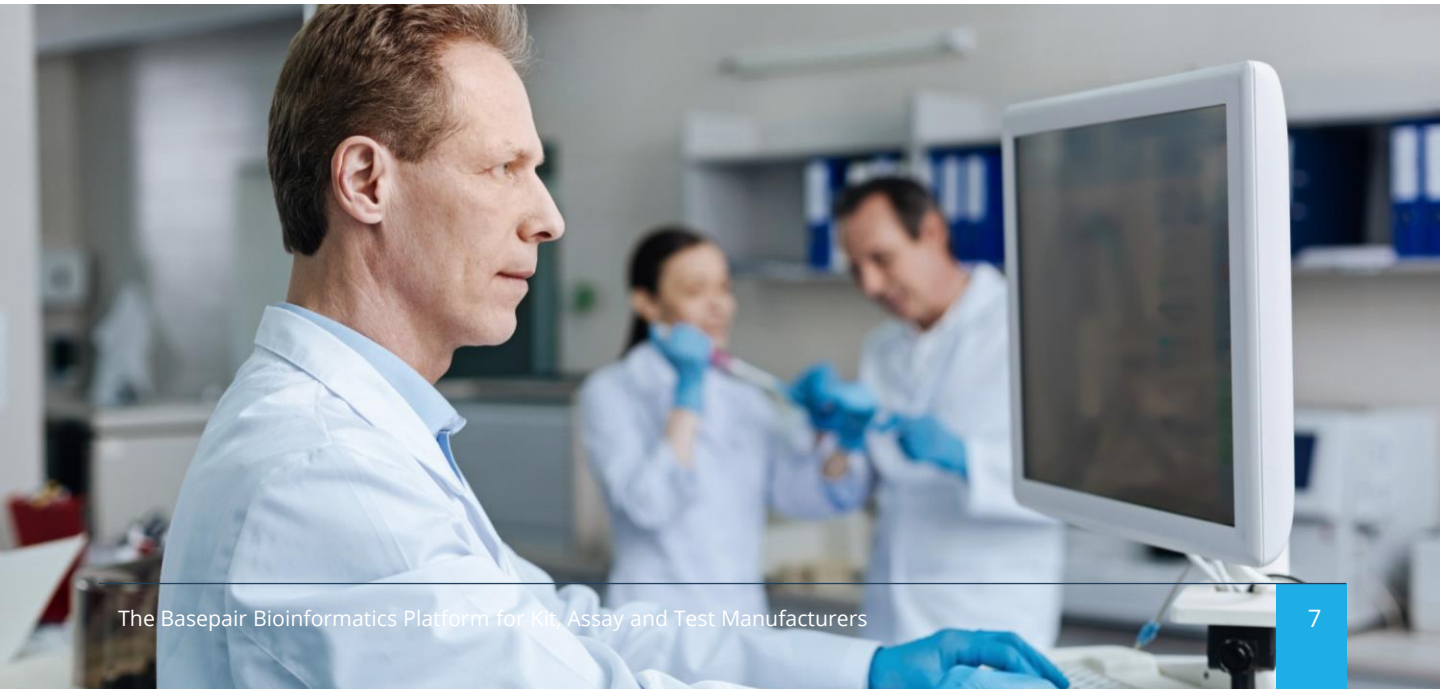
Business Intelligence Advantages

Proactive Tactics and Strategies

By utilizing Basepair's platform, manufacturers gain unprecedented insights into their kits' usage patterns. This information drives proactive tactics, such as support calls to discover issues behind non-utilization, or sales calls when rapid kit consumption uncovers a re-order opportunity. These insights apply strategically, too, to identify new market openings and to brainstorm entirely new products.

Troubleshooting Customer Issues with Kit Quality

Basepair's platform streamlines the troubleshooting process by providing manufacturers with access to metadata and output data related to kit usage. This allows for faster identification of user errors or other issues affecting data quality and enables manufacturers to address customer concerns more effectively.



Key Stakeholders and their Needs

Product Managers

Basepair's platform allows product managers to stay informed about kit usage patterns and customer needs, enabling them to make data-driven decisions about product development and enhancements.

CMOs

Chief Marketing Officers leverage the platform's insights to craft targeted marketing campaigns and outreach strategies, ultimately driving sales and boosting brand awareness.

VPs of Marketing

By utilizing Basepair's platform, VPs of Marketing can stay informed about customer usage trends and make strategic decisions about new products, new marketing initiatives, and resource allocation.

Sales Representatives

Basepair's platform empowers sales representatives with real-time information about kit usage, helping them to identify upselling opportunities.

Differentiating with a Sample-Based Architecture

Enhancing Integration between Wet Lab and Dry Lab

In order to bridge the gap between wet lab operations and the dry lab, Basepair's bioinformatics platform includes a powerful sample metadata layer. This innovative feature enables kit makers to establish a seamless connection between the physical samples being processed in the wet lab and the corresponding data generated by the bioinformatics pipeline in the dry lab. By incorporating a comprehensive sample metadata layer, manufacturers accelerate time to market during new assay development and gain valuable insights into the impact of lab operations on data quality.

LIMS Integration: Automating Metadata Extraction

For each sample, there is associated metadata such as species, library prep details, and other relevant information. With Basepair's REST API, manufacturers can directly connect to a Laboratory Information Management System (LIMS) to automatically extract the necessary metadata. The integration with Illumina's BaseSpace ensures that both the raw data and metadata are seamlessly transferred to Basepair, eliminating the need for manual data entry.

Streamlining Metadata Management

Metadata plays a crucial role in analysis and interpretation. It encompasses information ranging from sample names and genomes to more complex details like library-prep kits used and concentration of reagents. Basepair's platform simplifies metadata management by offering two flexible approaches:

1. **Tags:**

Each sample can be associated with one or more tags, enabling users to easily find samples of interest for future analysis. Tags allow for efficient categorization and comparison, facilitating specific analyses based on predefined criteria.

2. Metadata Forms:

Metadata Forms: Basepair provides a prototype of a comprehensive metadata form, allowing users to capture and record detailed information specific to their needs. These forms can be customized by each user, accommodating various data points such as protocols, additional experimental conditions, or specific parameters of interest. The metadata captured can be directly used in the analysis or later correlated with analysis performance to gain valuable insights into the impact of different variables on data quality.

Enabling Sample Provenance and Simplifying Analysis

Basepair's sample metadata layer revolutionizes the way bench scientists and clinicians perceive and work with data. Instead of dealing with individual files, they can now focus on samples themselves, aligning with their mental model and improving sample provenance tracking. By connecting the biological sample records from LIMS systems to the corresponding sample objects in Basepair, researchers can easily track which samples have been analyzed, assess data quality, and monitor outcomes. This streamlined approach enables quicker product launches and more efficient analysis workflows.

Moreover, the sample metadata layer simplifies pipeline execution by automatically fetching required reference files and other necessary information based on the sample metadata. It ensures that the correct pipeline configurations are applied consistently across different samples, improving accuracy and saving time.

Differentiating with a Sample-Based Architecture

Unlike other genomics analysis platforms that rely on file-based systems, Basepair's sample-based architecture strengthens the integration with LIMS systems. This distinction allows for seamless synchronization of data with LIMS, enhancing data traceability and facilitating collaborations within and across research institutions. Drawing inspiration from NCBI GEO, where a sample-based architecture encourages data reuse, Basepair's approach provides researchers with comprehensive metadata and ensures analysis-ready data without the need for additional metadata retrieval steps.

By incorporating a robust sample metadata layer, Basepair's bioinformatics platform empowers kit makers to establish a cohesive workflow, connecting wet lab operations with the dry lab seamlessly. This integration not only accelerates time to market during new assay development but also provides manufacturers with valuable insights into the relationship between lab operations and data quality.

Implementation Perspectives

Customizing the Platform for Specific Needs

Basepair's platform is easy to modify, allowing manufacturers to tailor the system to fit their unique requirements. This includes the creation of specialist pipelines and visualizations to suit the needs of specific kits or applications, as well as the porting of a manufacturer’s own pipelines to the platform.

Training and Support

To ensure a smooth transition to the Basepair platform, comprehensive training and support are provided to both the internal stakeholders within the kit maker, as well as to their external customer base. This includes onboarding sessions, tutorial videos, and ongoing customer support to address any questions or concerns.

Data Security and Compliance

Basepair's platform adheres to the highest standards of data security and compliance. Sensitive customer data is protected at all times. Compliance with GDPR and HIPAA regulations is assured. Connection to your own cloud account for compute and storage eliminates nearly all compliance issues and enhances security and data privacy.

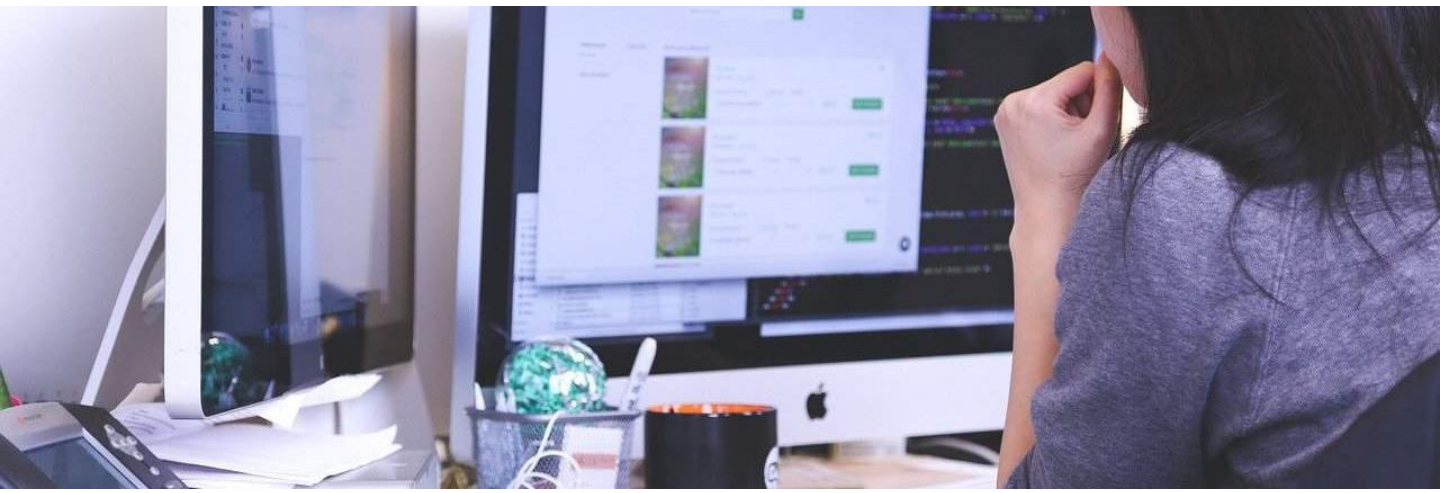
Case Studies

A Leading Library Prep Kit Manufacturer

By integrating Basepair's platform, a leading library prep kit manufacturer streamlined their data analysis process and significantly improved customer satisfaction. The company experienced both a 20% reduction in time to re-order as well as time spent on customer support, all while providing a consistent, high-quality user experience.

A Pioneering IVF Medical Device Company

An IVF medical device company collaborated with Basepair to create a user-friendly NGS analysis software solution for their genomic test kit. By collaborating with Basepair, they were able to create a branded, comprehensive cloud-based software solution for their PGT-A test kit, which enabled rapid detection of aneuploidy for better embryo selection and IVF success rates. The branded solution also included report generation, sign-off capability, and a LIMS system that met their needs perfectly. The cloud-based software can be easily updated to maintain parity with the company's test kits, and adheres to data access regulations globally. Development, deployment, and testing took just three months and positions the company as an industry leader in the fast-paced, competitive market for IVF.



Conclusion

Basepair's bioinformatics platform is revolutionizing the kit, assay, and test market by providing manufacturers with a comprehensive solution that not only removes data analysis bottlenecks that their customers frequently experience, but also delivers real-time business intelligence data that they would otherwise find nearly impossible to access without significant internal development. By adopting Basepair's platform, manufacturers can go to market globally with a bundled kit-and-analysis solution, stay ahead of the competition, reduce time to re-order, and ensure that their customers receive the best possible experience.

Contact us

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