

*100 Years*  
of intellectual capital  
in one software

Family

*Takaful*

Monet Partners Model

# actuarial partners intellectual capital



# accessible resources

## Introducing the Actuarial Partners Takaful Model

1. Using Mo.net financial modelling software, Actuarial Partners (or simply Partners) has developed a Takaful Model. The model incorporates Partners' intellectual capital developed from over 100 years of collective experience in both insurance and Takaful consulting.
2. Active involvement in Takaful consulting since the birth of Takaful in Malaysia in 1984 followed by assignments in countries such as Indonesia, Brunei, Sri Lanka, Saudi Arabia, Qatar, Bahrain, Nigeria and UK has made it possible for Partners to ensure all vital issues in Takaful are accounted for in the functionality of the model (please see the company's website for more details of Partners' past assignments which include pricing, feasibility studies and M&As). This includes the need to consider the tabarru or risk fund separately, and the treatment of Qard within each fund. The model can also be used to address surplus distribution issues.
3. The model contains variables such as contribution holiday, contingency / special fund, Retakaful arrangements including other common as well as innovative Takaful features for instance basic protection, survival and maturity benefits, fund management charges and expenses, investment returns, reserving rates, Mudharabah share on investment income and importantly for Takaful the treatment of Qard which can be accounted for at a policy or fund level. These variables are easily adjusted as parameters in Excel for different products.
4. The model has been developed to accommodate various Takaful operating models e.g. Wakalah and Mudharabah or a hybrid of the two as well as a wide variety of Takaful products e.g. investment linked, mortgage, endowment, etc.
  - a) For pricing work, this proves to be a huge advantage as clients' management can gauge the different profitability levels coming from different plan designs, features, options, and even Takaful operating models.
  - b) As the functionality in the model is developed to enable clients to do all work including pricing, profit testing and valuation, clients can be more adventurous in terms of developing innovative products knowing that the model is able to support complex products.

## 100 years of intellectual capital with support and training at your doorstep

1. Partners leverages off their team's actuarial skills and the firm's intellectual capital.
2. At initial setup, local Mo.net consultants from Partners will provide a turnkey solution, coding all current products into the model. This ensures the basic platform is accurate and the coding efficiently done.
3. Partners consultants are easily accessible to assist clients on any issues with regards to the software or the model i.e. development of new products which may include features that are not already coded in, assistance with running projections, setting up outputs to mirror internal or regulatory reporting templates, etc.
4. Partners consultants assigned will assist clients to maintain and amend models accordingly due to changes in business environment, business model or regulations.
5. Importantly, Partners consultants will be available not just at initial setup but throughout the licensing period.
6. Clients will be offered initial training as well as follow-up training as needed. Training is provided to help clients:
  - a) Get used to Mo.net
  - b) Understand the structure of a model
  - c) Operate Mo.net i.e. to run projection, profit test, data conversion, etc.
  - d) Understand how inputs and variables are linked in the model and how to change them
  - e) Run models from Excel, and analyse data in Excel using the export button / Excel add-in

### Vast potential yet easily modified and simple to use

1. Mo.net is based on Microsoft's .NET technology, hence it does not and will not have legacy issues.
2. The model coding uses Visual Basic (VB) language so clients who are already accustomed to Excel macros can easily understand functions in the model in a short period of time.
3. The models' hierarchical structure makes it easy to change or amend inputs (there is no one core model). Models can be built and tested in isolation and then structured into a hierarchy so that codes are re-used when working on different projects.
4. The hierarchical structure also allows the models to adapt to complex needs using simple coding i.e. using the cash flow model and changing input variables to build on the pricing, profit testing, valuation, solvency, DST projections, and even asset- liability modelling functionality. As an example, the basic building blocks of Takaful i.e. contribution, commission, expenses and Takaful benefits outgo, can lead to the cash flow model and then used again for the reserving model. This ensures models are able to interact with each other making Mo.net a perfect tool for the increasingly complex financial modelling of IFRS and other standards.
5. Compiling and debugging codes are easy in Mo.net as every problem can be broken down to its basic component and intermediate steps. Error messages in Mo.net will direct users to the source of the problem and provide useful information that makes it easy for users to fix.

### Parameter driven and secure with a clear audit trail

1. There are different Mo.net licenses available: Development edition and Runtime edition. Clients' management teams have better control on selecting employees who are granted access to change the functions of a model.
2. Employees with Runtime licenses will only be able to change inputs and variables files (in Excel) as well as create and run projections. Supervisors may also opt to lock certain variables in Excel. These inputs and variables can then be exported and checked by clients' supervisors for each run. This hierarchy in terms of work processes will help clients minimize errors in runs, and gain better user control and compliance with ISO Standards.
3. Mo.net has full workgroup functionality, including:
  - a) Version control
  - b) Auditing logs of model changes
  - c) Backup and archive functionality – storing data and models in a single archive
4. Mo.net also has the functionality to create DLL files that work separately in Excel. This gives users the ability to run advanced financial projections and varying underlying inputs and parameters from within Excel without having to open Mo.net.



### Speed

1. Mo.net is able to run in parallel and on multi-core or 64 bit systems. Under complex modelling this can significantly decrease run time.
2. In the extreme computational complexities of Solvency II in Europe, Mo.net has been shown to provide significant speed advantages over existing software.

simple and  
flexible  
with vast  
potential

SECURE

fast

all-in-one  
software

### Functionality

1. Partners Takaful Model can be used for a wide variety of actuarial work – some of which are listed below:
  - a) Product pricing and profit testing
  - b) Net contribution valuation
  - c) Gross contribution valuation
  - d) Statutory valuation including Risk Based Capital for Takaful (RBCT)
  - e) Surplus distribution calculations
  - f) Asset share calculations
  - g) Embedded value calculations
  - h) Profitability assessment of new business written
  - i) Dynamic Solvency Testing (DST)
  - j) Projection of balance sheets and income statements

affordable

### Fees

1. Fees are customised to individual company's requirements or services rendered. Some of the services Partners offer are as follows:
  - a) Initial coding of products and Takaful business model into Mo.net
  - b) Cash flow tests on product line
  - c) Set up of templates to meet internal or regulatory reporting requirements
  - d) Training
  - e) Maintenance
2. Fees will be reasonable as the local support team is based in Malaysia.

tried &  
tested

### Mo.net case studies

1. Although Mo.net is used extensively in Europe by the likes of AEGON UK, Barnett Waddingham LLP, Fortis UK (Now Ageas Protect UK), GenRe and KPMG, it is fairly new to our shores and is just being introduced to insurers and operators in this region. In the
2. course of Partners' consultancy engagements, Mo.net has been used for the following type of work:
  - a) Appraisal Valuation – Partners has used a model on appraisal work for a Takaful operator. The entire exercise was done using Mo.net i.e. data checks, projection and sensitivity tests. The appraisal was done on a combination of unit linked and non-linked plans under a pure Wakalah model as well as a combination Wakalah and Mudharabah model. The sensitivity tests included variations in operating model such as contingency fund, surplus and investment sharing to assist the operator in maximizing the value of new business.
  - b) Reserve valuation and solvency requirement under RBCT – Mo.net has been used to calculate reserves and the risk charges required under RBCT for a Takaful operator in Malaysia.
  - c) Audit work – Partners has performed checks on a Malaysian Takaful operator's gross contribution valuation and RBCT calculations and cash flow outputs produced by a competitor's software.

With Mo.net, a project's lead time can be significantly shortened without the need to allocate additional resources to the project.

contact

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